Revised Traffic Impact Analysis

Young Street PUD
Rolesville, NC

Prepared for:

Ashton Woods

Kimley»Horn

Revised Traffic Impact Analysis for

Young Street PUD

Rolesville, North Carolina

Prepared for:

Ashton Woods
Raleigh, North Carolina

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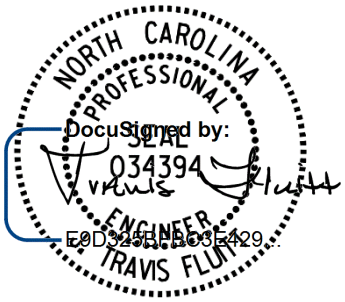


6/13/2019

Executive Summary

Kimley-Horn and Associates, Inc. has revised the original Traffic Impact Analysis dated April 4, 2019 for the proposed Young Street PUD to address comments provided by the Town of Rolesville and the North Carolina Department of Transportation (NCDOT). The project will be located along both sides of the US 401 Bypass west of Young Street in Rolesville, North Carolina. The portion of the property north of US 401 Bypass is currently vacant and is adjacent to residential development. The portion of the property south of US 401 Bypass has one single-family home, and adjacent uses include Rolesville High School and some residential development. This project is an update to the Shearon/Byrum/Williams PUD, which included 250 townhomes (with approximately 210 of those located north of the US 401 Bypass), 650 single-family homes, and 10.82 acres of commercial space. The updated PUD will allow for up to 320 townhomes, 621 single-family homes (with approximately 96 of those located north of the US 401 Bypass), and 12.28 acres of commercial space.

Since there are no plans to develop the commercial portion of the site at this time, analyses were performed with and without the commercial portion of the development. For this analysis it was assumed that the commercial space could be developed at 10,000 square feet per acre.

The single-family homes north of the US 401 Bypass are proposed to be accessed via the extension of Genovesa Drive. Development south of the US 401 Bypass is proposed to be accessed via site driveways on Young Street aligning with Quarry Road and the Rolesville High School driveway with a third generally centered between those two driveways. Build-out of the development is envisioned in 2025.

At each of the study intersections, the adjacent street AM (6:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak hours were analyzed. Additionally, in order to determine the impacts of site traffic during the school PM peak hour (assumed to occur between 1:00 to 4:00 PM based on school hours at Rolesville High School), analyses were performed at the intersections of Young Street at Quarry Road and Young Street at the Rolesville High School Driveway for that peak as well. The AM peak hour of the school aligns with the AM peak hour of the adjacent street traffic.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2019) traffic condition, the projected (2025) background traffic condition, the projected (2025) residential build-out traffic condition, the projected (2025) commercial build-out traffic condition (which includes the total development), and the projected (2025) commercial build-out of the currently-approved PUD.

Per discussions with the Town of Rolesville, trip generation calculations for both build-out scenarios separated out development proposed to the north and south of the US 401 Bypass. As shown in **Table ES-1** below, the currently-approved PUD has the potential to generate 10,098 new trips during a typical weekday with 777 new trips during the AM peak hour, 787 new trips during the school PM peak hour, and 958 new trips during the PM peak hour.

Table ES-1 – Currently-Approved PUD ITE Traffic Generation (Vehicles)											
Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		School PM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out	In	Out
Development North of US 401 Bypass											
220	Multifamily Housing – Low-Rise	210	d.u.	774	774	22	75	54	32	72	42
North Side Total Net New External Trips				**774**	**774**	**22**	**75**	**54**	**32**	**72**	**42**
Development South of US 401 Bypass											
220	Single Family Detached Housing	650	d.u.	2,910	2,910	117	349	300	177	386	227
220	Multifamily Housing – Low-Rise	40	d.u.	131	131	5	15	12	8	16	10
820	Shopping Center	108,200	s.f.	3,172	3,172	128	78	276	300	276	300
Internal Capture (South Side Only)				*1,062*	*1,062*	*6*	*6*	*106*	*106*	*106*	*106*
Pass-by Reduction (South Side Only)				*876*	*876*	*0*	*0*	*84*	*75*	*84*	*75*
South Side Total Net New External Trips				4,275	4,275	244	436	398	303	488	356
Total Net New External Trips – Current PUD				**5,049**	**5,049**	**266**	**511**	**452**	**335**	**560**	**398**

As shown in **Table ES-2** below, the northern and southern residential components have the potential to generate 8,162 new trips during a typical weekday with 595 new trips during the AM peak hour, 589 new trips during the school PM peak hour, and 763 new trips during the PM peak hour.

Table ES-2 – Residential Build-out ITE Traffic Generation (Vehicles)											
Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		School PM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out	In	Out
Development North of US 401 Bypass											
220	Single Family Detached Housing	96	d.u.	501	501	18	55	48	28	62	36
North Side Total Net New External Trips				**501**	**501**	**18**	**55**	**48**	**28**	**62**	**36**
Development South of US 401 Bypass											
220	Single Family Detached Housing	525	d.u.	2,391	2,391	95	283	244	144	314	185
220	Multifamily Housing – Low-Rise	320	d.u.	1,189	1,189	33	111	79	46	105	61
South Side Total Net New External Trips				**3,580**	**3,580**	**128**	**394**	**323**	**190**	**419**	**246**
Total New External Trips – Residential Phase				**4,081**	**4,081**	**146**	**449**	**371**	**218**	**481**	**282**

As shown in **Table ES-3** below, the commercial build-out of the site has the potential to generate 10,838 new trips during a typical weekday with 794 new trips during the AM peak hour, 814 new trips during the school PM peak hour, and 988 new trips during the PM peak hour.

Table ES-3 – Commercial Build-out
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		School PM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out	In	Out
Development North of US 401 Bypass											
220	Single Family Detached Housing	96	d.u.	501	501	18	55	48	28	62	36
North Side Total Net New External Trips				**501**	**501**	**18**	**55**	**48**	**28**	**62**	**36**
Development South of US 401 Bypass											
220	Single Family Detached Housing	525	d.u.	2,391	2,391	95	283	244	144	314	185
220	Multifamily Housing – Low-Rise	320	d.u.	1,189	1,189	33	111	79	46	105	61
820	Shopping Center	122,800	s.f.	3,457	3,457	132	81	304	329	304	329
Internal Capture (South Side Only)				*1,158*	*1,158*	*7*	*7*	*116*	*116*	*116*	*116*
Pass-by Reduction (South Side Only)				*961*	*961*	*0*	*0*	*93*	*83*	*93*	*83*
South Side Total Net New External Trips				4,918	4,918	253	468	418	320	514	376
Total Net New External Trips – Commercial Build-out				**5,419**	**5,419**	**271**	**523**	**466**	**348**	**576**	**412**

Based on these trip generation calculations, the proposed PUD is expected to only generate approximately 740 more net new daily trips, 17 additional AM peak hour trips, 27 additional school PM peak hour trips, and 30 additional PM peak hour trips than the currently-approved PUD.

Capacity analyses were performed using Synchro Version 10 software. **Table ES-4** summarizes the operation of the study intersections for the AM and PM peak hour traffic conditions. For reference, US 401 Bypass was analyzed as the east-west roadway for this analysis given its alignment through the study area.

Table ES-4 Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
US 401 Bypass Westbound at Young Street (Signalized)		
Existing (2019) Traffic	B (10.7)	A (3.0)
Background (2025) Traffic	B (12.9)	A (3.2)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	B (15.4)	A (6.5)
Residential Build-out (2025) Traffic with Signal Timing Improvements	B (14.4)	A (6.3)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	B (15.2)	A (6.6)
US 401 Bypass Eastbound at Young Street (Signalized)		
Existing (2019) Traffic	A (2.5)	A (4.2)
Background (2025) Traffic	A (2.8)	A (6.6)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (7.6)	B (13.0)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (7.1)	B (11.2)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (7.9)	B (13.3)
US 401 Bypass at U-Turn East of Young Street (Signalized)		
Existing (2019) Traffic	A (4.8)	A (3.6)
Background (2025) Traffic	A (4.7)	A (3.8)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (3.7)	A (1.6)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (4.2)	A (1.8)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (3.8)	A (1.6)
US 401 Bypass at U-Turn West of Young Street (Signalized)		
Existing (2019) Traffic	A (4.2)	A (5.0)
Background (2025) Traffic	A (4.3)	A (4.9)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (1.7)	A (3.3)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (1.5)	A (3.1)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (1.8)	A (3.3)

Table ES-4 (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Young Street at Virginia Water Drive (Unsignalized)		
Existing (2019) Traffic	EB – C (15.0) NBL – A (8.5)	EB – B (12.8) NBL – A (8.1)
Background (2025) Traffic	EB – C (16.4) NBL – A (8.6)	EB – B (14.4) NBL – A (8.4)
Current PUD Build-out (2025) Traffic	EB – C (22.1) NBL – A (8.8)	EB – C (18.4) NBL – A (8.8)
Residential Build-out (2025) Traffic	EB – C (20.2) NBL – A (8.7)	EB – C (17.6) NBL – A (8.7)
Commercial Build-out (2025) Traffic	EB – C (21.1) NBL – A (8.8)	EB – C (18.3) NBL – A (8.8)
Virginia Water Drive at Genovesa Drive (Unsignalized)		
Existing (2019) Traffic	NB – A (9.2) SB – A (9.2) EBL – A (7.3) WBL – A (7.3)	NB – A (9.3) SB – A (9.1) EBL – A (7.3) WBL – A (7.3)
Background (2025) Traffic	NB – A (9.1) SB – A (9.1) EBL – A (7.3) WBL – A (7.3)	NB – A (9.3) SB – A (9.2) EBL – A (7.4) WBL – A (7.3)
Current PUD Build-out (2025) Traffic	NB – A (9.3) SB – A (9.4) EBL – A (7.3) WBL – A (7.4)	NB – A (9.9) SB – B (10.0) EBL – A (7.4) WBL – A (7.5)
Residential Build-out (2025) Traffic	NB – A (9.2) SB – A (9.3) EBL – A (7.3) WBL – A (7.4)	NB – A (9.7) SB – A (9.8) EBL – A (7.4) WBL – A (7.5)
Commercial Build-out (2025) Traffic	NB – A (9.2) SB – A (9.3) EBL – A (7.3) WBL – A (7.4)	NB – A (9.7) SB – A (9.8) EBL – A (7.4) WBL – A (7.5)
Young Street at Century Farm Road (Unsignalized)		
Existing (2019) Traffic	WB – D (26.5) SBL – A (9.0)	WB – B (13.8) SBL – A (8.1)
Background (2025) Traffic	WB – D (26.1) SBL – A (9.3)	WB – C (18.9) SBL – A (8.5)
Current PUD Build-out (2025) Traffic	WB – E (47.3) SBL – B (10.5)	WB – E (39.2) SBL – A (9.3)
Residential Build-out (2025) Traffic	WB – E (40.3) SBL – B (10.4)	WB – D (33.3) SBL – A (9.1)
Commercial Build-out (2025) Traffic	WB – E (48.4) SBL – B (10.6)	WB – E (40.9) SBL – A (9.4)

Table ES-4 (cont.) Level-of-Service Summary			
Condition	**AM Peak Hour LOS (Delay)**	**School PM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Young Street at Quarry Road/Northern Site Driveway			
Existing (2019) Traffic	WB – D (30.3) SBL – A (9.7)	WB – C (18.5) SBL – A (9.0)	WB – B (12.9) SBL – A (8.2)
Background (2025) Traffic	WB – F (131.7) SBL – B (12.0)	WB – E (38.0) SBL – A (9.9)	WB – C (21.4) SBL – A (8.8)
Current PUD Build-out (2025) Traffic with Improvements – *Signalized*	D (35.2)	C (25.6)	B (17.6)
Residential Build-out (2025) Traffic with Improvements – *Signalized*	D (40.5)	C (23.9)	B (17.4)
Commercial Build-out (2025) Traffic with Improvements – *Signalized*	D (39.7)	C (23.4)	B (17.8)
Young Street at Rolesville High School Driveway/Southern Site Driveway (Unsignalized)			
Existing (2019) Traffic	WB – F (155.8) SBL – A (9.7)	WB – C (19.6) SBL – A (8.2)	WB – B (11.2) SBL – A (8.0)
Background (2025) Traffic	WB – F (446.0) NBL – B (11.8)	WB – F (64.9) SBL – A (8.7)	WB – B (13.5) SBL – A (8.4)
Current PUD Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.2) SBL – B (12.4)	EB – F (425.5) WB – F (323.8) NBL – A (9.8) SBL – A (9.2)	EB – E (35.8) WB – C (19.1) NBL – A (8.9) SBL – A (8.6)
Residential Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.1) SBL – B (12.1)	EB – F (226.9) WB – F (247.1) NBL – A (9.4) SBL – A (9.1)	EB – D (30.7) WB – C (18.0) NBL – A (8.8) SBL – A (8.6)
Commercial Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.3) SBL – B (12.4)	EB – F (550.7) WB – F (343.1) NBL – A (9.9) SBL – A (9.2)	EB – E (36.1) WB – C (19.4) NBL – A (9.0) SBL – A (8.6)

Table ES-4 (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Rolesville Road at Mitchell Mill Road		
Existing (2019) Traffic – *All-Way Stop*	C (16.2)	B (10.6)
Background (2025) Traffic – *All-Way Stop*	C (22.0)	B (13.1)
Current PUD Build-out (2025) Traffic – *Signalized*	B (18.9)	B (11.7)
Residential Build-out (2025) Traffic – *Signalized*	B (18.2)	B (11.4)
Commercial Build-out (2025) Traffic – *Signalized*	B (19.2)	B (13.2)
Young Street at Central Site Driveway (Unsignalized)		
Current PUD Build-out (2025) Traffic with Improvements	EB – F (52.3) NBL – B (10.0)	EB – D (29.9) NBL – B (10.0)
Residential Build-out (2025) Traffic with Improvements	EB – E (41.4) NBL – A (9.7)	EB – C (24.0) NBL – A (9.8)
Commercial Build-out (2025) Traffic with Improvements	EB – F (58.2) NBL – B (10.0)	EB – D (31.4) NBL – B (10.1)

Residential Build-out

The following improvements are recommended to be performed to accommodate projected site traffic volumes at build-out of the residential portion of the development:

US 401 Bypass:

- Coordinate the traffic signals at the intersections of US 401 at Young Street and the Superstreet U-turns

Young Street at Quarry Road/North Site Driveway:

- Construct a northbound left-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Construct a southbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Restripe the existing westbound left-turn lane on Quarry Road to a shared left/through lane
- Provide an exclusive left-turn lane with 275 feet of storage and appropriate tapers and a shared through/right lane on the North Site Driveway
- Install a traffic signal when warranted

Young Street at Central Site Driveway:

- Construct a northbound left-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Construct a southbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers

- Provide exclusive left and right-turn lanes on the Central Site Driveway with 125 feet of storage and appropriate tapers for the left-turn lane

Young Street at Rolesville High School Driveway/South Site Driveway:

- Construct a northbound left-turn lane on Young Street with 50 feet of storage and appropriate tapers
- Provide one egress lane on the South Site Driveway

Rolesville Road at Mitchell Mill Road:

- Install a traffic signal when warranted

Analyses indicate that with the recommended improvements in place, all of the study intersections except for Young Street at Century Farm Road and Young Street at Rolesville High School Driveway/South Site Driveway are expected to operate at an acceptable LOS at build-out of the residential-only phase of the development.

Analyses indicate that the intersection of Young Street at Century Farm Road is expected to operate with long delays on the minor street approach (Century Farm Road) in the AM peak hour at project build-out. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours while the majority of the traffic moving through the intersection on the major street experiences little or no delay. SimTraffic traffic simulations indicate that no queuing issues are expected at this intersection.

Analyses indicate that the intersection of Young Street at the Rolesville High School Driveway/South Site Driveway is expected to operate with long delays on the minor street approach (Rolesville High School Driveway) in the AM peak hour and school PM peak hour with or without the proposed project in place in the study year 2025. SimTraffic traffic simulations also indicate the possibility of long queues on the westbound left-turn movement at this intersection in the AM peak hour and school PM peak hour. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. This intersection is not expected to meet 4-hour or 8-hour MUTCD traffic signal warrants.

Commercial Build-out

The following additional improvements are recommended to be performed in addition to those recommended above for the residential phase to accommodate projected site traffic volumes when the retail portion of the site is developed:

US 401 Bypass Eastbound at Young Street:

- Extend the storage of the existing eastbound right-turn lane on US 401 Bypass by approximately 175 feet to provide 400 feet of storage and appropriate tapers

Young Street at Quarry Road/North Site Driveway:

- Construct a northbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Modify the traffic signal to accommodate the additional laneage

Analyses indicate that with the recommended improvements in place, all of the study intersections except for Young Street at Century Farm Road, Young Street at the Central Site Driveway, and Young Street at Rolesville High School Driveway/South Site Driveway are expected to operate at acceptable LOS at commercial build-out of the development.

Analyses indicate that the intersection of Young Street at Century Farm Road is expected to operate with long delays on the minor street approach (Century Farm Road) in the AM peak hour at project build-out. It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. SimTraffic traffic simulations indicate that short queues are likely on the minor street approach in the AM peak hour at commercial build-out.

Analyses indicate that the intersection of Young Street at the Central Site Driveway is expected to operate with long delays on the minor street approach (Central Site Driveway) in the AM peak hour in the commercial build-out traffic condition. It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. SimTraffic traffic simulations indicate the possibility of long queues on the eastbound left-turn movement at this intersection in the AM peak hour in the commercial build-out condition.

Analyses indicate that the intersection of Young Street at the Rolesville High School Driveway/South Site Driveway is expected to operate with long delays on the minor street approach (Rolesville High School Driveway) in the AM peak hour and school PM peak hour with or without the proposed project in place in the study year 2025. SimTraffic traffic simulations also indicate the possibility of long queues on the westbound left-turn movement at this intersection in the AM peak hour and school PM peak hour. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. This intersection is not expected to meet 4-hour or 8-hour MUTCD traffic signal warrants.

As shown in the analysis, the impact of site traffic associated with the commercial build-out of this proposed PUD is generally consistent with the currently-approved PUD for the site. The proposed PUD is expected to generate no more than 50 additional peak hour trips in each of the studied peak hours compared to the approved PUD, and delays at commercial build-out of both plans are generally consistent at each of the study intersections.

The recommended laneage for the development is shown on **Figure ES-1**.

NOT TO SCALE

YOUNG ST.

US-401 BYP. WB

US-401 BYP. EB

CENTURY FARM RD.

QUARRY RD.

ROLESVILLE HIGH SCHOOL DRWY.

MITCHELL MILL RD.

ROLESVILLE RD.

VIRGINIA WATER DR.

GENOVESA DR.

NORTHERN SITE DRWY.

CENTRAL SITE DRWY.

SOUTHERN SITE DRWY.

NORTH SITE

SOUTH SITE

LEGEND

- EXISTING LANE
- EXISTING TRAFFIC SIGNAL
- EXISTING STOP SIGN
- RECOMMENDED LANE – RESIDENTIAL BUILD–OUT
- RECOMMENDED TRAFFIC SIGNAL – RESIDENTIAL BUILD–OUT
- RECOMMENDED TRAFFIC SIGNAL MODIFICATIONS FOR COORDINATION – RESIDENTIAL BUILD–OUT
- RECOMMENDED STOP SIGN
- RECOMMENDED LANE – COMMERCIAL BUILD–OUT
- xx' TURN LANE EXTENSION – COMMERCIAL BUILD–OUT
- RECOMMENDED TRAFFIC SIGNAL MODIFICATION – COMMERCIAL BUILD–OUT
- XX' STORAGE LENGTH

FIGURE ES–1

RECOMMENDED ROADWAY LANEAGE

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

1.0 Introduction

Kimley-Horn and Associates, Inc. has revised the original Traffic Impact Analysis dated April 4, 2019 for the proposed Young Street PUD to address comments provided by the Town of Rolesville and NCDOT. The project will be located along both sides of the US 401 Bypass west of Young Street in Rolesville, North Carolina. The portion of the property north of US 401 Bypass is currently vacant and is adjacent to residential development. The portion of the property south of US 401 Bypass has one single-family home, and adjacent uses include Rolesville High School and some residential development. This project is an update to the Shearon/Byrum/Williams PUD, which included 250 townhomes (with approximately 210 of those located north of the US 401 Bypass), 650 single-family homes, and 10.82 acres of commercial space. The updated PUD will allow for up to 320 townhomes, 621 single-family homes (with approximately 96 of those located north of the US 401 Bypass), and 12.28 acres of commercial space.

Since there are no plans to develop the commercial portion of the site at this time, analyses were performed with and without the commercial portion of the development. For this analysis it was assumed that the commercial space could be developed at 10,000 square feet per acre.

The single-family homes north of the US 401 Bypass are proposed to be accessed via the extension of Genovesa Drive. Development south of the US 401 Bypass is proposed to be accessed via site driveways on Young Street aligning with Quarry Road and the Rolesville High School driveway with a third generally centered between those two driveways. Build-out of the development is envisioned in 2025.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2019) traffic condition, the projected (2025) background traffic condition, the projected (2025) residential build-out traffic condition, the projected (2025) commercial build-out traffic condition (which includes the total development), and the projected (2025) commercial build-out of the currently-approved PUD.

Town of Rolesville and North Carolina Department of Transportation (NCDOT) staff provided background data and were consulted regarding the elements to be covered in this analysis. The approved Memorandum of Understanding is included in the Appendix of this report.

2.0 Inventory

2.1 *Study Area*

The study area for this development in includes the following intersections:

- US 401 Bypass at Young Street
- US 401 Bypass at East Young Street U-Turn
- US 401 Bypass at West Young Street U-Turn
- Young Street at Virginia Water Drive
- Virginia Water Drive at Genovesa Drive
- Young Street at Century Farm Road
- Young Street at Quarry Road/Northern Site Driveway
- Young Street at Rolesville High School Driveway/Southern Site Driveway
- Rolesville Road at Mitchell Mill Road
- Young Street at Central Site Driveway

Figure 1 shows the site location. The preliminary site plan is shown on **Figure 2**.

2.2 *Existing Conditions*

The Young Street PUD project is proposed to be located along US 401 Bypass west of Young Street in Rolesville, North Carolina. Roadways in the study area include US 401 Bypass, Young Street, Mitchell Mill Road, Quarry Road, Virginia Water Drive, Genovesa Drive, and Century Farm Road. The existing roadway laneage is shown in **Figure 3**.

US 401 Bypass is a 4-lane divided principal arterial with a posted speed limit of 55 mph in the vicinity of the site. While US 401 would typically be assumed as the north-south street, the alignment is east-west through the study area and was analyzed as such. The estimated 2019 average daily traffic (ADT) volume is approximately 19,400 vehicles per day (vpd) west of Young Street.

Young Street is generally a 2 or 3-lane undivided minor arterial through the study area with a posted speed limit of 45 mph, which is reduced to 35 mph in the school zone for Rolesville High School. The estimated 2019 ADT volume is approximately 10,000 vpd north of Quarry Road. Young Street becomes Rolesville Road south of Sunset Manor Drive.

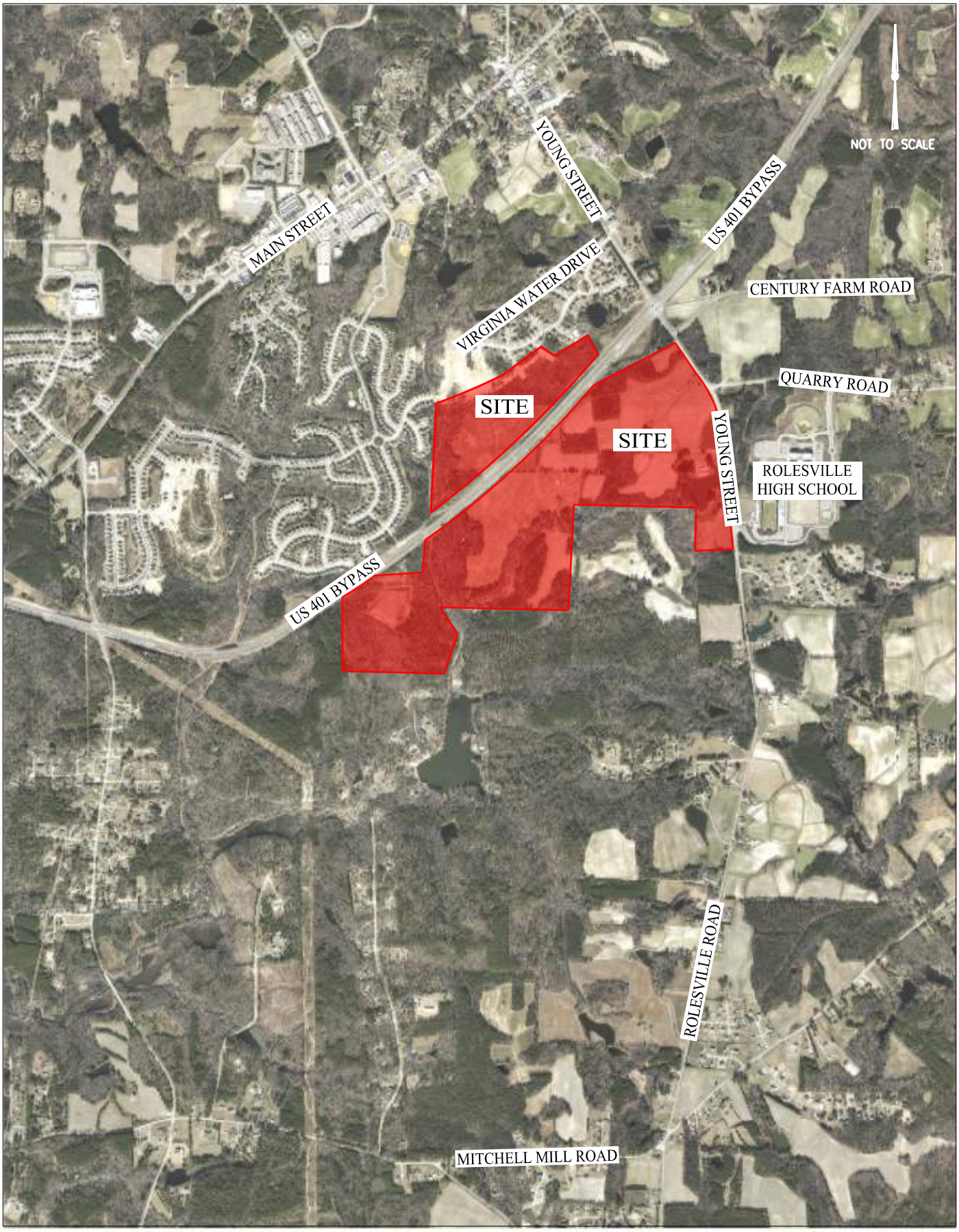
Mitchell Mill Road is a 2-lane undivided major collector road with a posted speed limit of 45 mph. The estimated 2019 ADT volume is approximately 2,700 vpd west of Young Street.

Quarry Road is a 2-lane undivided roadway with a posted speed limit of 45 mph. The estimated 2019 ADT volume is approximately 2,500 vpd near Young Street.

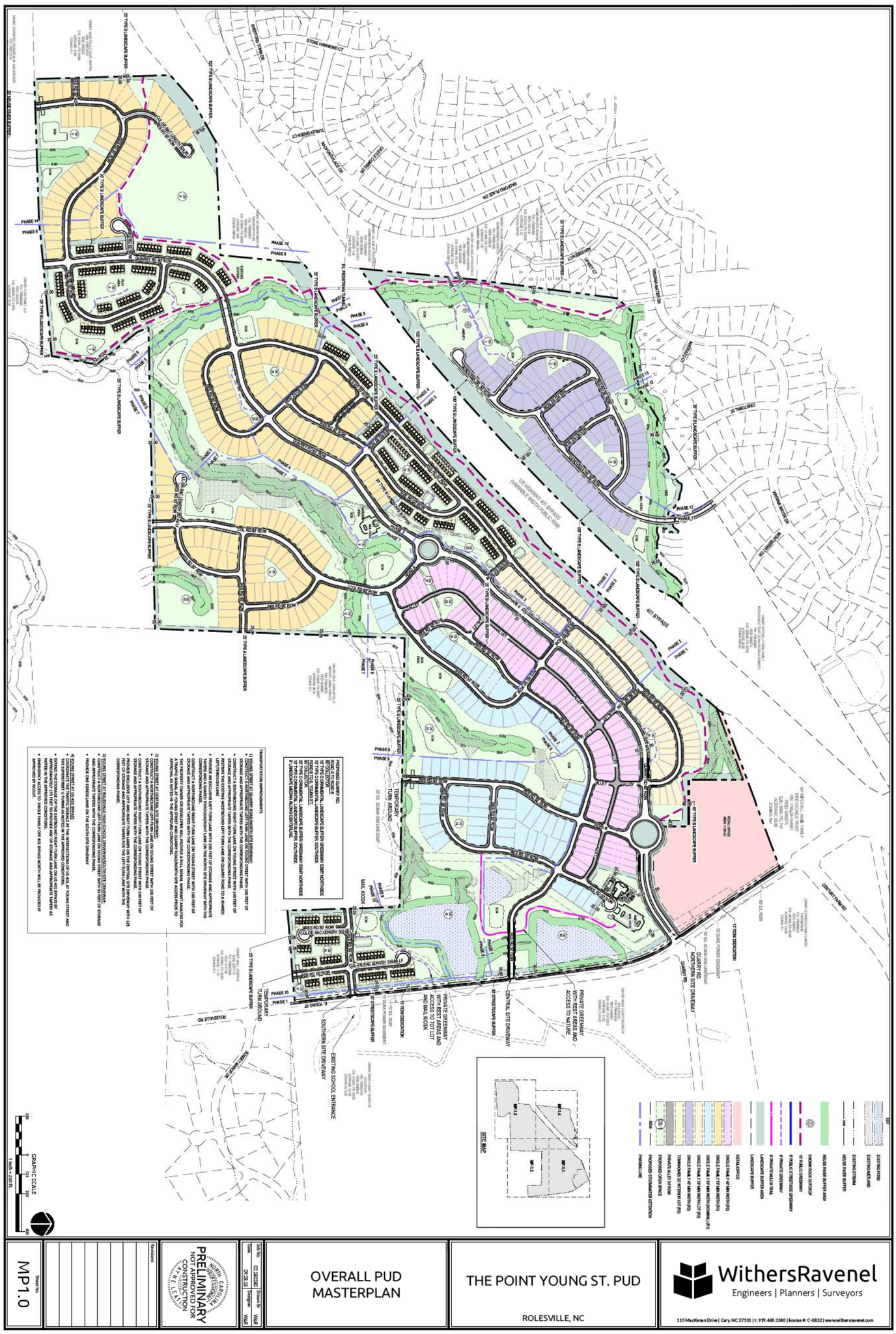
Virginia Water Drive is a 2-lane undivided roadway with an assumed speed limit of 25 mph. The estimated 2019 ADT volume is approximately 1,000 vpd near Young Street.

Genovesa Drive is a 2-lane undivided roadway with an assumed speed limit of 25 mph. The estimated 2019 ADT volume is less than 1,000 vpd.

Century Farm Road is a 2-lane undivided roadway with an assumed speed limit of 45 mph. The estimated 2019 ADT volume is less than 1,000 vpd near Young Street.



Kimley»Horn	YOUNG STREET PUD ROLESVILLE, NC TRAFFIC IMPACT ANALYSIS	SITE LOCATION	FIGURE 1



Kimley»Horn

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

PRELIMINARY SITE PLAN

FIGURE
2

NOT TO SCALE

US-401 BYPASS WB

US-401 BYPASS EB

CENTURY FARM RD.

QUARRY RD.

ROLESVILLE HIGH SCHOOL DRWY.

MITCHELL MILL RD.

YOUNG ST.

ROLESVILLE RD.

VIRGINIA WATER DR.

GENOVESA DR.

SPEED LIMIT 35

SPEED LIMIT 45

SPEED LIMIT 55

180'

200'

400'

820'

820'

250'

500'

1,250'

505'

965'

2,190'

9,465'

85'

90'

525'

250'

255'

350' (FREE)

350'

285'

2,625'

800'

800'

375'

500'

225'

LEGEND

- EXISTING LANE
- EXISTING STOP SIGN
- EXISTING TRAFFIC SIGNAL
- XX' STORAGE LENGTH
- SPEED LIMIT 45 POSTED SPEED LIMIT
- EXISTING CHANNELIZED RIGHT TURN LANE

FIGURE 3

EXISTING ROADWAY LANEAGE

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

3.0 Traffic Generation

The traffic generation potential of the proposed development was determined using the traffic generation rates published in *Trip Generation* (Institute of Transportation Engineers, Tenth Edition, 2017). Per discussions with the Town of Rolesville, trip generation calculations separated out development proposed to the north and south of the US 401 Bypass.

This project is an update to the Shearon/Byrum/Williams PUD, which included 250 townhomes (with approximately 210 of those located north of the US 401 Bypass), 650 single-family homes, and 10.82 acres of commercial space. The updated PUD will allow for up to 320 townhomes, 621 single-family homes (with approximately 96 of those located north of the US 401 Bypass), and 12.28 acres of commercial space.

Since there are no plans to develop the commercial portion of the site at this time, analyses were performed with and without the commercial portion of the development. For this analysis it was assumed that the commercial space could be developed at 10,000 square feet per acre.

The trip generation for the Current PUD is shown in **Table 3.1** below. As shown, the currently-approved PUD has the potential to generate 10,098 new trips during a typical weekday with 777 new trips during the AM peak hour, 787 new trips during the school PM peak hour, and 958 new trips during the PM peak hour.

Table 3.1 – Currently Approved PUD
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		School PM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out	In	Out
Development North of US 401 Bypass											
220	Multifamily Housing – Low-Rise	210	d.u.	774	774	22	75	54	32	72	42
North Side Total Net New External Trips				**774**	**774**	**22**	**75**	**54**	**32**	**72**	**42**
Development South of US 401 Bypass											
220	Single Family Detached Housing	650	d.u.	2,910	2,910	117	349	300	177	386	227
220	Multifamily Housing – Low-Rise	40	d.u.	131	131	5	15	12	8	16	10
820	Shopping Center	108,200	s.f.	3,172	3,172	128	78	276	300	276	300
Internal Capture (South Side Only)				*1,062*	*1,062*	*6*	*6*	*106*	*106*	*106*	*106*
Pass-by Reduction (South Side Only)				*876*	*876*	*0*	*0*	*84*	*75*	*84*	*75*
South Side Total Net New External Trips				4,275	4,275	244	436	398	303	488	356
Total Net New External Trips – Current PUD				**5,049**	**5,049**	**266**	**511**	**452**	**335**	**560**	**398**

As shown in **Table 3.2** below, the northern and southern residential components have the potential to generate 8,162 new trips during a typical weekday with 595 new trips during the AM peak hour, 589 new trips during the school PM peak hour, and 763 new trips during the PM peak hour.

Table 3.2 – Residential Build-out
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		School PM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out	In	Out
Development North of US 401 Bypass											
220	Single Family Detached Housing	96	d.u.	501	501	18	55	48	28	62	36
North Side Total Net New External Trips				**501**	**501**	**18**	**55**	**48**	**28**	**62**	**36**
Development South of US 401 Bypass											
220	Single Family Detached Housing	525	d.u.	2,391	2,391	95	283	244	144	314	185
220	Multifamily Housing – Low-Rise	320	d.u.	1,189	1,189	33	111	79	46	105	61
South Side Total Net New External Trips				**3,580**	**3,580**	**128**	**394**	**323**	**190**	**419**	**246**
Total New External Trips – Residential Phase				**4,081**	**4,081**	**146**	**449**	**371**	**218**	**481**	**282**

As shown in **Table 3.3** below, the commercial build-out of the site has the potential to generate 10,838 new trips during a typical weekday with 794 new trips during the AM peak hour, 814 new trips during the school PM peak hour, and 988 new trips during the PM peak hour. Based on these trip generation calculations, the proposed PUD is expected to only generate approximately 740 more net new daily trips, 17 additional AM peak hour trips, 27 additional school PM peak hour trips, and 30 additional PM peak hour trips than the currently-approved PUD.

Per "Hourly Entering and Exiting Vehicle Trips by Land Use" data provided in the ITE *Trip Generation Manual,* low-rise multifamily residential traffic in the 2-4 PM peak hour is approximately 6% of the daily traffic, while 8% of the daily traffic volume for low-rise multifamily residential occurs in the 4-6 PM peak hour. Similarly, single-family detached residential traffic in the 2-4 PM peak hour is approximately 7% of the daily traffic, while 9% of the daily traffic volume for low-rise multifamily residential occurs in the 4-6 PM peak hour. These factors were applied to daily traffic volumes for the residential units to determine the school PM peak hour trip generation. As ITE indicates that traffic volumes are generally consistent between the 2-4 PM peak hour and the 4-6 PM peak hour for the shopping center land use, no reduction factor was applied for school PM peak hour trip generation calculations.

Table 3.3 – Commercial Build-out ITE Traffic Generation (Vehicles)											
Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		School PM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out	In	Out
Development North of US 401 Bypass											
220	Single Family Detached Housing	96	d.u.	501	501	18	55	48	28	62	36
North Side Total Net New External Trips				**501**	**501**	**18**	**55**	**48**	**28**	**62**	**36**
Development South of US 401 Bypass											
220	Single Family Detached Housing	525	d.u.	2,391	2,391	95	283	244	144	314	185
220	Multifamily Housing – Low-Rise	320	d.u.	1,189	1,189	33	111	79	46	105	61
820	Shopping Center	122,800	s.f.	3,457	3,457	132	81	304	329	304	329
Internal Capture (South Side Only)				*1,158*	*1,158*	*7*	*7*	*116*	*116*	*116*	*116*
Pass-by Reduction (South Side Only)				*961*	*961*	*0*	*0*	*93*	*83*	*93*	*83*
South Side Total Net New External Trips				4,918	4,918	253	468	418	320	514	376
Total Net New External Trips – Commercial Build-out				**5,419**	**5,419**	**271**	**523**	**466**	**348**	**576**	**412**

Internally captured trips are trips that begin and end on the project site and do not access the external roadway network. The Institute of Transportation Engineers (ITE) internal capture rates indicate that the internal capture between the proposed land uses in the southern portion of the development will be approximately 2% in the AM peak hour and 18% in the PM peak hour at commercial build-out. Residential uses north of US 401 Bypass were not included in internal capture calculations.

Pass-by trips are trips already on the roadway network that will make a trip to the site as they pass by on the adjacent street. The ITE *Trip Generation Handbook* indicates that approximately 34% of general retail traffic in the PM peak hour will be pass-by traffic, with no pass-by trip allowance in the AM peak hour. Pass-by trips were assigned based on existing traffic patterns.

Detailed trip generation calculations are included in the Appendix of this report.

4.0 Site Traffic Distribution

The projected site-generated trips were assigned to the surrounding roadway network. Per discussions with the Town of Rolesville, separate distribution and assignments were developed for the northern and southern portions of the development.

The following distribution was used for the residential portion of the development north of US 401 Bypass based on coordination with the Town of Rolesville:

- 35% to/from the west on Virginia Water Drive
- 25% to/from the west on US 401
- 10% to/from the east on US 401
- 20% to/from the north on Young Street
- 10% to/from the south on Young Street

For development on the south side of US 401 Bypass, separate entering and exiting distributions were used for both residential and retail site traffic:

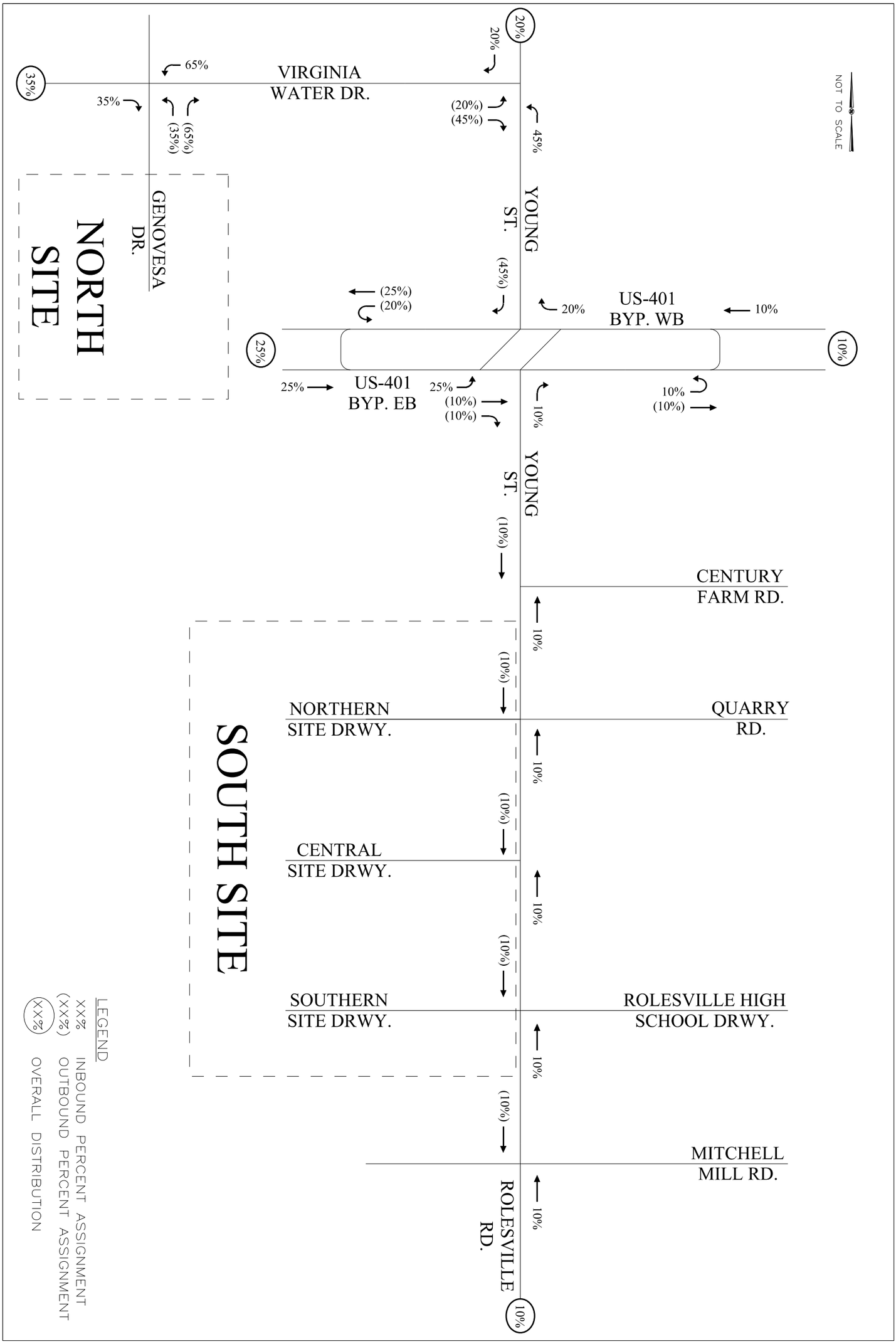
Entering Distributions

- 60% from the west on US 401
- 10% from the east on US 401
- 15% from the north on Young Street
- 15% from the south on Young Street

Exiting Distributions

- 30% to the west on US 401
- 30% to the west on Mitchell Mill Road
- 10% to the east on US 401
- 15% to the north on Young Street
- 15% to the south on Young Street

The site traffic distribution and percent assignment for the northern portion of the development are shown on **Figure 4A**, while the site traffic distribution and percent assignment for the southern portion of the development are shown on **Figure 4B.**



Kimley»Horn	YOUNG STREET PUD ROLESVILLE, NC TRAFFIC IMPACT ANALYSIS	SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT – SITE NORTH OF US-401 BYPASS	FIGURE 4A

NOT TO SCALE

VIRGINIA WATER DR.

GENOVESA DR.

NORTH SITE

YOUNG ST.

US-401 BYP. WB

US-401 BYP. EB

CENTURY FARM RD.

QUARRY RD.

ROLESVILLE HIGH SCHOOL DRWY.

MITCHELL MILL RD.

ROLESVILLE RD.

NORTHERN SITE DRWY.

CENTRAL SITE DRWY.

SOUTHERN SITE DRWY.

SOUTH SITE

LEGEND

XX% INBOUND PERCENT ASSIGNMENT

(XX%) OUTBOUND PERCENT ASSIGNMENT

(XX%) OVERALL DISTRIBUTION

FIGURE 4B

SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT – SITE SOUTH OF US-401 BYPASS

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

5.0 Projected Traffic Volumes

5.1 *Existing Traffic*

AM peak hour (6:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were performed at the following intersections:

- US 401 Bypass at Young Street — January 29, 2019
- US 401 Bypass at East Young Street U-Turn — January 29, 2019
- US 401 Bypass at West Young Street U-Turn — January 29, 2019
- Young Street at Virginia Water Drive — January 29, 2019
- Virginia Water Drive at Genovesa Drive — January 29, 2019
- Young Street at Century Farm Road — January 29, 2019
- Young Street at Quarry Road — January 29, 2019
- Young Street at Rolesville High School Driveway — January 29, 2019
- Rolesville Road at Mitchell Mill Road — January 29, 2019

School PM peak hour (1:00 to 4:00 PM) turning movement counts were also collected at the intersections of Young Street at Quarry Road and at Rolesville High School Driveway. Traffic volumes on US 401 Bypass were balanced between intersections as necessary. The existing AM, school PM, and PM peak hour traffic volumes are shown on **Figures 5, 6, and 7,** respectively, and the traffic count data are included in the Appendix.

5.2 *Historic Growth Traffic*

Historic growth traffic is the increase in traffic due to usage increases and non-specific growth throughout the area. For this analysis, a 2% annual growth rate was applied to the existing traffic volumes up to the year 2025 to account for background traffic growth.

5.3 *Approved Development Traffic*

Approved development traffic is generated by approved but not yet constructed projects in the vicinity of the proposed project. Based on discussions with the Town of Rolesville, three projects were identified for inclusion in the analysis as background traffic: the Kalas Falls development, the Rogers Farm Subdivision, and the Watkins Family Property. Approved development project descriptions and site trips for the Kalas Falls and Rogers Farm projects were obtained from the *Kalas Property TIA* (Stantec, January 2016), and the *Watkins Family Property Development TIA* (Stantec, October 2018) was referenced for that project.

Per the *Kalas Property TIA,* that project proposes the construction of 215 single-family homes on the west side of Rolesville Road between Mitchell Mill Road and Fowler Road. That project has a projected build-out year of 2021, and all site traffic associated with that project was included in this analysis. No off-site roadway improvements were recommended as part of that development.

No TIA was required to be performed for the proposed Rogers Farm subdivision. However, site traffic for that 98 single-family home project, which is adjacent to the Kalas Falls project, was generated and assigned as part of the *Kalas Property TIA.* All of the site trips associated with the Rogers Farm subdivision project were included in this analysis as background traffic.

Per the *Watkins Family Property Development TIA,* that project proposes the construction of 145 single-family homes on the west side of Rolesville Road between Mitchell Mill Road and Fowler Road adjacent to the Kalas Falls project. That project has a projected build-out year of 2025, and all site traffic associated with that project was included in this analysis. As that TIA did not analyze any intersections north of Quarry Road, site traffic from that project was assigned through the network consistent with the traffic assignment used for the Kalas Falls analysis. No off-site roadway improvements were recommended to be performed as part of that development.

The same methodology used to estimate volumes of Young Street PUD site traffic generated in the school PM peak hour was used to estimate site trips for approved developments in the school PM peak hour.

Background traffic volumes consisting of existing, historic growth, and approved development traffic are shown on **Figures 5, 6, and 7** for the AM, school PM, and PM peak hours, respectively.

5.4 *Site Traffic*

Project site traffic was generated and assigned to the adjacent roadway network according to the distribution discussed previously in Section 4.0. Site traffic volumes for the current PUD build-out scenario are shown on **Figures 8, 9, and 10** for the AM, school PM, and PM peak hours, respectively. For the residential build-out scenario, site traffic volumes for the AM, school PM, and PM peak hours are shown in **Figures 11, 12, and 13**, respectively. For the commercial build-out scenario, the site traffic volumes for the AM, school PM, and PM peak hours are shown in **Figures 14, 15, and 16**, respectively

5.5 *Build-Out Traffic*

To obtain the projected (2025) build-out traffic volumes, site traffic was added to the projected (2025) background traffic. Traffic volume calculations are detailed in intersection spreadsheets in the Appendix of this report. **Figures 8, 9, and 10** show the projected (2025) AM, school PM, and PM peak hour build-out traffic volumes, respectively for the current PUD scenario. **Figures 11, 12, and 13** show the projected (2025) AM, school PM, and PM peak hour build-out traffic volumes, respectively for the residential build-out. **Figures 14, 15, and 16** show the projected (2025) AM, school PM, and PM peak hour build-out traffic volumes, respectively for the commercial build-out scenario.

NOT TO SCALE

YOUNG ST.

US-401 BYPASS EB

CENTURY FARM RD.

QUARRY RD.

YOUNG ST.

ROLESVILLE HIGH SCHOOL DRWY.

MITCHELL MILL RD.

VIRGINIA WATER DR.

US-401 BYPASS WB

GENOVESA DR.

ROLESVILLE RD.

LEGEND

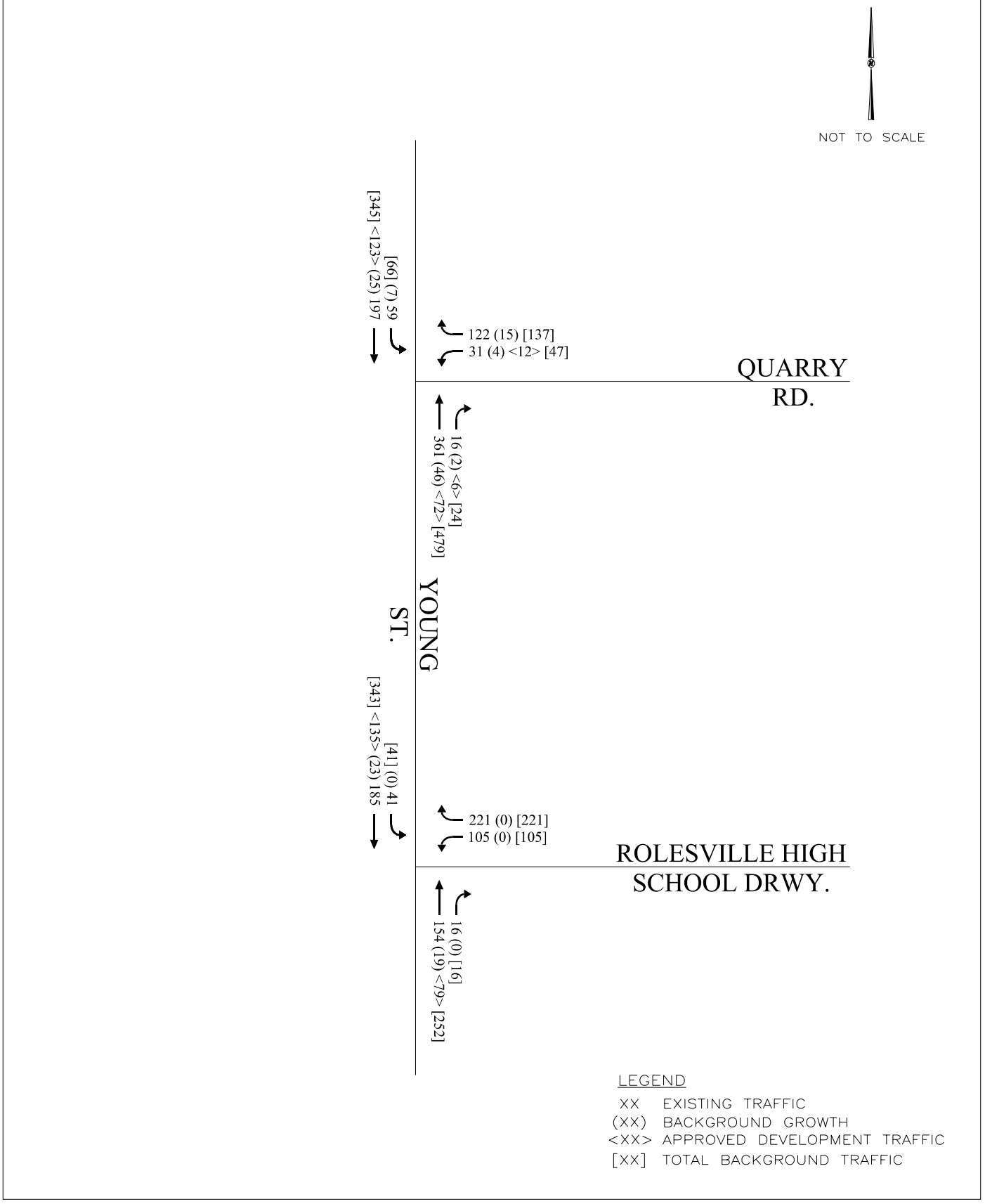
XX EXISTING TRAFFIC
(XX) BACKGROUND GROWTH
<XX> APPROVED DEVELOPMENT TRAFFIC
[XX] TOTAL BACKGROUND TRAFFIC

FIGURE 5

EXISTING AND PROJECTED (2025) BACKGROUND AM PEAK HOUR TRAFFIC VOLUMES

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn



Kimley»Horn

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

EXISTING AND PROJECTED (2025) PM SCHOOL PEAK HOUR TRAFFIC VOLUMES

FIGURE 6

NOT TO SCALE

YOUNG ST.

294 (37) <16> [347]
35 (4) [39]

209 (26) <16> [251]
436 (55) <43> [534]
82 (10) <57> [149]

452 (56) <57> [565]

US-401 BYPASS EB

[369] <59> (35) 275
[1061] <34> (115) 912

334 (42) <93> [469]

CENTURY FARM RD.

1 (0) [1]
2 (0) [2]

2 (0) [2]
336 (42) <93> [471]

QUARRY RD.

78 (10) [88]
25 (3) <15> [43]

YOUNG ST.

17 (2) <8> [27]
259 (33) <93> [385]

ROLESVILLE HIGH SCHOOL DRWY.

81 (0) [81]
20 (0) [20]

13 (0) [13]
247 (31) <101> [379]

MITCHELL MILL RD.

2 (0) <15> [17]
39 (5) [44]
13 (2) [15]

41 (5) [46]
167 (21) <71> [259]
7 (1) [8]

[386] <29> (40) 317
[25] (3) 22

[416] <29> (43) 344

[8] (1) 7
[677] <158> (58) 461

[135] (15) 120
[551] <158> (44) 349

[80] (0) 80
[455] <173> (32) 250

[15] <9> (1) 5
[256] <43> (24) 189
[36] <16> (2) 18

[53] <29> (3) 21
[116] (13) 103
[8] (1) 7

ROLESVILLE RD.

[17] (2) 15
[30] (3) 27

VIRGINIA WATER DR.

486 (61) <43> [590]
294 (37) <29> [360]

[134] (15) 119
[961] (108) 853
[535] <101> (49) 385

US-401 BYPASS WB

[1270] <72> (135) 1063

3 (0) [3]
30 (4) [34]
4 (1) [5]

6 (1) [7]
0 (0) [0]
3 (0) [3]

GENOVESA DR.

[0] (0) 0
[0] (0) 0
[1] (0) 1

[1] (0) 1
[42] (5) 37
[2] (0) 2

LEGEND

XX EXISTING TRAFFIC
(XX) BACKGROUND GROWTH
<XX> APPROVED DEVELOPMENT TRAFFIC
[XX] TOTAL BACKGROUND TRAFFIC

FIGURE 7

EXISTING AND PROJECTED (2025) BACKGROUND PM PEAK HOUR TRAFFIC VOLUMES

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

NOT TO SCALE

YOUNG ST.

[510] <37> (0) 473
[7] <0> (4) 3

385 (0) <65> [450]
27 (10) <0> [37]

320 (4) <65> [389]
1321 (0) <131> [1452]
181 (0) <24> [205]

1316 (2) <24> [1342]

[40] <0> (15) 25
[99] <0> (34) 65

[590] <37> (34) 519

1491 (19) <131> [1641]
349 (15) <37> [401]

US-401 BYPASS EB

[704] <196> (2) 506
[515] <44> (8) 463

695 (2) <240> [937]

[60] <0> (6) 54
[282] <0> (8) 274
[857] <183> (8) 666

[0] <0> (0) 0
[1054] <207> (8) 839

6 (0) <0> [6]
1 (0) <0> [1]

CENTURY FARM RD.

1 (0) <0> [1]
685 (2) <240> [927]

157 (0) <0> [157]
0 (0) <0> [0]
34 (0) <0> [34]

[213] <0> (0) 213
[699] <61> (8) 630
[147] <147> (0) 0

QUARRY RD.

YOUNG ST.

69 (0) <0> [69]
530 (2) <87> [619]
0 (0) <10> [10]

[153] <153> (0) 0
[0] <0> (0) 0
[87] <87> (0) 0

[770] <97> (8) 665
[51] <51> (0) 0

600 (2) <23> [625]
0 (0) <24> [24]

195 (0) <0> [195]
0 (0) <0> [0]
91 (0) <0> [91]

[74] <74> (0) 0
[100] <100> (0) 0

[299] <0> (0) 299
[507] <187> (8) 312
[10] <10> (0) 0

ROLESVILLE HIGH SCHOOL DRWY.

213 (0) <0> [213]
418 (2) <34> [454]
0 (0) <2> [2]

[13] <13> (0) 0
[0] <0> (0) 0
[9] <9> (0) 0

16 (0) <0> [16]
184 (0) <0> [184]
52 (0) <0> [52]

[16] <0> (0) 16
[367] <65> (8) 294
[228] <131> (0) 97

MITCHELL MILL RD.

8 (0) <0> [8]
274 (2) <37> [313]
9 (0) <0> [9]

[124] <0> (0) 124
[17] <0> (0) 17
[2] <0> (0) 2

ROLESVILLE RD.

VIRGINIA WATER DR.

0 (0) <0> [0]
28 (0) <0> [28]
3 (14) <0> [17]

[1] <0> (0) 1
[0] <0> (0) 0
[5] <0> (0) 5

[2] <0> (0) 2
[41] <0> (0) 41
[8] <0> (8) 0

GENOVESA DR.

5 (49) <0> [54]
0 (0) <0> [0]
2 (26) <0> [28]

US-401 BYPASS WB

[797] <146> (6) 645

NORTHERN SITE DRWY.

CENTRAL SITE DRWY.

SOUTHERN SITE DRWY.

NORTH SITE

SOUTH SITE

LEGEND

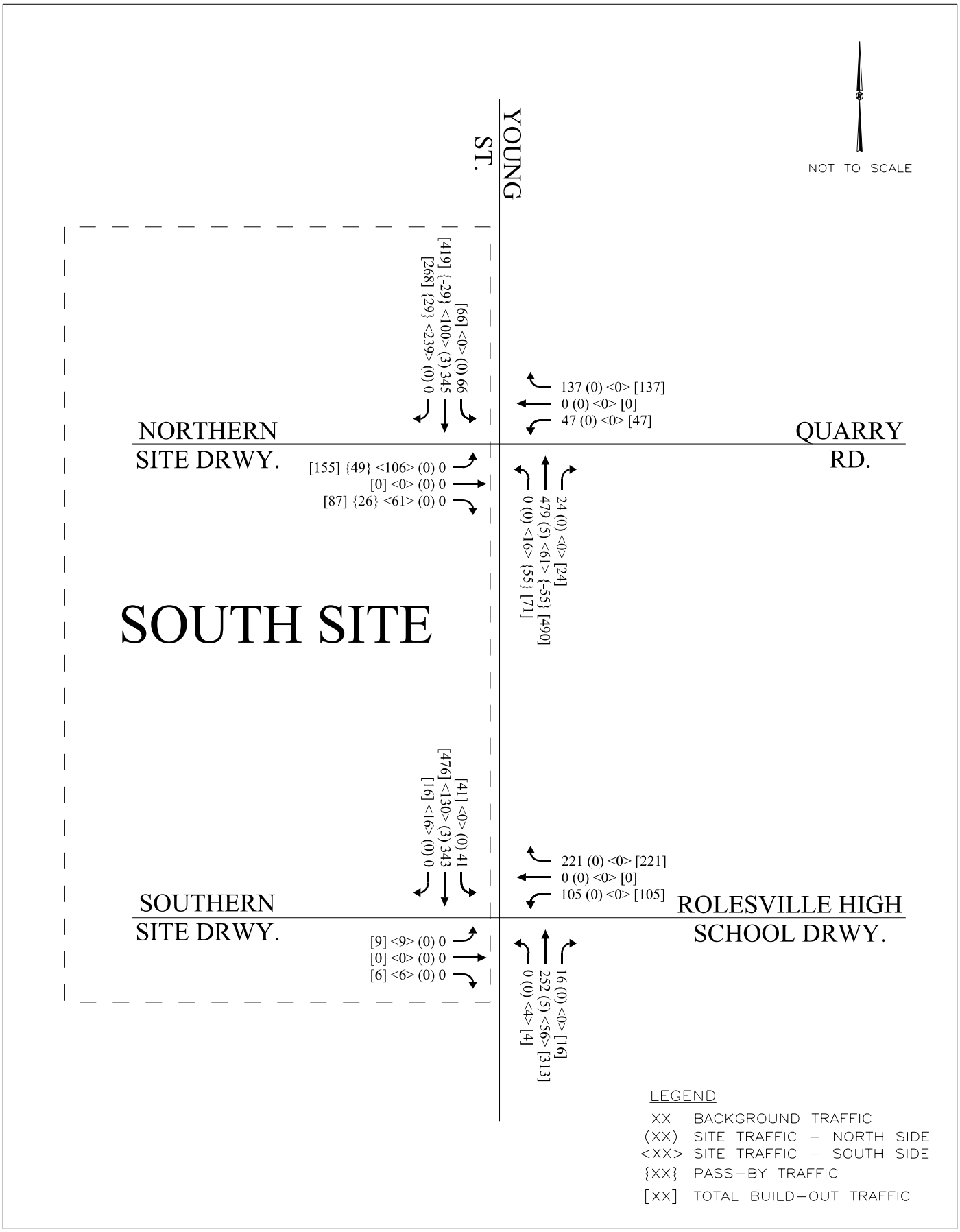
XX BACKGROUND TRAFFIC
(XX) SITE TRAFFIC – NORTH SIDE
<XX> SITE TRAFFIC – SOUTH SIDE
[XX] TOTAL BUILD–OUT TRAFFIC

PROJECTED (2025) BUILD–OUT AM PEAK HOUR TRAFFIC VOLUMES – CURRENT PUD

FIGURE 8

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn



Kimley»Horn	YOUNG STREET PUD ROLESVILLE, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2025) BUILD PM SCHOOL PEAK HOUR TRAFFIC VOLUMES – CURRENT PUD	FIGURE 9

NOT TO SCALE

YOUNG ST.

US-401 BYPASS EB

CENTURY FARM RD.

QUARRY RD.

YOUNG ST.

ROLESVILLE HIGH SCHOOL DRWY.

MITCHELL MILL RD.

VIRGINIA WATER DR.

US-401 BYPASS WB

GENOVESA DR.

ROLESVILLE RD.

NORTHERN SITE DRWY.

CENTRAL SITE DRWY.

SOUTHERN SITE DRWY.

NORTH SITE

SOUTH SITE

LEGEND

XX BACKGROUND TRAFFIC
(XX) SITE TRAFFIC – NORTH SIDE
<XX> SITE TRAFFIC – SOUTH SIDE
{XX} PASS-BY TRAFFIC
[XX] TOTAL BUILD-OUT TRAFFIC

PROJECTED (2025) BUILD-OUT PM PEAK HOUR TRAFFIC VOLUMES – CURRENT PUD

FIGURE 10

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

NOT TO SCALE

YOUNG ST.

385 (0) <59> [444]
27 (8) <0> [35]

320 (4) <59> [383]
1321 (0) <118> [1439]
181 (0) <13> [194]

1316 (2) <13> [1331]

US-401 BYPASS EB

[685] <177> (2) 506
[508] <39> (6) 463

695 (2) <217> [914]

CENTURY FARM RD.

6 (0) <0> [6]
1 (0) <0> [1]

1 (0) <0> [1]
685 (2) <217> [904]

QUARRY RD.

157 (0) <0> [157]
0 (0) <0> [0]
34 (0) <0> [34]

YOUNG ST.

69 (0) <0> [69]
530 (2) <79> [611]
0 (0) <5> [5]

ROLESVILLE HIGH SCHOOL DRWY.

600 (2) <17> [619]
0 (0) <13> [13]

195 (0) <0> [195]
0 (0) <0> [0]
91 (0) <0> [91]

213 (0) <0> [213]
418 (2) <18> [438]
0 (0) <1> [1]

MITCHELL MILL RD.

16 (0) <0> [16]
184 (0) <0> [184]
52 (0) <0> [52]

8 (0) <0> [8]
274 (2) <19> [295]
9 (0) <0> [9]

[492] <19> (0) 473
[7] <0> (4) 3

[36] <0> (11) 25
[90] <0> (25) 65

[563] <19> (25) 519

1491 (14) <118> [1623]
349 (11) <19> [379]

[59] <0> (5) 54
[280] <0> (6) 274
[768] <96> (6) 666

[727] <77> (5) 645

[0] <0> (0) 0
[954] <109> (6) 839

[213] <0> (0) 213
[668] <32> (6) 630
[77] <77> (0) 0

[139] <139> (0) 0
[0] <0> (0) 0
[79] <79> (0) 0

[755] <84> (6) 665
[27] <27> (0) 0

[67] <67> (0) 0
[91] <91> (0) 0

[299] <0> (0) 299
[487] <169> (6) 312
[5] <5> (0) 0

[12] <12> (0) 0
[0] <0> (0) 0
[8] <8> (0) 0

[16] <0> (0) 16
[359] <59> (6) 294
[215] <118> (0) 97

[124] <0> (0) 124
[17] <0> (0) 17
[2] <0> (0) 2

ROLESVILLE RD.

VIRGINIA WATER DR.

US-401 BYPASS WB

GENOVESA DR.

0 (0) <0> [0]
28 (0) <0> [28]
3 (12) <0> [15]

5 (36) <0> [41]
0 (0) <0> [0]
2 (19) <0> [21]

[1] <0> (0) 1
[0] <0> (0) 0
[5] <0> (0) 5

[2] <0> (0) 2
[41] <0> (0) 41
[6] <0> (6) 0

NORTH SITE

NORTHERN SITE DRWY.

CENTRAL SITE DRWY.

SOUTHERN SITE DRWY.

SOUTH SITE

LEGEND

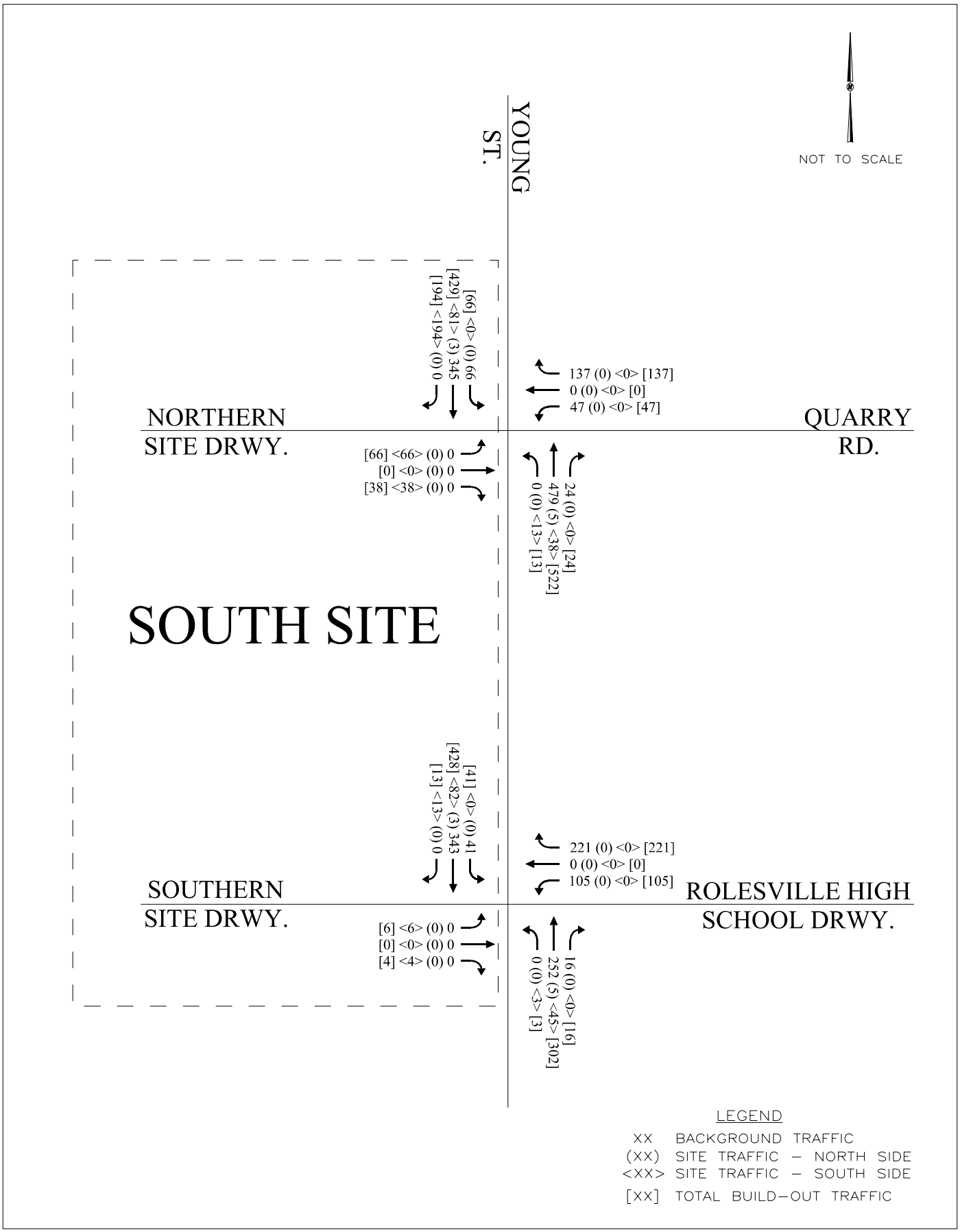
XX BACKGROUND TRAFFIC
(XX) SITE TRAFFIC – NORTH SIDE
<XX> SITE TRAFFIC – SOUTH SIDE
[XX] TOTAL BUILD–OUT TRAFFIC

PROJECTED (2025)
BUILD–OUT AM PEAK HOUR
TRAFFIC VOLUMES –
RESIDENTIAL BUILD–OUT

FIGURE 11

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn



Kimley»Horn	YOUNG STREET PUD ROLESVILLE, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2025) BUILD PM SCHOOL PEAK HOUR TRAFFIC VOLUMES – RESIDENTIAL BUILD–OUT	FIGURE 12

NOT TO SCALE

YOUNG ST.

347 (0) <37> [384]
39 (28) <0> [67]

251 (12) <37> [300]
534 (0) <74> [608]
149 (0) <42> [191]

565 (6) <42> [613]

US-401 BYPASS EB

[486] <111> (6) 369
[1090] <25> (4) 1061

469 (6) <135> [610]

CENTURY FARM RD.

1 (0) <0> [1]
2 (0) <0> [2]

2 (0) <0> [2]
471 (6) <135> [612]

QUARRY RD.

88 (0) <0> [88]
0 (0) <0> [0]
43 (0) <0> [43]

YOUNG ST.

27 (0) <0> [27]
385 (6) <49> [440]
0 (0) <17> [17]

412 (6) <24> [442]
0 (0) <42> [42]

ROLESVILLE HIGH SCHOOL DRWY.

81 (0) <0> [81]
0 (0) <0> [0]
20 (0) <0> [20]

13 (0) <0> [13]
379 (6) <59> [444]
0 (0) <4> [4]

MITCHELL MILL RD.

17 (0) <0> [17]
44 (0) <0> [44]
15 (0) <0> [15]

46 (0) <0> [46]
259 (6) <63> [328]
8 (0) <0> [8]

[449] <63> (0) 386
[37] <0> (12) 25

[495] <63> (16) 416

[24] <0> (7) 17
[46] <0> (16) 30

[8] <0> (0) 8
[1037] <356> (4) 677

[135] <0> (0) 135
[660] <105> (4) 551
[250] <250> (0) 0

[664] <66> (4) 594
[88] <88> (0) 0

[80] <0> (0) 80
[565] <106> (4) 455
[17] <17> (0) 0

[15] <0> (0) 15
[297] <37> (4) 256
[110] <74> (0) 36

[53] <0> (0) 53
[116] <0> (0) 116
[8] <0> (0) 8

VIRGINIA WATER DR.

590 (9) <74> [673]
360 (7) <63> [430]

[150] <0> (16) 134
[965] <0> (4) 961
[853] <314> (4) 535

[1537] <251> (16) 1270

US-401 BYPASS WB

NORTHERN SITE DRWY.

[85] <85> (0) 0
[0] <0> (0) 0
[49] <49> (0) 0

CENTRAL SITE DRWY.

[42] <42> (0) 0
[57] <57> (0) 0

SOUTHERN SITE DRWY.

[7] <7> (0) 0
[0] <0> (0) 0
[5] <5> (0) 0

ROLESVILLE RD.

SOUTH SITE

GENOVESA DR.

3 (0) <0> [3]
34 (0) <0> [34]
5 (40) <0> [45]

7 (23) <0> [30]
0 (0) <0> [0]
3 (13) <0> [16]

[0] <0> (0) 0
[0] <0> (0) 0
[1] <0> (0) 1

[1] <0> (0) 1
[42] <0> (0) 42
[24] <0> (22) 2

NORTH SITE

LEGEND

XX BACKGROUND TRAFFIC
(XX) SITE TRAFFIC – NORTH SIDE
<XX> SITE TRAFFIC – SOUTH SIDE
[XX] TOTAL BUILD–OUT TRAFFIC

FIGURE 13

PROJECTED (2025) BUILD–OUT PM PEAK HOUR TRAFFIC VOLUMES – RESIDENTIAL BUILD–OUT

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

NOT TO SCALE

YOUNG ST.

[511] <38> (0) 473
[7] <0> (4) 3

385 (0) <70> [455]
27 (8) <0> [35]

320 (4) <70> [394]
1321 (0) <140> [1461]
181 (0) <25> [206]

1316 (2) <25> [1343]

[36] <0> (11) 25
[90] <0> (25) 65

[582] <38> (25) 519

1491 (14) <140> [1645]
349 (11) <38> [398]

US-401 BYPASS EB

[719] <211> (2) 506
[516] <47> (6) 463

695 (2) <257> [954]

[59] <0> (5) 54
[280] <0> (6) 274
[862] <190> (6) 666

[0] <0> (0) 0
[1060] <215> (6) 839

CENTURY FARM RD.

6 (0) <0> [6]
1 (0) <0> [1]

1 (0) <0> [1]
685 (2) <257> [944]

QUARRY RD.

157 (0) <0> [157]
0 (0) <0> [0]
34 (0) <0> [34]

[213] <0> (0) 213
[699] <63> (6) 630
[152] <152> (0) 0

YOUNG ST.

69 (0) <0> [69]
530 (2) <94> [626]
0 (0) <10> [10]

[775] <104> (6) 665
[53] <53> (0) 0

[163] <163> (0) 0
[0] <0> (0) 0
[94] <94> (0) 0

ROLESVILLE HIGH SCHOOL DRWY.

600 (2) <24> [626]
0 (0) <25> [25]

195 (0) <0> [195]
0 (0) <0> [0]
91 (0) <0> [91]

[299] <0> (0) 299
[519] <201> (6) 312
[10] <10> (0) 0

[80] <80> (0) 0
[108] <108> (0) 0

213 (0) <0> [213]
418 (2) <35> [455]
0 (0) <3> [3]

16 (0) <0> [16]
184 (0) <0> [184]
52 (0) <0> [52]

[16] <0> (0) 16
[370] <70> (6) 294
[237] <140> (0) 97

[14] <14> (0) 0
[0] <0> (0) 0
[9] <9> (0) 0

MITCHELL MILL RD.

8 (0) <0> [8]
274 (2) <38> [314]
9 (0) <0> [9]

[124] <0> (0) 124
[17] <0> (0) 17
[2] <0> (0) 2

ROLESVILLE RD.

VIRGINIA WATER DR.

[1] <0> (0) 1
[0] <0> (0) 0
[5] <0> (0) 5

[2] <0> (0) 2
[41] <0> (0) 41
[6] <0> (6) 0

GENOVESA DR.

0 (0) <0> [0]
28 (0) <0> [28]
3 (12) <0> [15]

5 (36) <0> [41]
0 (0) <0> [0]
2 (19) <0> [21]

US-401 BYPASS WB

1491 (14)
349 (11) <38>

[802] <152> (5) 645

NORTH SITE

NORTHERN SITE DRWY.

CENTRAL SITE DRWY.

SOUTHERN SITE DRWY.

SOUTH SITE

LEGEND

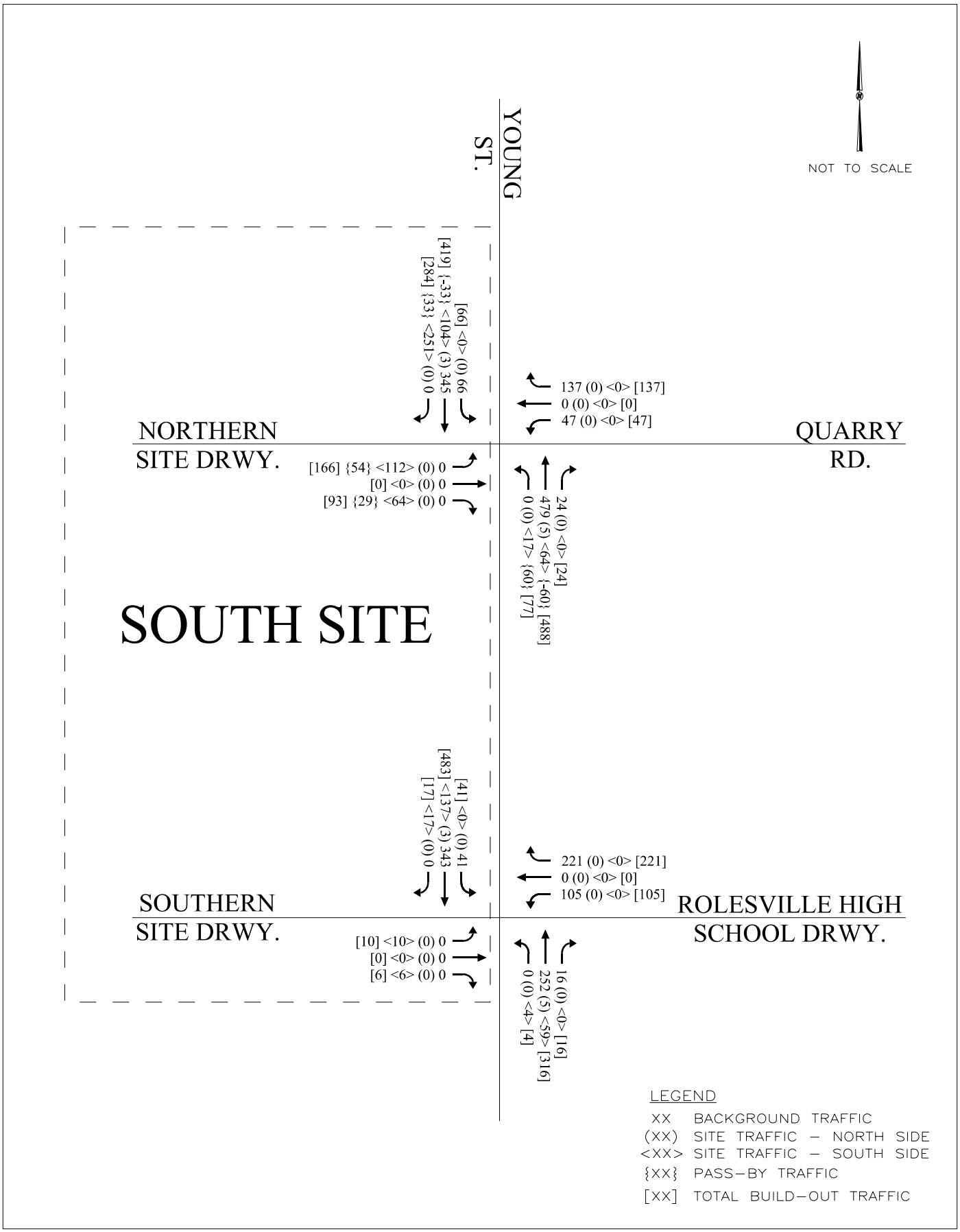
XX BACKGROUND TRAFFIC
(XX) SITE TRAFFIC – NORTH SIDE
<XX> SITE TRAFFIC – SOUTH SIDE
[XX] TOTAL BUILD–OUT TRAFFIC

PROJECTED (2025)
BUILD–OUT AM PEAK HOUR
TRAFFIC VOLUMES –
COMMERCIAL BUILD–OUT

FIGURE 14

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn



Kimley»Horn

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

PROJECTED (2025) BUILD
PM SCHOOL PEAK HOUR
TRAFFIC VOLUMES –
COMMERCIAL BUILD-OUT

FIGURE
15

NOT TO SCALE

YOUNG ST.

347 (0) <56> [403]
39 (28) <0> [67]

251 (12) <56> [319]
534 (0) <113> [647]
149 (0) <51> [200]

565 (6) <51> [622]

US-401 BYPASS EB

[544] <169> (6) 369
[1103] <38> (4) 1061

469 (6) <207> [682]

CENTURY FARM RD.

1 (0) <0> [1]
2 (0) <0> [2]

2 (0) <0> [2]
471 (6) <207> [684]

QUARRY RD.

88 (0) <0> [88]
0 (0) <0> [0]
43 (0) <0> [43]

YOUNG ST.

27 (0) <0> [27]
385 (6) <75> {-37} [429]
0 (0) <21> {37} [58]

412 (6) <32> [450]
0 (0) <51> [51]

ROLESVILLE HIGH SCHOOL DRWY.

81 (0) <0> [81]
0 (0) <0> [0]
20 (0) <0> [20]

13 (0) <0> [13]
379 (6) <72> [457]
0 (0) <5> [5]

MITCHELL MILL RD.

17 (0) <0> [17]
44 (0) <0> [44]
15 (0) <0> [15]

46 (0) <0> [46]
259 (6) <77> [342]
8 (0) <0> [8]

[463] <77> (0) 386
[37] <0> (12) 25

[509] <77> (16) 416

[24] <0> (7) 17
[46] <0> (16) 30

[8] <0> (0) 8
[1118] <437> (4) 677

[135] <0> (0) 135
[628]{-56} <129> (4) 551
[364] {56} <308> (0) 0

[694] <96> (4) 594
[108] <108> (0) 0

[80] <0> (0) 80
[621] <162> (4) 455
[21] <21> (0) 0

[15] <0> (0) 15
[316] <56> (4) 256
[149] <113> (0) 36

[53] <0> (0) 53
[116] <0> (0) 116
[8] <0> (0) 8

VIRGINIA WATER DR.

590 (9) <113> [712]
360 (7) <77> [444]

[150] <0> (16) 134
[965] <0> (4) 961
[925] <386> (4) 535

[1594] <308> (16) 1270

US-401 BYPASS WB

GENOVESA DR.

3 (0) <0> [3]
34 (0) <0> [34]
5 (40) <0> [45]

7 (23) <0> [30]
0 (0) <0> [0]
3 (13) <0> [16]

[0] <0> (0) 0
[0] <0> (0) 0
[1] <0> (0) 1

[1] <0> (0) 1
[42] <0> (0) 42
[24] <0> (22) 2

NORTH SITE

NORTHERN SITE DRWY.

[165] {33} <132> (0) 0
[0] <0> (0) 0
[125] {50} <75> (0) 0

CENTRAL SITE DRWY.

[64] <64> (0) 0
[86] <86> (0) 0

SOUTHERN SITE DRWY.

[11] <11> (0) 0
[0] <0> (0) 0
[8] <8> (0) 0

ROLESVILLE RD.

SOUTH SITE

LEGEND

XX BACKGROUND TRAFFIC
(XX) SITE TRAFFIC – NORTH SIDE
<XX> SITE TRAFFIC – SOUTH SIDE
{XX} PASS–BY TRAFFIC
[XX] TOTAL BUILD–OUT TRAFFIC

PROJECTED (2025)
BUILD–OUT PM PEAK HOUR
TRAFFIC VOLUMES –
COMMERCIAL BUILD–OUT

FIGURE 16

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

Kimley»Horn

6.0 Capacity Analysis

Capacity analyses (see Appendix) were performed for the AM and PM peak hours for the existing traffic condition and the projected (2025) background and build-out traffic conditions using Synchro Version 10 software to determine the operating characteristics of the adjacent road network and the impacts of the proposed project.

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a set time duration. Capacity is combined with Level-of-Service (LOS) to describe the operating characteristics of a road segment or intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual (HCM)* defines six levels of service, LOS A through LOS F, with A representing the shortest average delays and F representing the longest average delays. LOS D is the typically accepted standard for signalized intersections in urbanized areas. For signalized intersections, LOS is defined for the overall intersection operation.

For unsignalized intersections, only the movements that must yield right-of-way experience control delay. Therefore, LOS criteria for the overall intersection is not reported by Synchro Version 10 or computable using methodology published in the *HCM.* It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. **Table 6.0-A** lists the LOS control delay thresholds published in the *HCM* for signalized and unsignalized intersections.

Table 6.0-A
Level-of-Service Control Delay Thresholds

Level-of-Service	Signalized Intersections – Control Delay Per Vehicle [sec/veh]	Unsignalized Intersections – Average Control Delay [sec/veh]
A	≤ 10	≤ 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

Existing peak hour factors (PHF) were used at all existing intersections in the existing traffic condition. A minimum PHF of 0.90 was used at all study intersections in the background and build-out traffic conditions except at the intersections of Young Street at Quarry Road and Young Street the School Driveway where existing PHF were used to reflect the impact of school traffic. Existing signal timings obtained during a field visit were not adjusted as part of this analysis. Right-turns on red were allowed where currently allowed but were prohibited on the new site driveway connection to Young Street at Quarry Road and at the intersection of Rolesville Road at Mitchell Mill Road in the signalized condition. Protected-only left-turn phasing was used for the

new eastbound left-turn movement on the North Site Driveway since it is a new connection. Permitted/protected left turn phasing was used for all other existing movements. Throughout the study area, a minimum volume of 4 vehicles was used on each intersection movement to present a conservative analysis, though actual projected volumes are shown in the figures.

Capacity analyses were performed for the existing (2019) traffic condition and the projected (2025) background and build-out traffic conditions for the following intersections:

- US 401 Bypass at Young Street
- US 401 Bypass at East Young Street U-Turn
- US 401 Bypass at West Young Street U-Turn
- Young Street at Virginia Water Drive
- Virginia Water Drive at Genovesa Drive
- Young Street at Century Farm Road
- Young Street at Quarry Road/Northern Site Driveway
- Young Street at Rolesville High School Driveway/Southern Site Driveway
- Rolesville Road at Mitchell Mill Road
- Young Street at Central Site Driveway

Table 6.0-B summarizes the LOS and delay (seconds per vehicle) for all of the study intersections for the existing (2019) traffic condition and the projected (2025) background and build-out traffic conditions. All capacity analyses are included in the Appendix and are briefly summarized in the following sub-sections.

Table 6.0-B
Level-of-Service Summary

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
US 401 Bypass Westbound at Young Street (Signalized)		
Existing (2019) Traffic	B (10.7)	A (3.0)
Background (2025) Traffic	B (12.9)	A (3.2)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	B (15.4)	A (6.5)
Residential Build-out (2025) Traffic with Signal Timing Improvements	B (14.4)	A (6.3)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	B (15.2)	A (6.6)

Table 6.0-B (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
US 401 Bypass Eastbound at Young Street (Signalized)		
Existing (2019) Traffic	A (2.5)	A (4.2)
Background (2025) Traffic	A (2.8)	A (6.6)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (7.6)	B (13.0)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (7.1)	B (11.2)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (7.9)	B (13.3)
US 401 Bypass at U-Turn East of Young Street (Signalized)		
Existing (2019) Traffic	A (4.8)	A (3.6)
Background (2025) Traffic	A (4.7)	A (3.8)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (3.7)	A (1.6)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (4.2)	A (1.8)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (3.8)	A (1.6)
US 401 Bypass at U-Turn West of Young Street (Signalized)		
Existing (2019) Traffic	A (4.2)	A (5.0)
Background (2025) Traffic	A (4.3)	A (4.9)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (1.7)	A (3.3)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (1.5)	A (3.1)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (1.8)	A (3.3)

Table 6.0-B (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Young Street at Virginia Water Drive (Unsignalized)		
Existing (2019) Traffic	EB – C (15.0) NBL – A (8.5)	EB – B (12.8) NBL – A (8.1)
Background (2025) Traffic	EB – C (16.4) NBL – A (8.6)	EB – B (14.4) NBL – A (8.4)
Current PUD Build-out (2025) Traffic	EB – C (22.1) NBL – A (8.8)	EB – C (18.4) NBL – A (8.8)
Residential Build-out (2025) Traffic	EB – C (20.2) NBL – A (8.7)	EB – C (17.6) NBL – A (8.7)
Commercial Build-out (2025) Traffic	EB – C (21.1) NBL – A (8.8)	EB – C (18.3) NBL – A (8.8)
Virginia Water Drive at Genovesa Drive (Unsignalized)		
Existing (2019) Traffic	NB – A (9.2) SB – A (9.2) EBL – A (7.3) WBL – A (7.3)	NB – A (9.3) SB – A (9.1) EBL – A (7.3) WBL – A (7.3)
Background (2025) Traffic	NB – A (9.1) SB – A (9.1) EBL – A (7.3) WBL – A (7.3)	NB – A (9.3) SB – A (9.2) EBL – A (7.4) WBL – A (7.3)
Current PUD Build-out (2025) Traffic	NB – A (9.3) SB – A (9.4) EBL – A (7.3) WBL – A (7.4)	NB – A (9.9) SB – B (10.0) EBL – A (7.4) WBL – A (7.5)
Residential Build-out (2025) Traffic	NB – A (9.2) SB – A (9.3) EBL – A (7.3) WBL – A (7.4)	NB – A (9.7) SB – A (9.8) EBL – A (7.4) WBL – A (7.5)
Commercial Build-out (2025) Traffic	NB – A (9.2) SB – A (9.3) EBL – A (7.3) WBL – A (7.4)	NB – A (9.7) SB – A (9.8) EBL – A (7.4) WBL – A (7.5)
Young Street at Century Farm Road (Unsignalized)		
Existing (2019) Traffic	WB – D (26.5) SBL – A (9.0)	WB – B (13.8) SBL – A (8.1)
Background (2025) Traffic	WB – D (26.1) SBL – A (9.3)	WB – C (18.9) SBL – A (8.5)
Current PUD Build-out (2025) Traffic	WB – E (47.3) SBL – B (10.5)	WB – E (39.2) SBL – A (9.3)
Residential Build-out (2025) Traffic	WB – E (40.3) SBL – B (10.4)	WB – D (33.3) SBL – A (9.1)
Commercial Build-out (2025) Traffic	WB – E (48.4) SBL – B (10.6)	WB – E (40.9) SBL – A (9.4)

Table 6.0-B (cont.) Level-of-Service Summary			
Condition	**AM Peak Hour LOS (Delay)**	**School PM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Young Street at Quarry Road/Northern Site Driveway			
Existing (2019) Traffic	WB – D (30.3) SBL – A (9.7)	WB – C (18.5) SBL – A (9.0)	WB – B (12.9) SBL – A (8.2)
Background (2025) Traffic	WB – F (131.7) SBL – B (12.0)	WB – E (38.0) SBL – A (9.9)	WB – C (21.4) SBL – A (8.8)
Current PUD Build-out (2025) Traffic with Improvements – *Signalized*	D (35.2)	C (25.6)	B (17.6)
Residential Build-out (2025) Traffic with Improvements – *Signalized*	D (40.5)	C (23.9)	B (17.4)
Commercial Build-out (2025) Traffic with Improvements – *Signalized*	D (39.7)	C (23.4)	B (17.8)
Young Street at Rolesville High School Driveway/Southern Site Driveway (Unsignalized)			
Existing (2019) Traffic	WB – F (155.8) SBL – A (9.7)	WB – C (19.6) SBL – A (8.2)	WB – B (11.2) SBL – A (8.0)
Background (2025) Traffic	WB – F (446.0) NBL – B (11.8)	WB – F (64.9) SBL – A (8.7)	WB – B (13.5) SBL – A (8.4)
Current PUD Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.2) SBL – B (12.4)	EB – F (425.5) WB – F (323.8) NBL – A (9.8) SBL – A (9.2)	EB – E (35.8) WB – C (19.1) NBL – A (8.9) SBL – A (8.6)
Residential Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.1) SBL – B (12.1)	EB – F (226.9) WB – F (247.1) NBL – A (9.4) SBL – A (9.1)	EB – D (30.7) WB – C (18.0) NBL – A (8.8) SBL – A (8.6)
Commercial Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.3) SBL – B (12.4)	EB – F (550.7) WB – F (343.1) NBL – A (9.9) SBL – A (9.2)	EB – E (36.1) WB – C (19.4) NBL – A (9.0) SBL – A (8.6)

Table 6.0-B (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Rolesville Road at Mitchell Mill Road		
Existing (2019) Traffic – *All-Way Stop*	C (16.2)	B (10.6)
Background (2025) Traffic – *All-Way Stop*	C (22.0)	B (13.1)
Current PUD Build-out (2025) Traffic – *Signalized*	B (18.9)	B (11.7)
Residential Build-out (2025) Traffic – *Signalized*	B (18.2)	B (11.4)
Commercial Build-out (2025) Traffic – *Signalized*	B (19.2)	B (13.2)
Young Street at Central Site Driveway (Unsignalized)		
Current PUD Build-out (2025) Traffic with Improvements	EB – F (52.3) NBL – B (10.0)	EB – D (29.9) NBL – B (10.0)
Residential Build-out (2025) Traffic with Improvements	EB – E (41.4) NBL – A (9.7)	EB – C (24.0) NBL – A (9.8)
Commercial Build-out (2025) Traffic with Improvements	EB – F (58.2) NBL – B (10.0)	EB – D (31.4) NBL – B (10.1)

6.1 *US 401 Bypass Westbound at Young Street*

Analyses indicate that the signalized intersection of US 401 Westbound at Young Street currently operates at LOS B in the AM peak hour and LOS A in the PM peak hour. The intersection is expected to continue to operate at those same LOS in the background traffic condition.

The following improvement was identified to be performed as part of this development to accommodate anticipated site traffic from the residential phase of the project:

- Coordinate the traffic signals at the intersections of US 401 at Young Street and the Superstreet U-turns

With traffic signal coordination in place, the intersection is expected to operate at LOS B in the AM peak hour and LOS A in the PM peak hour in the build-out traffic conditions.

The same LOS would be expected in the projected Current PUD build-out traffic condition with the same traffic signal coordination in place.

Table 6.1 summarizes the operation of the intersection of US 401 Bypass Westbound at Young Street for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.1
Level-of-Service
US 401 Bypass Westbound at Young Street (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2019) Traffic	B (10.7)	A (3.0)
Background (2025) Traffic	B (12.9)	A (3.2)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	B (15.4)	A (6.5)
Residential Build-out (2025) Traffic with Signal Timing Improvements	B (14.4)	A (6.3)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	B (15.2)	A (6.6)

6.2 *US 401 Bypass Eastbound at Young Street*

Analyses indicate that the signalized intersection of US 401 Eastbound at Young Street currently operates at LOS A in both the AM and PM peak hours and is expected to continue to operate at LOS A in the background traffic condition.

The following improvement was identified to be performed as part of this development to accommodate anticipated site traffic from the residential phase of the project:

- Coordinate the traffic signals at the intersections of US 401 at Young Street and the Superstreet U-turns

With the recommended signal coordination in place, the intersection is expected to operate at LOS A in the AM peak hour and LOS B in the PM peak hour at build-out of the residential phase of the development.

The following additional improvement is recommended to be performed to accommodate projected commercial build-out site traffic volumes:

- Extend the storage of the existing eastbound right-turn lane on US 401 Bypass by approximately 175 feet to provide 400 feet of storage and appropriate tapers

Analyses indicate that the intersection is expected to operate at LOS A in the AM peak hour and LOS B in the PM peak hour in the commercial build-out traffic condition.

The same LOS would be expected in the projected Current PUD build-out traffic condition with the same traffic signal coordination in place.

Table 6.2 summarizes the operation of the intersection of US 401 Bypass Eastbound at Young Street for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.2
Level-of-Service
US 401 Bypass Eastbound at Young Street (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2019) Traffic	A (2.5)	A (4.2)
Background (2025) Traffic	A (2.8)	A (6.6)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (7.6)	B (13.0)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (7.1)	B (11.2)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (7.9)	B (13.3)

6.3 *US 401 Bypass at U-Turn East of Young Street*

Analyses indicate that the signalized intersection of the US 401 superstreet U-turn east of Young Street currently operates at LOS A in both the AM and PM peak hours and is expected to continue to operate at LOS A in the background traffic condition.

The following roadway improvement was identified to be performed as part of this development to accommodate anticipated site traffic from the residential phase of the project:

- Coordinate the traffic signals at the intersections of US 401 at Young Street and the Superstreet U-turns

With traffic signal coordination in place, the intersection is expected to continue to operate at LOS A in both build-out traffic conditions.

The same LOS would be expected in the projected Current PUD build-out traffic condition with the same traffic signal coordination in place.

Table 6.3 summarizes the operation of the intersection of the US 401 superstreet U-turn east of Young Street for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.3
Level-of-Service
US 401 Bypass at U-Turn East of Young Street (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2019) Traffic	A (4.8)	A (3.6)
Background (2025) Traffic	A (4.7)	A (3.8)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (3.7)	A (1.6)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (4.2)	A (1.8)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (3.8)	A (1.6)

6.4 *US 401 Bypass at U-Turn West of Young Street*

Analyses indicate that the signalized intersection of the US 401 superstreet U-turn west of Young Street currently operates at LOS A in both the AM and PM peak hours and is expected to continue to operate at LOS A in the background traffic condition.

The following roadway improvement was identified to be performed as part of this development to accommodate anticipated site traffic from the residential phase of the project:

- Coordinate the traffic signals at the intersections of US 401 at Young Street and the Superstreet U-turns

With traffic signal coordination in place, the intersection is expected to continue to operate at LOS A in both build-out traffic conditions.

The same LOS would be expected in the projected Current PUD build-out traffic condition with the same traffic signal coordination in place.

Table 6.4 summarizes the operation of the intersection of the US 401 superstreet U-turn east of Young Street for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.4
Level-of-Service
US 401 Bypass at U-Turn West of Young Street (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2019) Traffic	A (4.2)	A (5.0)
Background (2025) Traffic	A (4.3)	A (4.9)
Current PUD Build-out (2025) Traffic with Signal Timing Improvements	A (1.7)	A (3.3)
Residential Build-out (2025) Traffic with Signal Timing Improvements	A (1.5)	A (3.1)
Commercial Build-out (2025) Traffic with Signal Timing Improvements	A (1.8)	A (3.3)

6.5 *Young Street at Virginia Water Drive*

Analyses indicate that the unsignalized intersection of Young Street at Virginia Water Drive currently operates with short delays on the minor street approach (Virginia Water Drive) in both the AM and PM peak hours. The intersection is expected to continue to operate with short delays on the minor street approach in the study year 2025 with or without the proposed project in place.

Minor-street approach delays are expected to increase by approximately 5 seconds or less with the addition of site traffic when compared to the background traffic condition, and SimTraffic simulations indicate that no queuing issues are anticipated at commercial build-out.

No roadway improvements are recommended at this intersection to accommodate projected site traffic.

Table 6.5 summarizes the operation of the intersection of Young Street at Virginia Water Drive for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.5
Level-of-Service
Young Street at Virginia Water Drive (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2019) Traffic	EB – C (15.0) NBL – A (8.5)	EB – B (12.8) NBL – A (8.1)
Background (2025) Traffic	EB – C (16.4) NBL – A (8.6)	EB – B (14.4) NBL – A (8.4)
Current PUD Build-out (2025) Traffic	EB – C (22.1) NBL – A (8.8)	EB – C (18.4) NBL – A (8.8)
Residential Build-out (2025) Traffic	EB – C (20.2) NBL – A (8.7)	EB – C (17.6) NBL – A (8.7)
Commercial Build-out (2025) Traffic	EB – C (21.1) NBL – A (8.8)	EB – C (18.3) NBL – A (8.8)

6.6 *Virginia Water Drive at Genovesa Drive*

Analyses indicate that the unsignalized intersection of Virginia Water Drive at Genovesa Drive currently operates with short delays and queues on the minor street approach (Genovesa Drive) in both the AM and PM peak hours. The minor street approach is expected to continue to operate with short delays and in the study year 2025 with or without the proposed project in place.

No roadway improvements at this intersection are recommended to accommodate projected site traffic.

Table 6.6 summarizes the operation of the intersection of Virginia Water Drive at Genovesa Drive for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.6
Level-of-Service
Virginia Water Drive at Genovesa Drive (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2019) Traffic	NB – A (9.2) SB – A (9.2) EBL – A (7.3) WBL – A (7.3)	NB – A (9.3) SB – A (9.1) EBL – A (7.3) WBL – A (7.3)
Background (2025) Traffic	NB – A (9.1) SB – A (9.1) EBL – A (7.3) WBL – A (7.3)	NB – A (9.3) SB – A (9.2) EBL – A (7.4) WBL – A (7.3)
Current PUD Build-out (2025) Traffic	NB – A (9.3) SB – A (9.4) EBL – A (7.3) WBL – A (7.4)	NB – A (9.9) SB – B (10.0) EBL – A (7.4) WBL – A (7.5)
Residential Build-out (2025) Traffic	NB – A (9.2) SB – A (9.3) EBL – A (7.3) WBL – A (7.4)	NB – A (9.7) SB – A (9.8) EBL – A (7.4) WBL – A (7.5)
Commercial Build-out (2025) Traffic	NB – A (9.2) SB – A (9.3) EBL – A (7.3) WBL – A (7.4)	NB – A (9.7) SB – A (9.8) EBL – A (7.4) WBL – A (7.5)

6.7 *Young Street at Century Farm Road*

Analyses indicate that the unsignalized intersection of Young Street at Century Farm Road currently operates with moderate delays on the minor street approach (Century Farm Road) in the AM peak hour and with short delays in the PM peak hour. The intersection is expected to continue to operate with short to moderate delays on the minor street approach in the background traffic condition.

In the projected Current PUD Build-out traffic condition, analyses indicate the intersection would operate with moderate delays on the minor street approach in the AM and PM peak hours.

In both the residential-only and commercial build-out traffic conditions, analyses indicate that the intersection is expected to operate with moderate delays on the minor street approach in both the AM and PM peak hours. It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours while the majority of the traffic moving through the intersection on the major street experiences little or no delay. SimTraffic simulations indicate that no queueing issues are anticipated at project build-out, and no site traffic is added to the minor street approach at this intersection.

No roadway improvements at this intersection are recommended to accommodate projected site traffic.

Table 6.7 summarizes the operation of the intersection of Young Street at Century Farm Road for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.7
Level-of-Service
Young Street at Century Farm Road (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2019) Traffic	WB – D (26.5) SBL – A (9.0)	WB – B (13.8) SBL – A (8.1)
Background (2025) Traffic	WB – D (26.1) SBL – A (9.3)	WB – C (18.9) SBL – A (8.5)
Current PUD Build-out (2025) Traffic	WB – E (47.3) SBL – B (10.5)	WB – E (39.2) SBL – A (9.3)
Residential Build-out (2025) Traffic	WB – E (40.3) SBL – B (10.4)	WB – D (33.3) SBL – A (9.1)
Commercial Build-out (2025) Traffic	WB – E (48.4) SBL – B (10.6)	WB – E (40.9) SBL – A (9.4)

6.8 *Young Street at Quarry Road/Northern Site Driveway*

Analyses indicate that the unsignalized intersection of Young Street at Quarry Road currently operates with moderate delays on the minor street approach (Quarry Road) in the AM peak hour and with short delays in the school PM and PM peak hours. In the background traffic condition, the intersection is expected to operate with long delays in the AM peak hour, moderate delays in the school PM peak hour, and short delays in the PM peak hour.

Signal warrant analyses indicate that Manual on Uniform Traffic Control Devices (MUTCD) volume warrants would be met for the peak-hour, four-hour, and eight-hour signal warrants in the residential build-out scenario.

The following improvements were identified to be performed as part of this development to accommodate projected site traffic in the residential-only phase of the development:

- Construct a northbound left-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Construct a southbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Restripe the existing westbound left-turn lane on Quarry Road to a shared left/through lane
- Provide an exclusive left-turn lane with 275 feet of storage and appropriate tapers and a shared through/right lane on the North Site Driveway
- Install a traffic signal when warranted

With the recommended improvements in place, the intersection is expected to operate at LOS D in AM peak hour, LOS C in the School PM peak hour, and LOS B in the PM peak hour in the residential-only phase of the development.

The following additional improvements are recommended to be performed to accommodate projected commercial build-out site traffic volumes:

- Construct a northbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Modify the traffic signal to accommodate the additional laneage

With the recommended improvements in place, the intersection is expected to operate at LOS D in AM peak hour, LOS C in the School PM peak hour, and LOS B in the PM peak hour in the commercial build-out phase of the development.

The same LOS would be expected in the projected Current PUD Build-out traffic condition with the same improvements and traffic signal installation in place.

Table 6.8 summarizes the operation of the intersection of Young Street at Quarry Road/Northern Site Driveway for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.8 Level-of-Service Summary Young Street at Quarry Road/Northern Site Driveway			
Condition	**AM Peak Hour LOS (Delay)**	**School PM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Existing (2019) Traffic	WB – D (30.3) SBL – A (9.7)	WB – C (18.5) SBL – A (9.0)	WB – B (12.9) SBL – A (8.2)
Background (2025) Traffic	WB – F (131.7) SBL – B (12.0)	WB – E (38.0) SBL – A (9.9)	WB – C (21.4) SBL – A (8.8)
Current PUD Build-out (2025) Traffic with Improvements – *Signalized*	D (35.2)	C (25.6)	B (17.6)
Residential Build-out (2025) Traffic with Improvements – *Signalized*	D (40.5)	C (23.9)	B (17.4)
Commercial Build-out (2025) Traffic with Improvements – *Signalized*	D (39.7)	C (23.4)	B (17.8)

6.9 *Young Street at Rolesville High School Driveway/Southern Site Driveway*

Analyses indicate that the unsignalized intersection of Young Street at the Rolesville High School Driveway currently operates with long delays on the minor street approach (Rolesville High School Driveway) in the AM peak hour and with short delays in the studied PM peak hours. In the background traffic condition, the intersection is expected to operate with long delays in the AM peak hour and school PM peak hours.

The following roadway improvements were identified to be performed as part of this development to accommodate projected site traffic in the residential-only phase of the development:

- Construct a northbound left-turn lane on Young Street with 50 feet of storage and appropriate tapers
- Provide one egress lane on the South Site Driveway

The minor street approach is expected to operate with long delays in the AM peak hour and school PM peak hour with or without the proposed project in place in the study year 2025. It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. This intersection is not expected to meet 4-hour or 8-hour Manual on Uniform Traffic Control Devices (MUTCD) traffic signal warrants at project build-out.

In the projected current PUD build-out traffic condition, the intersection would also be expected to operate with long delays on both minor street approaches in the AM peak hour and school PM peak hour with the same recommended roadway improvements in place.

Table 6.9 summarizes the operation of the intersection of Young Street at Rolesville High School Driveway/Southern Site Driveway for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.9 Level-of-Service Summary Young Street at Rolesville High School Driveway/Southern Site Driveway			
Condition	**AM Peak Hour LOS (Delay)**	**School PM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
Existing (2019) Traffic	WB – F (155.8) SBL – A (9.7)	WB – C (19.6) SBL – A (8.2)	WB – B (11.2) SBL – A (8.0)
Background (2025) Traffic	WB – F (446.0) NBL – B (11.8)	WB – F (64.9) SBL – A (8.7)	WB – B (13.5) SBL – A (8.4)
Current PUD Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.2) SBL – B (12.4)	EB – F (425.5) WB – F (323.8) NBL – A (9.8) SBL – A (9.2)	EB – E (35.8) WB – C (19.1) NBL – A (8.9) SBL – A (8.6)
Residential Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.1) SBL – B (12.1)	EB – F (226.9) WB – F (247.1) NBL – A (9.4) SBL – A (9.1)	EB – D (30.7) WB – C (18.0) NBL – A (8.8) SBL – A (8.6)
Commercial Build-out (2025) Traffic with Improvements	EB – F (>1000) WB – F (>1000) NBL – A (9.3) SBL – B (12.4)	EB – F (550.7) WB – F (343.1) NBL – A (9.9) SBL – A (9.2)	EB – E (36.1) WB – C (19.4) NBL – A (9.0) SBL – A (8.6)

6.10 *Rolesville Road at Mitchell Mill Road*

Analyses indicate that the unsignalized, all-way stop-controlled intersection of Rolesville Road at Mitchell Mill Road currently operates at an overall LOS C in the AM peak hour and LOS B in the PM peak hour. In the background traffic condition, the intersection is expected to operate at an overall LOS C in the AM peak hour and LOS B in the PM peak hour.

The following improvements were identified to be performed as part of this development to accommodate projected site traffic in the residential phase of the development:

- Install a traffic signal when warranted

With the recommended signal in place, the intersection is expected to operate at LOS B in both the AM and PM peak hours in the studied build-out scenarios.

In the projected current PUD build-out traffic condition, analyses indicate the intersection would operate at the same LOS with the recommended traffic signal in place.

Table 6.10 summarizes the operation of the intersection of Rolesville Road at Mitchell Mill Road for the existing (2019) and projected (2025) background and build-out traffic conditions.

Table 6.10
Level-of-Service
Rolesville Road at Mitchell Mill Road

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2019) Traffic – *All-Way Stop*	C (16.2)	B (10.6)
Background (2025) Traffic – *All-Way Stop*	C (22.0)	B (13.1)
Current PUD Build-out (2025) Traffic – *Signalized*	B (18.9)	B (11.7)
Residential Build-out (2025) Traffic – *Signalized*	B (18.2)	B (11.4)
Commercial Build-out (2025) Traffic – *Signalized*	B (19.2)	B (13.2)

6.11 *Young Street at Central Site Driveway*

The following roadway improvements were identified to be performed as part of this development to accommodate projected site traffic in the residential phase of the development:

- Construct a northbound left-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Construct a southbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Provide exclusive left and right-turn lanes on the Central Site Driveway with 125 feet of storage and appropriate tapers for the left-turn lane

Analyses indicate that the unsignalized intersection of Young Street at the Central Site Driveway is expected to operate with moderate delays on the minor street approach (Central Site Driveway) in the AM peak hour and with short delays in the PM peak hour in the residential-only build-out scenario.

At commercial build-out, the intersection is expected to operate with long delays on the minor street approach in the AM peak hour and moderate delays in the PM peak hour. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. SimTraffic indicates that no queueing issues are expected at this intersection.

In the projected current PUD build-out traffic condition, analyses indicate the intersection would operate with moderate delays on the minor street approach in both the AM and PM peak hours with the same roadway improvements in place.

Table 6.11 summarizes the operation of the intersection of Young Street at the Central Site Driveway for the projected (2025) build-out traffic conditions.

Table 6.11
Level-of-Service
Young Street at Central Site Driveway (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Current PUD Build-out (2025) Traffic with Improvements	EB – F (52.3) NBL – B (10.0)	EB – D (29.9) NBL – B (10.0)
Residential Build-out (2025) Traffic with Improvements	EB – E (41.4) NBL – A (9.7)	EB – C (24.0) NBL – A (9.8)
Commercial Build-out (2025) Traffic with Improvements	EB – F (58.2) NBL – B (10.0)	EB – D (31.4) NBL – B (10.1)

7.0 Recommendations

Residential Build-out

The following improvements are recommended to be performed to accommodate projected site traffic volumes at build-out of the residential portion of the development:

US 401 Bypass:

- Coordinate the traffic signals at the intersections of US 401 at Young Street and the Superstreet U-turns

Young Street at Quarry Road/North Site Driveway:

- Construct a northbound left-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Construct a southbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Restripe the existing westbound left-turn lane on Quarry Road to a shared left/through lane
- Provide an exclusive left-turn lane with 275 feet of storage and appropriate tapers and a shared through/right lane on the North Site Driveway
- Install a traffic signal when warranted

Young Street at Central Site Driveway:

- Construct a northbound left-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Construct a southbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Provide exclusive left and right-turn lanes on the Central Site Driveway with 125 feet of storage and appropriate tapers for the left-turn lane

Young Street at Rolesville High School Driveway/South Site Driveway:

- Construct a northbound left-turn lane on Young Street with 50 feet of storage and appropriate tapers
- Provide one egress lane on the South Site Driveway

Rolesville Road at Mitchell Mill Road:

- Install a traffic signal when warranted

Analyses indicate that with the recommended improvements in place, all of the study intersections except for Young Street at Century Farm Road and Young Street at Rolesville High School Driveway/South Site Driveway are expected to operate at an acceptable LOS at build-out of the residential-only phase of the development.

Analyses indicate that the intersection of Young Street at Century Farm Road is expected to operate with long delays on the minor street approach (Century Farm Road) in the AM peak hour at project build-out. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours while the majority of the traffic moving through the intersection on the major street experiences little or no delay. SimTraffic traffic simulations indicate that no queuing issues are expected at this intersection.

Analyses indicate that the intersection of Young Street at the Rolesville High School Driveway/South Site Driveway is expected to operate with long delays on the minor street approach (Rolesville High School Driveway) in the AM peak hour and school PM peak hour with or without the proposed project in place in the study year 2025. SimTraffic traffic simulations also indicate the possibility of long queues on the westbound left-turn movement at this intersection in the AM peak hour and school PM peak hour. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. This intersection is not expected to meet 4-hour or 8-hour MUTCD traffic signal warrants.

Commercial Build-out

The following additional improvements are recommended to be performed in addition to those recommended above for the residential phase to accommodate projected site traffic volumes when the retail portion of the site is developed:

US 401 Bypass Eastbound at Young Street:

- Extend the storage of the existing eastbound right-turn lane on US 401 Bypass by approximately 175 feet to provide 400 feet of storage and appropriate tapers

Young Street at Quarry Road/North Site Driveway:

- Construct a northbound right-turn lane on Young Street with 100 feet of storage and appropriate tapers
- Modify the traffic signal to accommodate the additional laneage

Analyses indicate that with the recommended improvements in place, all of the study intersections except for Young Street at Century Farm Road, Young Street at the Central Site Driveway, and Young Street at Rolesville High School Driveway/South Site Driveway are expected to operate at acceptable LOS at commercial build-out of the development.

Analyses indicate that the intersection of Young Street at Century Farm Road is expected to operate with long delays on the minor street approach (Century Farm Road) in the AM peak hour at project build-out. It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. SimTraffic

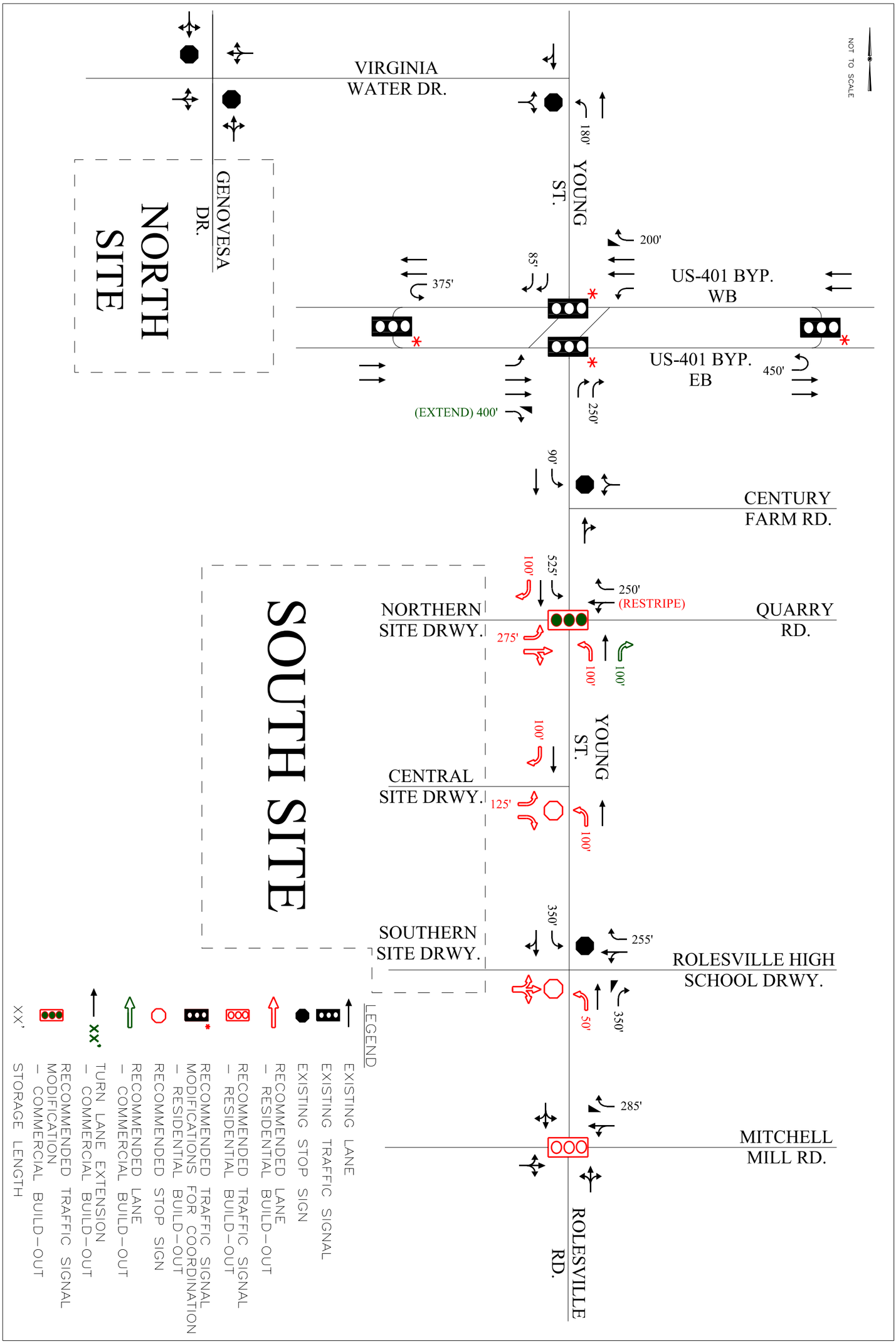
traffic simulations indicate that short queues are likely on the minor street approach in the AM peak hour at commercial build-out.

Analyses indicate that the intersection of Young Street at the Central Site Driveway is expected to operate with long delays on the minor street approach (Central Site Driveway) in the AM peak hour in the commercial build-out traffic condition. It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. SimTraffic traffic simulations indicate the possibility of long queues on the eastbound left-turn movement at this intersection in the AM peak hour in the commercial build-out condition.

Analyses indicate that the intersection of Young Street at the Rolesville High School Driveway/South Site Driveway is expected to operate with long delays on the minor street approach (Rolesville High School Driveway) in the AM peak hour and school PM peak hour with or without the proposed project in place in the study year 2025. SimTraffic traffic simulations also indicate the possibility of long queues on the westbound left-turn movement at this intersection in the AM peak hour and school PM peak hour. However, it is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. This intersection is not expected to meet 4-hour or 8-hour MUTCD traffic signal warrants.

As shown in the analysis, the impact of site traffic associated with the commercial build-out of this proposed PUD is generally consistent with the currently-approved PUD for the site. The proposed PUD is expected to generate no more than 50 additional peak hour trips in each of the studied peak hours compared to the approved PUD, and delays at commercial build-out of both plans are generally consistent at each of the study intersections.

The recommended laneage for the development is shown on **Figure 17**.



Kimley»Horn

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

RECOMMENDED
ROADWAY LANEAGE

FIGURE
17

Appendix

Appendix A:
Assumptions Memorandum

Preliminary Assumptions
Young Street PUD - Traffic Impact Analysis
Rolesville, North Carolina

KHA will perform an analysis for the proposed Young Street PUD development, which is proposed to be located along US 401 west of Young Street in Rolesville, North Carolina. The current development plan for the site includes:

- Approximately 210 townhomes north of the US 401 Bypass
- Approximately 525 single-family homes south of the US 401 Bypass
- Approximately 320 townhomes south of the US 401 Bypass

Additionally, while not currently proposed as part of this project, approximately 12.28 acres of the PUD development is designated to be retail space. For this analysis it was assumed be developed at 10,000 square feet per acre for a total of 122,800 square feet.

The following assumptions will be used in the analysis.

Study Scenarios

The study scenarios will consist of:

- Existing (2019)
- Background (2025)
- Build-out (2025) – Residential Uses Only
- Build-out (2025) – Residential and Retail Uses

Study Intersections

The study area will consist of the following intersections:

- US 401 Bypass at Young Street
- US 401 Bypass at East Young Street U-Turn
- US 401 Bypass at West Young Street U-Turn
- Young Street at Virginia Water Drive
- Young Street at Century Farm Road
- Young Street at Quarry Road/Northern Site Driveway
- Young Street at Rolesville High School Driveway/Southern Site Driveway
- Young Street at Mitchell Mill Road
- Virginia Water Drive at Genovesa Drive
- Young Street at Central Site Driveway

Traffic Counts

Existing traffic counts will be collected in 15-minute intervals for the AM peak hour (6:00 to 9:00 AM) and PM peak hour (4:00 to 7:00 PM) at each of the study intersections. A 14-hour count (6:00AM to 8:00 PM) will be performed at the intersection of Young Street at Quarry Road for signal warrant analyses. The school PM peak hour (1:00 to 4:00 PM) will be analyzed at the intersections of Young Street at Quarry Road and at the Rolesville High School Driveway to determine site traffic impacts on those intersections in the school PM peak hour.

Background Volume Development

In addition to the Kalas Falls project identified in the original scoping meeting, two additional approved developments will be included in this analysis as background traffic: the Watkins Family Property and the Rogers Farm development. Site traffic from all three of those developments will be included in this analysis as background traffic.

Based on our review of anticipated approved development volumes, those trips represent effective annual growth rates typically ranging from 1% to 3% at study area intersections, with some effective annual growth rates as high as 6% due solely to approved development volumes. As such, an annual growth rate of 2% will be applied to the existing traffic volumes up to the year 2025 to account for background traffic growth and other potential development in the area.

Site Traffic Distribution

The following distribution will be used for the residential portion of the development north of US 401 Bypass (this distribution may change based on traffic counts performed on Virginia Water Drive):

- 60% to/from the west on US 401
- 10% to/from the east on US 401
- 10% to/from the north on Young Street
- 10% to/from the south on Young Street
- 10% to/from the west on Virginia Water Drive

The following distribution will be used for both residential and retail site traffic on the south side of US 401 Bypass (note separate entering and exiting distributions based on a review of counts and travel paths):

- 30% to the west on US 401
- 30% to the west on Mitchell Mill Road
- 10% to the east on US 401
- 15% to the north on Young Street
- 15% to the south on Young Street

- 60% from the west on US 401
- 10% from the east on US 401
- 15% from the north on Young Street
- 15% from the south on Young Street

Trip Generation

Trip generation for the site will be performed using the 10th Edition of the ITE Trip Generation Manual.

Analyses will be performed for build-out scenarios with and without the proposed future retail component to distinguish which (if any) roadway improvements should be required of the residential portion of the development. Additionally, trip generation calculations will break-out uses north and south of US 401 Bypass for clarity.

To be conservative, no internal capture will be applied between the northern portion of the development and the future retail component.

Other Study Assumptions

Existing peak hour factors (PHF's) will be used at existing intersections. Right-turns on Red (RTOR) will be permitted in the analysis where currently allowed.

Young Street PUD

Table 1 - Trip Generation - Residential Only

Land Use		Intensity		Daily			AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out	Total	In	Out
North Side												
220	Multifamily Housing (Low-Rise)	210	d.u.	1,548	774	774	97	22	75	114	72	42
Total Net New External Trips - North Side				**1,548**	**774**	**774**	**97**	**22**	**75**	**114**	**72**	**42**
South Side												
210	Single Family Detached Housing	525	d.u.	4,782	2,391	2,391	378	95	283	499	314	185
220	Multifamily Housing (Low-Rise)	320	d.u.	2,378	1,189	1,189	144	33	111	166	105	61
Total Net New External Trips - South Side				**7,160**	**3,580**	**3,580**	**522**	**128**	**394**	**665**	**419**	**246**
Total Net New External Trips - Total Site				**8,708**	**4,354**	**4,354**	**619**	**150**	**469**	**779**	**491**	**288**

Young Street PUD

Table 2 - Trip Generation - Residential + Retail

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
North Side											
220 Multifamily Housing (Low-Rise)	210	d.u.	1,548	774	774	97	22	75	114	72	42
Total Net New External Trips - North Side			**1,548**	**774**	**774**	**97**	**22**	**75**	**114**	**72**	**42**
South Side											
210 Single Family Detached Housing	525	d.u.	4,782	2,391	2,391	378	95	283	499	314	185
220 Multifamily Housing (Low-Rise)	320	d.u.	2,378	1,189	1,189	144	33	111	166	105	61
820 Shopping Center	122,800	s.f.	6,914	3,457	3,457	213	132	81	633	304	329
South Side Subtotal			**14,074**	**7,037**	**7,037**	**735**	**260**	**475**	**1,298**	**723**	**575**
Internal Capture											
210 Single Family Detached Housing			774	462	312	5	2	3	87	64	23
220 Multifamily Housing (Low-Rise)			384	229	155	2	1	1	29	22	7
820 Shopping Center			1,158	467	691	7	4	3	116	30	86
Internal Capture Total	**17.87%**		2,316	1,158	1,158	14	7	7	232	116	116
South Side Total External Trips			**11,758**	**5,879**	**5,879**	**721**	**253**	**468**	**1,066**	**607**	**459**
Pass-By Traffic (ITE)	AM	PM									
820 Shopping Center	0%	34%	1,922	961	961	0	0	0	176	93	83
Total Net New External Trips - South Side			**9,836**	**4,918**	**4,918**	**721**	**253**	**468**	**890**	**514**	**376**
Total Net New External Trips - Total Site			**11,384**	**5,692**	**5,692**	**818**	**275**	**543**	**1,004**	**586**	**418**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	3,457	3,457	132	81	304	329
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3,580	3,580	128	394	419	246
Hotel	0	0	0	0	0	0
	7,037	7,037	260	475	723	575

INTERNAL TRIPS

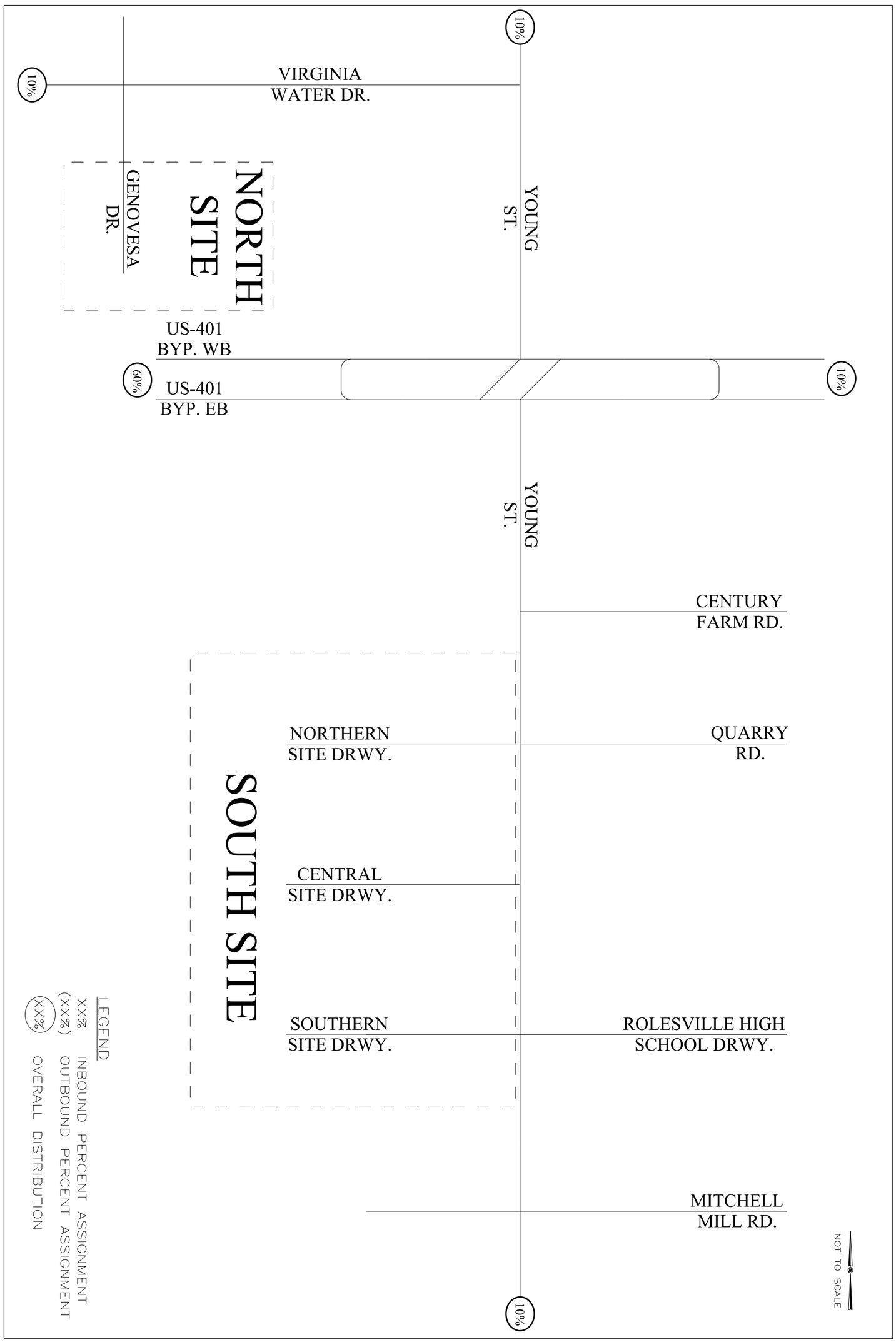
OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	467	691	4	3	30	86
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	691	467	3	4	86	30
Hotel	0	0	0	0	0	0
	1,158	1,158	7	7	116	116
% Reduction	16.5%		1.9%		17.9%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	2,990	2,766	128	78	274	243
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2,889	3,113	125	390	333	216
Hotel	0	0	0	0	0	0
	5,879	5,879	253	468	607	459



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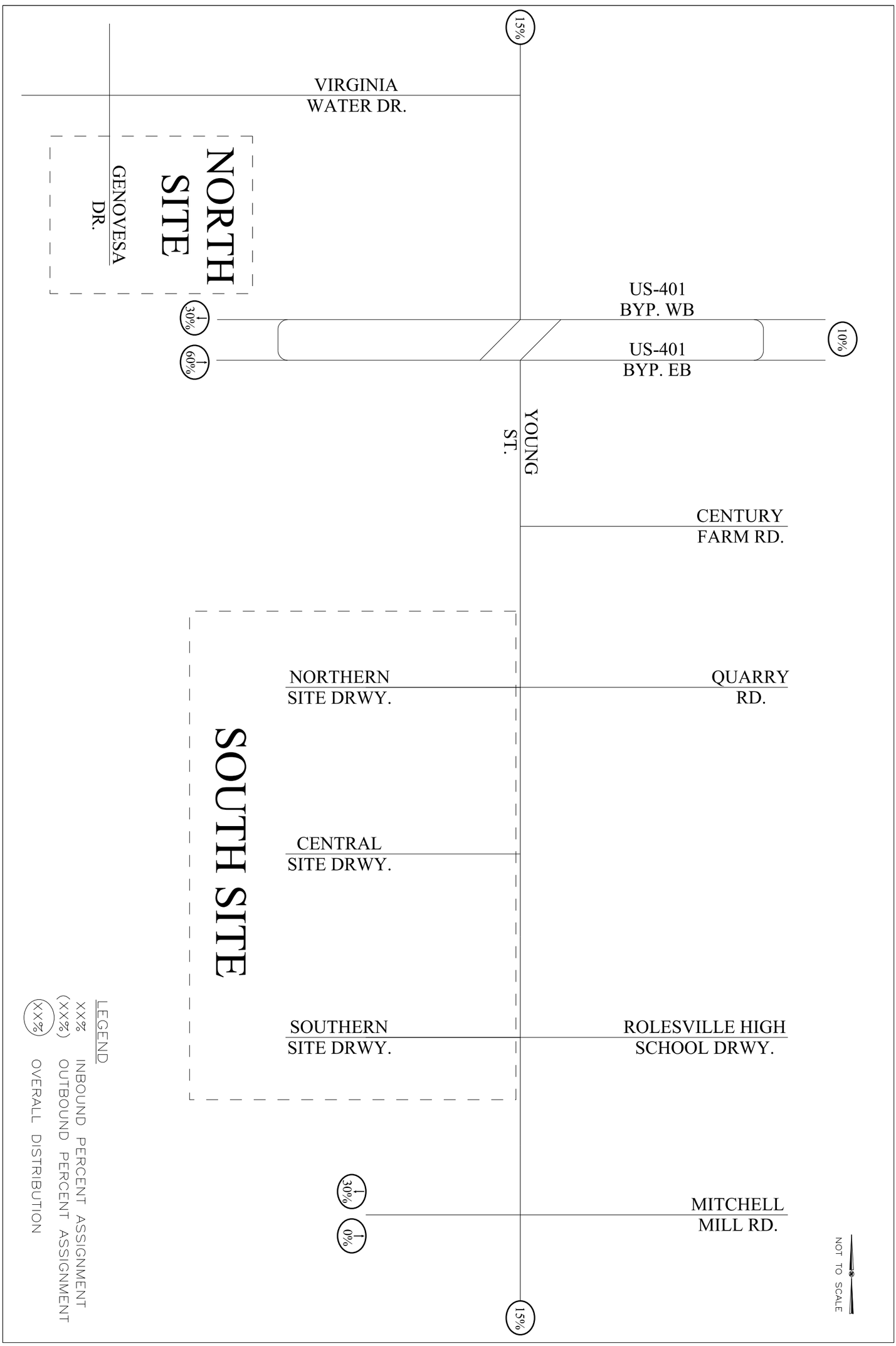
YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

SITE TRAFFIC DISTRIBUTION
FOR THE SITE NORTH OF
US-401 BYPASS

FIGURE
1A



Kimley»Horn

YOUNG STREET PUD
ROLESVILLE, NC
TRAFFIC IMPACT ANALYSIS

SITE TRAFFIC DISTRIBUTION
AND PERCENT ASSIGNMENT
FOR THE SITE SOUTH OF
US-401 BYPASS

FIGURE
1B

Appendix B:
Trip Generation

Young Street PUD

Table 1 - Trip Generation - Currently-Approved PUD

Land Use	Intensity		Daily			AM Peak Hour			School PM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
North Side														
220 Multifamily Housing (Low-Rise)	210	d.u.	1,548	774	774	97	22	75	86	54	32	114	72	42
Total Net New External Trips - North Side			**1,548**	**774**	**774**	**97**	**22**	**75**	**86**	**54**	**32**	**114**	**72**	**42**
South Side														
210 Single Family Detached Housing	650	d.u.	5,820	2,910	2,910	466	117	349	477	300	177	613	386	227
220 Multifamily Housing (Low-Rise)	40	d.u.	262	131	131	20	5	15	20	12	8	26	16	10
820 Shopping Center	108,200	s.f.	6,344	3,172	3,172	206	128	78	576	276	300	576	276	300
South Side Subtotal			**12,426**	**6,213**	**6,213**	**692**	**250**	**442**	**1,072**	**588**	**484**	**1,215**	**678**	**537**
Internal Capture														
210 Single Family Detached Housing			1,017	607	410	6	2	4	102	75	27	102	75	27
220 Multifamily Housing (Low-Rise)			45	27	18	0	0	0	4	3	1	4	3	1
820 Shopping Center			1,062	428	634	6	4	2	106	28	78	106	28	78
Internal Capture Total	**17.45%**		2,124	1,062	1,062	12	6	6	212	106	106	212	106	106
South Side Total External Trips			**10,302**	**5,151**	**5,151**	**680**	**244**	**436**	**860**	**482**	**378**	**1,003**	**572**	**431**
Pass-By Traffic (ITE)	AM	PM												
820 Shopping Center	0%	34%	1,751	876	876	0	0	0	159	84	75	159	84	75
Total Net New External Trips - South Side			**8,551**	**4,275**	**4,275**	**680**	**244**	**436**	**701**	**398**	**303**	**844**	**488**	**356**
Total Net New External Trips - Total Site			**10,098**	**5,049**	**5,049**	**777**	**266**	**511**	**787**	**452**	**335**	**958**	**560**	**398**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	3,172	3,172	128	78	276	300
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3,041	3,041	122	364	402	237
Hotel	0	0	0	0	0	0
	6,213	6,213	250	442	678	537

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	428	634	4	2	28	78
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	634	428	2	4	78	28
Hotel	0	0	0	0	0	0
	1,062	1,062	6	6	106	106
% Reduction	17.1%		1.7%		17.4%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	2,744	2,538	124	76	248	222
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2,407	2,613	120	360	324	209
Hotel	0	0	0	0	0	0
	5,151	5,151	244	436	572	431

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
eneration Handbook , 3rd Edition, published by the Institute of Trans

Methodology for Daily
average of the Unconstrained Rates for the A.M. Peak Hour and P.I

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	School P.M. Peak Hour	
	Enter	Exit
Office	0	0
Retail	276	300
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	312	184
Hotel	0	0
	588	484

INTERNAL TRIPS

OUTPUT

Land Use	P.M. Peak Hour	
	Enter	Exit
Office	0	0
Retail	28	78
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	78	28
Hotel	0	0
	106	106
% Reduction	19.8%	

EXTERNAL TRIPS

OUTPUT

Land Use	P.M. Peak Hour	
	Enter	Exit
Office	0	0
Retail	248	222
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	234	156
Hotel	0	0
	482	378

Young Street PUD

Table 2 - Trip Generation - Residential Only

Land Use	Intensity		Daily			AM Peak Hour			School PM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
North Side														
210 Single Family Detached Housing	96	d.u.	1,002	501	501	73	18	55	76	48	28	98	62	36
Total Net New External Trips - North Side			**1,002**	**501**	**501**	**73**	**18**	**55**	**76**	**48**	**28**	**98**	**62**	**36**
South Side														
210 Single Family Detached Housing	525	d.u.	4,782	2,391	2,391	378	95	283	388	244	144	499	314	185
220 Multifamily Housing (Low-Rise)	320	d.u.	2,378	1,189	1,189	144	33	111	125	79	46	166	105	61
Total Net New External Trips - South Side			**7,160**	**3,580**	**3,580**	**522**	**128**	**394**	**513**	**323**	**190**	**665**	**419**	**246**
Total Net New External Trips - Total Site			**8,162**	**4,081**	**4,081**	**595**	**146**	**449**	**589**	**371**	**218**	**763**	**481**	**282**

Young Street PUD

Table 3 - Trip Generation - Full Build-out - Residential + Retail

Land Use	Intensity		Daily			AM Peak Hour			School PM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
North Side														
210 Single Family Detached Housing	96	d.u.	1,002	501	501	73	18	55	76	48	28	98	62	36
Total Net New External Trips - North Side			**1,002**	**501**	**501**	**73**	**18**	**55**	**76**	**48**	**28**	**98**	**62**	**36**
South Side														
210 Single Family Detached Housing	525	d.u.	4,782	2,391	2,391	378	95	283	388	244	144	499	314	185
220 Multifamily Housing (Low-Rise)	320	d.u.	2,378	1,189	1,189	144	33	111	125	79	46	166	105	61
820 Shopping Center	122,800	s.f.	6,914	3,457	3,457	213	132	81	633	304	329	633	304	329
South Side Subtotal			**14,074**	**7,037**	**7,037**	**735**	**260**	**475**	**1,146**	**627**	**519**	**1,298**	**723**	**575**
Internal Capture														
210 Single Family Detached Housing			774	462	312	5	2	3	88	65	23	87	64	23
220 Multifamily Housing (Low-Rise)			384	229	155	2	1	1	28	21	7	29	22	7
820 Shopping Center			1,158	467	691	7	4	3	116	30	86	116	30	86
Internal Capture Total	**17.87%**		2,316	1,158	1,158	14	7	7	232	116	116	232	116	116
South Side Total External Trips			**11,758**	**5,879**	**5,879**	**721**	**253**	**468**	**914**	**511**	**403**	**1,066**	**607**	**459**
Pass-By Traffic (ITE)	AM	PM												
820 Shopping Center	0%	34%	1,922	961	961	0	0	0	176	93	83	176	93	83
Total Net New External Trips - South Side			**9,836**	**4,918**	**4,918**	**721**	**253**	**468**	**738**	**418**	**320**	**890**	**514**	**376**
Total Net New External Trips - Total Site			**10,838**	**5,419**	**5,419**	**794**	**271**	**523**	**814**	**466**	**348**	**988**	**576**	**412**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	3,457	3,457	132	81	304	329
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3,580	3,580	128	394	419	246
Hotel	0	0	0	0	0	0
	7,037	7,037	260	475	723	575

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	467	691	4	3	30	86
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	691	467	3	4	86	30
Hotel	0	0	0	0	0	0
	1,158	1,158	7	7	116	116
% Reduction	16.5%		1.9%		17.9%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	0	0	0	0	0	0
Retail	2,990	2,766	128	78	274	243
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2,889	3,113	125	390	333	216
Hotel	0	0	0	0	0	0
	5,879	5,879	253	468	607	459

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
eneration Handbook , 3rd Edition, published by the Institute of Trans

Methodology for Daily
average of the Unconstrained Rates for the A.M. Peak Hour and P.I

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	School P.M. Peak Hour	
	Enter	Exit
Office	0	0
Retail	304	329
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	323	190
Hotel	0	0
	627	519

INTERNAL TRIPS

OUTPUT

Land Use	P.M. Peak Hour	
	Enter	Exit
Office	0	0
Retail	30	86
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	86	30
Hotel	0	0
	116	116
% Reduction	20.3%	

EXTERNAL TRIPS

OUTPUT

Land Use	P.M. Peak Hour	
	Enter	Exit
Office	0	0
Retail	274	243
Restaurant	0	0
Cinema/Entertainment	0	0
Residential	237	160
Hotel	0	0
	511	403

Appendix C:
Traffic Count Data

Project ID: 19-09055-001
Location: Young St/Rolesville Rd & US-401 Bypass/Louisburg Rd
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Young St/Rolesville Rd Northbound						Young St/Rolesville Rd Southbound						US-401 Bypass/Louisburg Rd Eastbound						US-401 Bypass/Louisburg Rd Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	0	37	0	0	37	0	0	50	0	0	50	4	28	25	0	0	57	12	228	18	0	0	258	402
6:15 AM	0	0	40	0	0	40	0	0	53	0	0	53	6	37	36	0	0	79	22	263	29	0	0	314	486
6:30 AM	0	0	67	0	0	67	0	0	101	0	0	101	8	47	118	0	0	173	47	290	39	0	0	376	717
6:45 AM	0	0	112	0	0	112	0	0	172	0	0	172	7	45	255	0	0	307	54	277	57	0	0	388	979
Total	0	0	256	0	0	256	0	0	376	0	0	376	25	157	434	0	0	616	135	1058	143	0	0	1336	2584
7:00 AM	0	0	171	0	0	171	0	0	113	0	0	113	14	64	136	0	0	214	26	286	75	0	0	387	885
7:15 AM	0	0	140	0	0	140	0	0	67	0	0	67	19	73	55	0	0	147	19	261	90	0	0	370	724
7:30 AM	0	0	96	0	0	96	0	0	120	0	0	120	17	82	77	0	0	176	21	201	63	0	0	285	677
7:45 AM	0	0	57	0	0	57	0	0	102	0	0	102	12	66	66	0	0	144	32	174	51	0	0	257	560
Total	0	0	464	0	0	464	0	0	402	0	0	402	62	285	334	0	0	681	98	922	279	0	0	1299	2846
8:00 AM	0	0	52	0	0	52	0	0	79	0	0	79	9	53	56	0	0	118	7	163	39	0	0	209	458
8:15 AM	0	0	60	0	0	60	0	0	55	0	0	55	11	63	33	0	0	107	13	179	49	0	0	241	463
8:30 AM	0	0	63	0	0	63	0	0	56	0	0	56	10	61	30	0	0	101	11	188	39	0	0	238	458
8:45 AM	0	0	60	0	0	60	0	0	55	0	0	55	6	47	49	0	0	102	10	137	44	0	0	191	408
Total	0	0	235	0	0	235	0	0	245	0	0	245	36	224	168	0	0	428	41	667	171	0	0	879	1787
BREAK																									
4:00 PM	0	0	68	0	0	68	0	0	83	0	0	83	30	198	88	0	0	316	18	101	33	0	0	152	619
4:15 PM	0	0	68	0	0	68	0	0	92	0	0	92	31	183	95	0	0	309	17	100	44	0	0	161	630
4:30 PM	0	0	85	0	0	85	0	0	73	0	0	73	26	205	100	0	0	331	24	96	53	0	0	173	662
4:45 PM	0	0	94	0	0	94	0	0	75	0	0	75	32	219	90	0	0	341	27	126	61	0	0	214	724
Total	0	0	315	0	0	315	0	0	323	0	0	323	119	805	373	0	0	1297	86	423	191	0	0	700	2635
5:00 PM	0	0	87	0	0	87	0	0	104	0	0	104	30	196	100	0	0	326	14	100	51	0	0	165	682
5:15 PM	0	0	87	0	0	87	0	0	53	0	0	53	22	197	72	0	0	291	13	115	48	0	0	176	607
5:30 PM	0	0	114	0	0	114	0	0	77	0	0	77	28	183	63	0	0	274	16	92	71	0	0	179	644
5:45 PM	0	0	60	0	0	60	0	0	64	0	0	64	35	178	65	0	0	278	20	74	51	0	0	145	547
Total	0	0	348	0	0	348	0	0	298	0	0	298	115	754	300	0	0	1169	63	381	221	0	0	665	2480
Grand Total	0	0	1618	0	0	1618	0	0	1644	0	0	1644	357	2225	1609	0	0	4191	423	3451	1005	0	0	4879	12332
Apprch %	0.0	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		8.5	53.1	38.4	0.0	0.0		8.7	70.7	20.6	0.0	0.0		
Total %	0.0	0.0	13.1	0.0	0.0	13.1	0.0	0.0	13.3	0.0	0.0	13.3	2.9	18.0	13.0	0.0	0.0	34.0	3.4	28.0	8.1	0.0	0.0	39.6	
Cars, PU, Vans	0	0	1548	0	0	1548	0	0	1597		0	1597	348	2162	1527	0		4037	404	3349	976		0	4729	11911
% Cars, PU, Vans	0.0	0.0	95.7	0.0	0.0	95.7	0.0	0.0	97.1	0.0	0.0	97.1	97.5	97.2	94.9	0.0	0.0	96.3	95.5	97.0	97.1	0.0	0.0	96.9	96.6
Heavy Trucks	0	0	70	0		70	0	0	47	0		47	9	63	82	0		154	19	102	29	0		150	421
%Heavy Trucks	0.0	0.0	4.3	0.0	0.0	4.3	0.0	0.0	2.9	0.0	0.0	2.9	2.5	2.8	5.1	0.0	0.0	3.7	4.5	3.0	2.9	0.0	0.0	3.1	3.4

Project ID: 19-09055-001
Location: Young St/Rolesville Rd & US-401 Bypass/Louisbu
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					US-401 Bypass/Louisburg Rd Eastbound					US-401 Bypass/Louisburg Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
6:30 AM	0	0	67	0	67	0	0	101	0	101	8	47	118	0	173	47	290	39	0	376	717
6:45 AM	0	0	112	0	112	0	0	172	0	172	7	45	255	0	307	54	277	57	0	388	979
7:00 AM	0	0	171	0	171	0	0	113	0	113	14	64	136	0	214	26	286	75	0	387	885
7:15 AM	0	0	140	0	140	0	0	67	0	67	19	73	55	0	147	19	261	90	0	370	724
Total Volume	0	0	490	0	490	0	0	453	0	453	48	229	564	0	841	146	1114	261	0	1521	3305
% App. Total	0.0	0.0	100.0	0.0	100	0.0	0.0	100.0	0.0	100	5.7	27.2	67.1	0.0	100	9.6	73.2	17.2	0.0	100	
PHF					0.716					0.658					0.685					0.980	0.844
Cars, PU, Vans	0	0	459	0	459	0	0	445	0	445	47	223	534	0	804	137	1085	250	0	1472	3180
% Cars, PU, Vans	0.0	0.0	93.7	0.0	93.7	0.0	0.0	98.2	0.0	98.2	97.9	97.4	94.7	0.0	95.6	93.8	97.4	95.8	0.0	96.8	96.2
Heavy Trucks	0	0	31	0	31	0	0	8	0	8	1	6	30	0	37	9	29	11	0	49	125
%Heavy Trucks	0.0	0.0	6.3	0.0	6.3	0.0	0.0	1.8	0.0	1.8	2.1	2.6	5.3	0.0	4.4	6.2	2.6	4.2	0.0	3.2	3.8

PM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					US-401 Bypass/Louisburg Rd Eastbound					US-401 Bypass/Louisburg Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	0	0	68	0	68	0	0	92	0	92	31	183	95	0	309	17	100	44	0	161	630
4:30 PM	0	0	85	0	85	0	0	73	0	73	26	205	100	0	331	24	96	53	0	173	662
4:45 PM	0	0	94	0	94	0	0	75	0	75	32	219	90	0	341	27	126	61	0	214	724
5:00 PM	0	0	87	0	87	0	0	104	0	104	30	196	100	0	326	14	100	51	0	165	682
Total Volume	0	0	334	0	334	0	0	344	0	344	119	803	385	0	1307	82	422	209	0	713	2698
% App. Total	0.0	0.0	100.0	0.0	100	0.0	0.0	100.0	0.0	100	9.1	61.4	29.5	0.0	100	11.5	59.2	29.3	0.0	100	
PHF					0.888					0.827					0.958					0.833	0.932
Cars, PU, Vans	0	0	328	0	328	0	0	330	0	330	117	784	368	0	1269	76	412	206	0	694	2621
% Cars, PU, Vans	0.0	0.0	98.2	0.0	98.2	0.0	0.0	95.9	0.0	95.9	98.3	97.6	95.6	0.0	97.1	92.7	97.6	98.6	0.0	97.3	97.1
Heavy Trucks	0	0	6	0	6	0	0	14	0	14	2	19	17	0	38	6	10	3	0	19	77
%Heavy Trucks	0.0	0.0	1.8	0.0	1.8	0.0	0.0	4.1	0.0	4.1	1.7	2.4	4.4	0.0	2.9	7.3	2.4	1.4	0.0	2.7	2.9

Location: Young St/Rolesville Rd & US-401 Bypass/Louisburg Rd
City: Rolesville
Control: Signalized

Project ID: 19-09055-001
Date: 1/29/2019

Bikes

NS/EW Streets:	Young St/Rolesville Rd				Young St/Rolesville Rd				US-401 Bypass/Louisburg Rd				US-401 Bypass/Louisburg Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	2	0	0	0	2	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	06:30 AM - 07:30 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
	0.250																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	2	0	0	0	2	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Location: Young St/Rolesville Rd & US-401 Bypass/Louisburg Rd Project ID: 19-09055-001
City: Rolesville Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Young St/Rolesville Rd		Young St/Rolesville Rd		US-401 Bypass/Louisburg Rd		US-401 Bypass/Louisburg Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	06:30 AM - 07:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Project ID: 19-09055-003
Location: E Young St U-Turn & US-401 Bypass/Louisburg Rd
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	E Young St U-Turn Northbound						E Young St U-Turn Southbound						US-401 Bypass/Louisburg Rd Eastbound						US-401 Bypass/Louisburg Rd Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	47	0	73	0	199	0	0	0	199	272
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0	51	0	90	0	282	0	0	0	282	372
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	44	0	54	0	98	0	313	0	0	0	313	411
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	56	0	88	0	144	0	316	0	0	0	316	460
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	165	0	240	0	405	0	1110	0	0	0	1110	1515
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	127	0	119	0	246	0	248	0	0	0	248	494
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	94	0	107	0	201	0	254	0	0	0	254	455
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	93	0	87	0	180	0	219	0	0	0	219	399
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0	72	0	131	0	170	0	0	0	170	301
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	373	0	385	0	758	0	891	0	0	0	891	1649
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	65	0	42	0	107	0	200	0	0	0	200	307
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	71	0	35	0	106	0	174	0	0	0	174	280
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	64	0	58	0	122	0	189	0	0	0	189	311
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	77	0	50	0	127	0	132	0	0	0	132	259
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	277	0	185	0	462	0	695	0	0	0	695	1157
BREAK																									
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	199	0	53	0	252	0	111	0	0	0	111	363
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	203	0	48	0	251	0	101	0	0	0	101	352
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	227	0	78	0	305	0	112	0	0	0	112	417
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	220	0	66	0	286	0	132	0	0	0	132	418
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	849	0	245	0	1094	0	456	0	0	0	456	1550
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	246	0	53	0	299	0	118	0	0	0	118	417
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	219	0	78	0	297	0	90	0	0	0	90	387
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	205	0	80	0	285	0	102	0	0	0	102	387
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	190	0	65	0	255	0	85	0	0	0	85	340
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	860	0	276	0	1136	0	395	0	0	0	395	1531
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	2524	0	1331	0	3855	0	3547	0	0	0	3547	7402
Apprch %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	65.5	0.0	34.5	0.0		0.0	100.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.1	0.0	18.0	0.0	52.1	0.0	47.9	0.0	0.0	0.0	47.9	
Cars, PU, Vans	0	0	0	0	0	0	0	0	0		0	0	0	2452	0	1268		3720	0	3459	0		0	3459	7179
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.1	0.0	95.3	0.0	96.5	0.0	97.5	0.0	0.0	0.0	97.5	97.0
Heavy Trucks	0	0	0	0		0	0	0	0	0		0	0	72	0	63		135	0	88	0	0		88	223
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	4.7	0.0	3.5	0.0	2.5	0.0	0.0	0.0	2.5	3.0

Project ID: 19-09055-003
Location: E Young St U-Turn & US-401 Bypass/Louisburg R
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	E Young St U-Turn Northbound					E Young St U-Turn Southbound					US-401 Bypass/Louisburg Rd Eastbound					US-401 Bypass/Louisburg Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	44	0	54	98	0	313	0	0	313	411
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	56	0	88	144	0	316	0	0	316	460
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	127	0	119	246	0	248	0	0	248	494
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	94	0	107	201	0	254	0	0	254	455
Total Volume	0	0	0	0	0	0	0	0	0	0	0	321	0	368	689	0	1131	0	0	1131	1820
% App. Total	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	46.6	0.0	53.4	100	0.0	100.0	0.0	0.0	100	
PHF															0.700					0.895	0.921
Cars, PU, Vans	0	0	0	0	0	0	0	0	0	0	0	307	0	349	656	0	1102	0	0	1102	1758
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.6	0.0	94.8	95.2	0.0	97.4	0.0	0.0	97.4	96.6
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	14	0	19	33	0	29	0	0	29	62
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	5.2	4.8	0.0	2.6	0.0	0.0	2.6	3.4

PM

	E Young St U-Turn Northbound					E Young St U-Turn Southbound					US-401 Bypass/Louisburg Rd Eastbound					US-401 Bypass/Louisburg Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	227	0	78	305	0	112	0	0	112	417
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	220	0	66	286	0	132	0	0	132	418
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	246	0	53	299	0	118	0	0	118	417
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	219	0	78	297	0	90	0	0	90	387
Total Volume	0	0	0	0	0	0	0	0	0	0	0	912	0	275	1187	0	452	0	0	452	1639
% App. Total	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	76.8	0.0	23.2	100	0.0	100.0	0.0	0.0	100	
PHF															0.973					0.856	0.980
Cars, PU, Vans	0	0	0	0	0	0	0	0	0	0	0	894	0	267	1161	0	443	0	0	443	1604
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	98.0	0.0	97.1	97.8	0.0	98.0	0.0	0.0	98.0	97.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	18	0	8	26	0	9	0	0	9	35
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.9	2.2	0.0	2.0	0.0	0.0	2.0	2.1

Location: E Young St U-Turn & US-401 Bypass/Louisburg Rd
City: Rolesville
Control: Signalized

Project ID: 19-09055-003
Date: 1/29/2019

Bikes

NS/EW Streets:	E Young St U-Turn				E Young St U-Turn				US-401 Bypass/Louisburg Rd				US-401 Bypass/Louisburg Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	06:30 AM - 07:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Location: E Young St U-Turn & US-401 Bypass/Louisburg Rd Project ID: 19-09055-003
City: Rolesville Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	E Young St U-Turn		E Young St U-Turn		US-401 Bypass/Louisburg Rd		US-401 Bypass/Louisburg Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	06:30 AM - 07:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Project ID: 19-09055-004
Location: W Young St U-Turn & US-401 Bypass/Louisburg Rd
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	W Young St U-Turn Northbound						W Young St U-Turn Southbound						US-401 Bypass/Louisburg Rd Eastbound						US-401 Bypass/Louisburg Rd Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	0	0	35	0	274	0	21	0	295	330
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	63	0	0	0	63	0	288	0	24	0	312	375
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	114	0	0	0	114	0	320	0	53	0	373	487
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	191	0	0	0	191	0	324	0	136	0	460	651
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	403	0	0	0	403	0	1206	0	234	0	1440	1843
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	131	0	0	0	131	0	331	0	74	0	405	536
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	117	0	0	0	117	0	289	0	39	0	328	445
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0	0	0	108	0	249	0	58	0	307	415
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	90	0	0	0	90	0	227	0	63	0	290	380
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	446	0	0	0	446	0	1096	0	234	0	1330	1776
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	66	0	0	0	66	0	194	0	44	0	238	304
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	77	0	0	0	77	0	194	0	32	0	226	303
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	72	0	0	0	72	0	226	0	23	0	249	321
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	68	0	0	0	68	0	157	0	40	0	197	265
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0	0	283	0	771	0	139	0	910	1193
BREAK																									
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	251	0	0	0	251	0	118	0	69	0	187	438
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	237	0	0	0	237	0	115	0	74	0	189	426
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	255	0	0	0	255	0	106	0	65	0	171	426
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	276	0	0	0	276	0	124	0	69	0	193	469
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1019	0	0	0	1019	0	463	0	277	0	740	1759
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	237	0	0	0	237	0	118	0	86	0	204	441
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	244	0	0	0	244	0	126	0	51	0	177	421
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	222	0	0	0	222	0	112	0	52	0	164	386
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	235	0	0	0	235	0	89	0	54	0	143	378
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	938	0	0	0	938	0	445	0	243	0	688	1626
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3089	0	0	0	3089	0	3981	0	1127	0	5108	8197
Apprch %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	77.9	0.0	22.1	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.7	0.0	0.0	0.0	37.7	0.0	48.6	0.0	13.7	0.0	62.3	
Cars, PU, Vans	0	0	0	0	0	0	0	0	0		0	0	0	2978	0	0		2978	0	3876	0		0	4960	7938
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.4	0.0	0.0	0.0	96.4	0.0	97.4	0.0	0.0	0.0	97.1	96.8
Heavy Trucks	0	0	0	0		0	0	0	0	0		0	0	111	0	0		111	0	105	0	43		148	259
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0	3.6	0.0	2.6	0.0	3.8	0.0	2.9	3.2

Project ID: 19-09055-004
Location: W Young St U-Turn & US-401 Bypass/Louisburg R
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	W Young St U-Turn Northbound					W Young St U-Turn Southbound					US-401 Bypass/Louisburg Rd Eastbound					US-401 Bypass/Louisburg Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	114	0	0	114	0	320	0	53	373	487
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	191	0	0	191	0	324	0	136	460	651
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	131	0	0	131	0	331	0	74	405	536
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	117	0	0	117	0	289	0	39	328	445
Total Volume	0	0	0	0	0	0	0	0	0	0	0	553	0	0	553	0	1264	0	302	1566	2119
% App. Total	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	100.0	0.0	0.0	100	0.0	80.7	0.0	19.3	100	
PHF															0.724					0.851	0.814
Cars, PU, Vans	0	0	0	0	0	0	0	0	0	0	0	523	0	0	523	0	1234	0	294	1528	2051
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.6	0.0	0.0	94.6	0.0	97.6	0.0	97.4	97.6	96.8
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	30	0	0	30	0	30	0	8	38	68
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	5.4	0.0	2.4	0.0	2.6	2.4	3.2

PM

	W Young St U-Turn Northbound					W Young St U-Turn Southbound					US-401 Bypass/Louisburg Rd Eastbound					US-401 Bypass/Louisburg Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	237	0	0	237	0	115	0	74	189	426
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	255	0	0	255	0	106	0	65	171	426
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	276	0	0	276	0	124	0	69	193	469
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	237	0	0	237	0	118	0	86	204	441
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1005	0	0	1005	0	463	0	294	757	1762
% App. Total	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0	0.0	100.0	0.0	0.0	100	0.0	61.2	0.0	38.8	100	
PHF															0.910					0.928	0.939
Cars, PU, Vans	0	0	0	0	0	0	0	0	0	0	0	977	0	0	977	0	451	0	284	735	1712
% Cars, PU, Vans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.2	0.0	0.0	97.2	0.0	97.4	0.0	96.6	97.1	97.2
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	28	0	0	28	0	12	0	10	22	50
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	2.8	0.0	2.6	0.0	3.4	2.9	2.8

Location: W Young St U-Turn & US-401 Bypass/Louisburg Rd
City: Rolesville
Control: Signalized

Project ID: 19-09055-004
Date: 1/29/2019

Bikes

NS/EW Streets:	W Young St U-Turn				W Young St U-Turn				US-401 Bypass/Louisburg Rd				US-401 Bypass/Louisburg Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	06:30 AM - 07:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Location: W Young St U-Turn & US-401 Bypass/Louisburg Rd Project ID: 19-09055-004
City: Rolesville Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	W Young St U-Turn		W Young St U-Turn		US-401 Bypass/Louisburg Rd		US-401 Bypass/Louisburg Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	06:30 AM - 07:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Project ID: 19-09055-005
Location: Young St/Rolesville Rd & Virginia Water Dr
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Young St/Rolesville Rd Northbound						Young St/Rolesville Rd Southbound						Virginia Water Dr Eastbound						Virginia Water Dr Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	4	18	0	0	0	22	0	43	0	0	0	43	1	0	8	0	0	9	0	0	0	0	0	0	74
6:15 AM	1	33	0	0	0	34	0	47	2	0	0	49	2	0	11	0	0	13	0	0	0	0	0	0	96
6:30 AM	2	49	0	0	0	51	0	78	2	0	0	80	1	0	18	0	0	19	0	0	0	0	0	0	150
6:45 AM	4	56	0	0	0	60	0	150	0	0	0	150	6	0	31	0	0	37	0	0	0	0	0	0	247
Total	11	156	0	0	0	167	0	318	4	0	0	322	10	0	68	0	0	78	0	0	0	0	0	0	567
7:00 AM	5	89	0	0	0	94	0	87	1	0	0	88	3	0	12	0	1	15	0	0	0	0	0	0	197
7:15 AM	8	95	0	0	0	103	0	65	0	0	0	65	6	0	8	0	0	14	0	0	0	0	0	0	182
7:30 AM	7	79	0	0	0	86	0	110	2	0	0	112	7	0	7	0	0	14	0	0	0	0	0	0	212
7:45 AM	6	55	0	0	0	61	0	102	5	0	0	107	5	0	3	0	0	8	0	0	0	0	0	0	176
Total	26	318	0	0	0	344	0	364	8	0	0	372	21	0	30	0	1	51	0	0	0	0	0	0	767
8:00 AM	1	49	0	0	0	50	0	71	3	0	0	74	1	0	5	0	1	6	0	0	0	0	0	0	130
8:15 AM	4	56	0	0	0	60	0	55	4	0	0	59	3	0	2	0	0	5	0	0	0	0	0	0	124
8:30 AM	4	45	0	0	0	49	0	45	1	0	0	46	8	0	9	0	0	17	0	0	0	0	0	0	112
8:45 AM	0	50	0	0	0	50	0	57	6	0	0	63	1	0	3	0	0	4	0	0	0	0	0	0	117
Total	9	200	0	0	0	209	0	228	14	0	0	242	13	0	19	0	1	32	0	0	0	0	0	0	483
BREAK																									
4:00 PM	10	50	0	0	0	60	0	75	5	0	0	80	1	0	8	0	0	9	0	0	0	0	0	0	149
4:15 PM	6	71	1	0	0	78	1	83	9	0	0	93	3	0	10	0	0	13	0	0	0	0	0	0	184
4:30 PM	9	69	0	0	0	78	0	69	2	0	0	71	2	0	4	0	0	6	0	0	2	0	0	2	157
4:45 PM	14	77	0	0	0	91	0	65	5	0	0	70	8	0	8	0	0	16	0	0	0	0	0	0	177
Total	39	267	1	0	0	307	1	292	21	0	0	314	14	0	30	0	0	44	0	0	2	0	0	2	667
5:00 PM	6	77	0	0	0	83	0	100	6	0	0	106	2	0	5	0	0	7	0	0	0	0	0	0	196
5:15 PM	10	63	0	0	0	73	1	56	7	0	0	64	2	0	6	0	0	8	0	0	1	0	0	1	146
5:30 PM	11	84	0	0	0	95	0	69	7	0	0	76	3	0	5	0	0	8	0	0	0	0	0	0	179
5:45 PM	7	79	1	0	0	87	0	52	3	0	0	55	4	0	4	0	0	8	1	0	0	0	0	1	151
Total	34	303	1	0	0	338	1	277	23	0	0	301	11	0	20	0	0	31	1	0	1	0	0	2	672
Grand Total	119	1244	2	0	0	1365	2	1479	70	0	0	1551	69	0	167	0	2	236	1	0	3	0	0	4	3156
Apprch %	8.7	91.1	0.1	0.0	0.0		0.1	95.4	4.5	0.0	0.0		29.2	0.0	70.8	0.0	0.8		25.0	0.0	75.0	0.0	0.0		
Total %	3.8	39.4	0.1	0.0	0.0	43.3	0.1	46.9	2.2	0.0	0.0	49.1	2.2	0.0	5.3	0.0	0.1	7.5	0.0	0.0	0.1	0.0	0.0	0.1	
Cars, PU, Vans	112	1213	2	0	0	1327	2	1436	68		0	1506	66	0	163	0		229	1	0	3		0	4	3066
% Cars, PU, Vans	94.1	97.5	100.0	0.0	0.0	97.2	100.0	97.1	97.1	0.0	0.0	97.1	95.7	0.0	97.6	0.0	0.0	97.0	100.0	0.0	100.0	0.0	0.0	100.0	97.1
Heavy Trucks	7	31	0	0		38	0	43	2	0		45	3	0	4	0		7	0	0	0	0		0	90
%Heavy Trucks	5.9	2.5	0.0	0.0	0.0	2.8	0.0	2.9	2.9	0.0	0.0	2.9	4.3	0.0	2.4	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9

Project ID: 19-09055-005
Location: Young St/Rolesville Rd & Virginia Water Dr
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Virginia Water Dr Eastbound					Virginia Water Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
6:45 AM	4	56	0	0	60	0	150	0	0	150	6	0	31	0	37	0	0	0	0	0	247
7:00 AM	5	89	0	0	94	0	87	1	0	88	3	0	12	0	15	0	0	0	0	0	197
7:15 AM	8	95	0	0	103	0	65	0	0	65	6	0	8	0	14	0	0	0	0	0	182
7:30 AM	7	79	0	0	86	0	110	2	0	112	7	0	7	0	14	0	0	0	0	0	212
Total Volume	24	319	0	0	343	0	412	3	0	415	22	0	58	0	80	0	0	0	0	0	838
% App. Total	7.0	93.0	0.0	0.0	100	0.0	99.3	0.7	0.0	100	27.5	0.0	72.5	0.0	100	0.0	0.0	0.0	0.0	0	
PHF					0.833					0.692					0.541						0.848
Cars, PU, Vans	21	308	0	0	329	0	405	3	0	408	20	0	58	0	78	0	0	0	0	0	815
% Cars, PU, Vans	87.5	96.6	0.0	0.0	95.9	0.0	98.3	100.0	0.0	98.3	90.9	0.0	100.0	0.0	97.5	0.0	0.0	0.0	0.0	0.0	97.3
Heavy Trucks	3	11	0	0	14	0	7	0	0	7	2	0	0	0	2	0	0	0	0	0	23
%Heavy Trucks	12.5	3.4	0.0	0.0	4.1	0.0	1.7	0.0	0.0	1.7	9.1	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.7

PM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Virginia Water Dr Eastbound					Virginia Water Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	6	71	1	0	78	1	83	9	0	93	3	0	10	0	13	0	0	0	0	0	184
4:30 PM	9	69	0	0	78	0	69	2	0	71	2	0	4	0	6	0	0	2	0	2	157
4:45 PM	14	77	0	0	91	0	65	5	0	70	8	0	8	0	16	0	0	0	0	0	177
5:00 PM	6	77	0	0	83	0	100	6	0	106	2	0	5	0	7	0	0	0	0	0	196
Total Volume	35	294	1	0	330	1	317	22	0	340	15	0	27	0	42	0	0	2	0	2	714
% App. Total	10.6	89.1	0.3	0.0	100	0.3	93.2	6.5	0.0	100	35.7	0.0	64.3	0.0	100	0.0	0.0	100.0	0.0	100	
PHF					0.907					0.802					0.656					0.250	0.911
Cars, PU, Vans	34	290	1	0	325	1	305	22	0	328	14	0	25	0	39	0	0	2	0	2	694
% Cars, PU, Vans	97.1	98.6	100.0	0.0	98.5	100.0	96.2	100.0	0.0	96.5	93.3	0.0	92.6	0.0	92.9	0.0	0.0	100.0	0.0	100.0	97.2
Heavy Trucks	1	4	0	0	5	0	12	0	0	12	1	0	2	0	3	0	0	0	0	0	20
%Heavy Trucks	2.9	1.4	0.0	0.0	1.5	0.0	3.8	0.0	0.0	3.5	6.7	0.0	7.4	0.0	7.1	0.0	0.0	0.0	0.0	0.0	2.8

Location: Young St/Rolesville Rd & Virginia Water Dr
City: Rolesville
Control: 1-Way Stop (EB)

Project ID: 19-09055-005
Date: 1/29/2019

Bikes

NS/EW Streets:	Young St/Rolesville Rd				Young St/Rolesville Rd				Virginia Water Dr				Virginia Water Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	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
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	06:45 AM - 07:45 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
	0.250																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Location: Young St/Rolesville Rd & Virginia Water Dr
City: Rolesville

Project ID: 19-09055-005
Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Young St/Rolesville Rd		Young St/Rolesville Rd		Virginia Water Dr		Virginia Water Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	2	2
APPROACH %'s :							0.00%	100.00%	
PEAK HR :	06:45 AM - 07:45 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	1
PEAK HR FACTOR :								0.250	0.250
							0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Project ID: 19-09055-006
Location: Genovesa Dr & Virginia Water Dr
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Genovesa Dr Northbound						Genovesa Dr Southbound						Virginia Water Dr Eastbound						Virginia Water Dr Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	1	0	0	0	1	4
6:15 AM	0	0	0	0	0	0	1	0	1	0	1	2	0	6	0	0	0	6	0	2	0	0	0	2	10
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	0	5	0	0	0	5	15
6:45 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	18	0	0	0	18	0	4	0	0	0	4	23
Total	0	0	2	0	0	2	1	0	1	0	1	2	0	36	0	0	0	36	0	12	0	0	0	12	52
7:00 AM	0	0	1	0	0	1	0	0	1	0	0	1	0	6	0	0	0	6	1	3	0	0	0	4	12
7:15 AM	1	0	1	0	0	2	1	0	2	0	1	3	1	6	0	0	0	7	0	10	0	0	0	10	22
7:30 AM	1	0	1	0	1	2	0	0	1	0	0	1	1	6	0	0	0	7	2	8	0	0	0	10	20
7:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	1	1	8	0	0	0	9	10
Total	2	0	3	0	2	5	1	0	4	0	2	5	2	19	0	0	0	21	4	29	0	0	0	33	64
8:00 AM	0	0	0	0	0	0	1	0	1	0	0	2	0	3	0	0	0	3	0	5	0	0	0	5	10
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	1	0	0	2	2	4
8:30 AM	0	1	0	0	0	1	0	0	1	0	0	1	1	7	0	0	0	8	0	8	0	0	0	8	18
8:45 AM	1	0	0	0	0	1	1	0	0	0	0	1	0	5	0	0	0	5	0	4	0	0	0	4	11
Total	1	1	0	0	0	2	2	0	2	0	0	4	1	17	0	0	0	18	1	18	0	0	2	19	43
BREAK																									
4:00 PM	2	0	1	0	2	3	0	0	0	0	0	0	1	9	1	0	0	11	0	10	0	0	0	10	24
4:15 PM	0	0	2	0	0	2	0	0	1	0	0	1	0	12	1	0	0	13	1	5	2	0	0	8	24
4:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	5	0	8	1	0	0	9	15
4:45 PM	0	0	3	0	0	3	0	0	0	0	0	0	0	11	0	0	0	11	3	7	0	0	0	10	24
Total	3	0	6	0	2	9	0	0	1	0	0	1	1	37	2	0	0	40	4	30	3	0	0	37	87
5:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	2	5	0	1	0	8	2	3	1	0	0	6	15
5:15 PM	2	0	0	0	0	2	0	0	0	0	0	0	0	6	1	0	0	7	1	1	0	0	0	2	11
5:30 PM	1	0	0	0	0	1	1	0	0	0	0	1	1	4	0	0	0	5	0	12	0	0	0	12	19
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	8	0	5	1	0	0	6	14
Total	3	0	1	0	0	4	1	0	0	0	0	1	3	22	2	1	0	28	3	21	2	0	0	26	59
Grand Total	9	1	12	0	4	22	5	0	8	0	3	13	7	131	4	1	0	143	12	110	5	0	2	127	305
Apprch %	40.9	4.5	54.5	0.0	18.2		38.5	0.0	61.5	0.0	23.1		4.9	91.6	2.8	0.7	0.0		9.4	86.6	3.9	0.0	1.6		
Total %	3.0	0.3	3.9	0.0	1.3	7.2	1.6	0.0	2.6	0.0	1.0	4.3	2.3	43.0	1.3	0.3	0.0	46.9	3.9	36.1	1.6	0.0	0.7	41.6	
Cars, PU, Vans	9	0	10	0	4	19	5	0	7		3	12	7	128	3	1		139	10	105	5		2	120	290
% Cars, PU, Vans	100.0	0.0	83.3	0.0	100.0	86.4	100.0	0.0	87.5	0.0	100.0	92.3	100.0	97.7	75.0	100.0	0.0	97.2	83.3	95.5	100.0	0.0	100.0	94.5	95.1
Heavy Trucks	0	1	2	0		3	0	0	1	0		1	0	3	1	0		4	2	5	0	0		7	15
%Heavy Trucks	0.0	100.0	16.7	0.0	0.0	13.6	0.0	0.0	12.5	0.0	0.0	7.7	0.0	2.3	25.0	0.0	0.0	2.8	16.7	4.5	0.0	0.0	0.0	5.5	4.9

Project ID: 19-09055-006
Location: Genovesa Dr & Virginia Water Dr
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	Genovesa Dr Northbound					Genovesa Dr Southbound					Virginia Water Dr Eastbound					Virginia Water Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
6:45 AM	0	0	1	0	1	0	0	0	0	0	0	18	0	0	18	0	4	0	0	4	23
7:00 AM	0	0	1	0	1	0	0	1	0	1	0	6	0	0	6	1	3	0	0	4	12
7:15 AM	1	0	1	0	2	1	0	2	0	3	1	6	0	0	7	0	10	0	0	10	22
7:30 AM	1	0	1	0	2	0	0	1	0	1	1	6	0	0	7	2	8	0	0	10	20
Total Volume	2	0	4	0	6	1	0	4	0	5	2	36	0	0	38	3	25	0	0	28	77
% App. Total	33.3	0.0	66.7	0.0	100	20.0	0.0	80.0	0.0	100	5.3	94.7	0.0	0.0	100	10.7	89.3	0.0	0.0	100	
PHF					0.750					0.417					0.528					0.700	0.837
Cars, PU, Vans	2	0	4	0	6	1	0	4	0	5	2	35	0	0	37	3	24	0	0	27	75
% Cars, PU, Vans	100.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	97.2	0.0	0.0	97.4	100.0	96.0	0.0	0.0	96.4	97.4
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	2.6	0.0	4.0	0.0	0.0	3.6	2.6

PM

	Genovesa Dr Northbound					Genovesa Dr Southbound					Virginia Water Dr Eastbound					Virginia Water Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
4:00 PM	2	0	1	0	3	0	0	0	0	0	1	9	1	0	11	0	10	0	0	10	24
4:15 PM	0	0	2	0	2	0	0	1	0	1	0	12	1	0	13	1	5	2	0	8	24
4:30 PM	1	0	0	0	1	0	0	0	0	0	0	5	0	0	5	0	8	1	0	9	15
4:45 PM	0	0	3	0	3	0	0	0	0	0	0	11	0	0	11	3	7	0	0	10	24
Total Volume	3	0	6	0	9	0	0	1	0	1	1	37	2	0	40	4	30	3	0	37	87
% App. Total	33.3	0.0	66.7	0.0	100	0.0	0.0	100.0	0.0	100	2.5	92.5	5.0	0.0	100	10.8	81.1	8.1	0.0	100	
PHF					0.750					0.250					0.769					0.925	0.906
Cars, PU, Vans	3	0	4	0	7	0	0	1	0	1	1	35	1	0	37	3	30	3	0	36	81
% Cars, PU, Vans	100.0	0.0	66.7	0.0	77.8	0.0	0.0	100.0	0.0	100.0	100.0	94.6	50.0	0.0	92.5	75.0	100.0	100.0	0.0	97.3	93.1
Heavy Trucks	0	0	2	0	2	0	0	0	0	0	0	2	1	0	3	1	0	0	0	1	6
%Heavy Trucks	0.0	0.0	33.3	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	5.4	50.0	0.0	7.5	25.0	0.0	0.0	0.0	2.7	6.9

Location: Genovesa Dr & Virginia Water Dr
City: Rolesville
Control: 2-Way Stop (NB/SB)

Project ID: 19-09055-006
Date: 1/29/2019

Bikes

NS/EW Streets:	Genovesa Dr				Genovesa Dr				Virginia Water Dr				Virginia Water Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	06:45 AM - 07:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250
														0.250			

Location: Genovesa Dr & Virginia Water Dr
City: Rolesville

Project ID: 19-09055-006
Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Genovesa Dr		Genovesa Dr		Virginia Water Dr		Virginia Water Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	1	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	1
7:30 AM	0	0	1	0	0	0	0	0	1
7:45 AM	1	0	0	1	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	2	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	1	1	1	2	0	0	0	7
APPROACH %'s :	66.67%	33.33%	50.00%	50.00%	100.00%	0.00%			
PEAK HR :	06:45 AM - 07:45 AM								TOTAL
PEAK HR VOL :	0	1	1	0	0	0	0	0	2
PEAK HR FACTOR :		0.250	0.250						0.500
	0.250		0.250						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	2	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	2	0	0	0	0	2
APPROACH %'s :			0.00%	100.00%					
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	0	2	0	0	0	0	2
PEAK HR FACTOR :				0.250					0.250
			0.250						

Project ID: 19-09055-007
Location: Young St/Rolesville Rd & Century Farm Rd
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Young St/Rolesville Rd Northbound						Young St/Rolesville Rd Southbound						Century Farm Rd Eastbound						Century Farm Rd Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	38	0	0	0	38	0	38	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	76
6:15 AM	0	40	1	0	0	41	0	62	0	0	0	62	0	0	0	0	0	0	1	0	0	0	0	1	104
6:30 AM	0	64	0	0	0	64	0	150	0	0	0	150	0	0	0	0	0	0	1	0	2	0	0	3	217
6:45 AM	0	110	0	1	0	111	0	304	0	0	0	304	0	0	0	0	0	0	0	0	3	0	0	3	418
Total	0	252	1	1	0	254	0	554	0	0	0	554	0	0	0	0	0	0	2	0	5	0	0	7	815
7:00 AM	0	161	0	0	0	161	0	172	0	0	0	172	0	0	0	0	0	0	0	0	0	0	0	0	333
7:15 AM	0	146	1	0	0	147	0	76	0	0	0	76	0	0	0	0	0	0	0	0	0	0	0	0	223
7:30 AM	0	91	0	0	0	91	0	93	0	0	0	93	0	0	0	0	0	0	0	0	1	0	0	1	185
7:45 AM	0	59	0	0	0	59	1	102	0	0	0	103	0	0	0	0	0	0	1	0	1	0	0	2	164
Total	0	457	1	0	0	458	1	443	0	0	0	444	0	0	0	0	0	0	1	0	2	0	0	3	905
8:00 AM	0	52	0	0	0	52	0	62	0	0	0	62	0	0	0	0	0	0	0	0	1	0	0	1	115
8:15 AM	0	56	0	0	0	56	1	47	0	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	104
8:30 AM	0	63	0	0	0	63	0	40	0	0	0	40	0	0	0	0	0	0	0	0	1	0	0	1	104
8:45 AM	0	60	0	0	0	60	0	60	0	0	0	60	0	0	0	0	0	0	0	0	1	0	0	1	121
Total	0	231	0	0	0	231	1	209	0	0	0	210	0	0	0	0	0	0	0	0	3	0	0	3	444
BREAK																									
4:00 PM	0	71	1	0	0	72	1	106	0	0	0	107	0	0	0	0	0	0	0	0	0	0	0	0	179
4:15 PM	0	69	1	0	0	70	3	98	0	0	0	101	0	0	0	0	0	0	1	0	0	0	0	1	172
4:30 PM	0	82	1	0	0	83	0	131	0	0	0	131	0	0	0	0	0	0	0	0	0	0	0	0	214
4:45 PM	0	99	0	0	0	99	1	125	0	0	0	126	0	0	0	0	0	0	1	0	0	0	0	1	226
Total	0	321	3	0	0	324	5	460	0	0	0	465	0	0	0	0	0	0	2	0	0	0	0	2	791
5:00 PM	0	86	0	0	0	86	3	107	0	0	0	110	0	0	0	0	0	0	0	0	1	0	0	1	197
5:15 PM	0	81	0	0	0	81	1	85	0	0	0	86	0	0	0	0	0	0	0	0	1	0	0	1	168
5:30 PM	0	117	0	0	0	117	0	81	0	0	0	81	0	0	0	0	0	0	0	0	1	0	0	1	199
5:45 PM	0	62	2	0	0	64	2	74	0	0	0	76	0	0	0	0	0	0	0	0	0	0	0	0	140
Total	0	346	2	0	0	348	6	347	0	0	0	353	0	0	0	0	0	0	0	0	3	0	0	3	704
Grand Total	0	1607	7	1	0	1615	13	2013	0	0	0	2026	0	0	0	0	0	0	5	0	13	0	0	18	3659
Apprch %	0.0	99.5	0.4	0.1	0.0		0.6	99.4	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		27.8	0.0	72.2	0.0	0.0		
Total %	0.0	43.9	0.2	0.0	0.0	44.1	0.4	55.0	0.0	0.0	0.0	55.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.5	
Cars, PU, Vans	0	1537	7	1	0	1545	13	1916	0		0	1929	0	0	0	0		0	5	0	13		0	18	3492
% Cars, PU, Vans	0.0	95.6	100.0	100.0	0.0	95.7	100.0	95.2	0.0	0.0	0.0	95.2	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	100.0	95.4
Heavy Trucks	0	70	0	0		70	0	97	0	0		97	0	0	0	0	0	0	0	0	0	0		0	167
%Heavy Trucks	0.0	4.4	0.0	0.0	0.0	4.3	0.0	4.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6

Project ID: 19-09055-007
Location: Young St/Rolesville Rd & Century Farm Rd
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Century Farm Rd Eastbound					Century Farm Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
6:30 AM	0	64	0	0	64	0	150	0	0	150	0	0	0	0	0	1	0	2	0	3	217
6:45 AM	0	110	0	1	111	0	304	0	0	304	0	0	0	0	0	0	0	3	0	3	418
7:00 AM	0	161	0	0	161	0	172	0	0	172	0	0	0	0	0	0	0	0	0	0	333
7:15 AM	0	146	1	0	147	0	76	0	0	76	0	0	0	0	0	0	0	0	0	0	223
Total Volume	0	481	1	1	483	0	702	0	0	702	0	0	0	0	0	1	0	5	0	6	1191
% App. Total	0.0	99.6	0.2	0.2	100	0.0	100.0	0.0	0.0	100	0.0	0.0	0.0	0.0	0	16.7	0.0	83.3	0.0	100	
PHF					0.750					0.577										0.500	0.712
Cars, PU, Vans	0	450	1	1	452	0	664	0	0	664	0	0	0	0	0	1	0	5	0	6	1122
% Cars, PU, Vans	0.0	93.6	100.0	100.0	93.6	0.0	94.6	0.0	0.0	94.6	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	94.2
Heavy Trucks	0	31	0	0	31	0	38	0	0	38	0	0	0	0	0	0	0	0	0	0	69
%Heavy Trucks	0.0	6.4	0.0	0.0	6.4	0.0	5.4	0.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8

PM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Century Farm Rd Eastbound					Century Farm Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	0	69	1	0	70	3	98	0	0	101	0	0	0	0	0	1	0	0	0	1	172
4:30 PM	0	82	1	0	83	0	131	0	0	131	0	0	0	0	0	0	0	0	0	0	214
4:45 PM	0	99	0	0	99	1	125	0	0	126	0	0	0	0	0	1	0	0	0	1	226
5:00 PM	0	86	0	0	86	3	107	0	0	110	0	0	0	0	0	0	0	1	0	1	197
Total Volume	0	336	2	0	338	7	461	0	0	468	0	0	0	0	0	2	0	1	0	3	809
% App. Total	0.0	99.4	0.6	0.0	100	1.5	98.5	0.0	0.0	100	0.0	0.0	0.0	0.0	0	66.7	0.0	33.3	0.0	100	
PHF					0.854					0.893										0.750	0.895
Cars, PU, Vans	0	329	2	0	331	7	438	0	0	445	0	0	0	0	0	2	0	1	0	3	779
% Cars, PU, Vans	0.0	97.9	100.0	0.0	97.9	100.0	95.0	0.0	0.0	95.1	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	96.3
Heavy Trucks	0	7	0	0	7	0	23	0	0	23	0	0	0	0	0	0	0	0	0	0	30
%Heavy Trucks	0.0	2.1	0.0	0.0	2.1	0.0	5.0	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7

Location: Young St/Rolesville Rd & Century Farm Rd
City: Rolesville
Control: 1-Way Stop (WB)

Project ID: 19-09055-007
Date: 1/29/2019

Bikes

NS/EW Streets:	Young St/Rolesville Rd				Young St/Rolesville Rd				Century Farm Rd				Century Farm Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	06:30 AM - 07:30 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
	0.250																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Location: Young St/Rolesville Rd & Century Farm Rd
City: Rolesville

Project ID: 19-09055-007
Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Young St/Rolesville Rd		Young St/Rolesville Rd		Century Farm Rd		Century Farm Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	06:30 AM - 07:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Project ID: 19-09055-008
Location: Young St/Rolesville Rd & Quarry Rd
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Young St/Rolesville Rd Northbound						Young St/Rolesville Rd Southbound						Quarry Rd Eastbound						Quarry Rd Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	21	1	0	0	22	9	28	0	0	0	37	0	0	0	0	0	0	7	0	17	0	0	24	83
6:15 AM	0	32	4	0	0	36	18	42	0	0	0	60	0	0	0	0	0	0	2	0	9	0	0	11	107
6:30 AM	0	38	15	0	0	53	58	93	0	0	0	151	0	0	0	0	0	0	5	0	27	0	0	32	236
6:45 AM	0	78	17	0	0	95	57	238	0	0	0	295	0	0	0	0	0	0	5	0	33	0	0	38	428
Total	0	169	37	0	0	206	142	401	0	0	0	543	0	0	0	0	0	0	19	0	86	0	0	105	854
7:00 AM	0	112	15	0	0	127	59	125	0	0	0	184	0	0	0	0	0	0	11	0	48	0	0	59	370
7:15 AM	0	116	3	0	0	119	15	61	0	0	0	76	0	0	0	0	0	0	6	0	31	0	0	37	232
7:30 AM	0	79	1	0	0	80	7	81	0	0	0	88	0	0	0	0	0	0	3	0	12	0	0	15	183
7:45 AM	0	44	0	0	0	44	6	99	0	0	0	105	0	0	0	0	0	0	0	0	16	0	0	16	165
Total	0	351	19	0	0	370	87	366	0	0	0	453	0	0	0	0	0	0	20	0	107	0	0	127	950
8:00 AM	0	38	1	0	0	39	14	50	0	0	0	64	0	0	0	0	0	0	1	0	13	0	0	14	117
8:15 AM	0	43	1	0	0	44	2	44	0	0	0	46	0	0	0	0	0	0	3	0	13	0	0	16	106
8:30 AM	0	40	0	0	0	40	4	38	0	0	0	42	0	0	0	0	0	0	2	0	23	0	0	25	107
8:45 AM	0	45	5	0	0	50	17	40	0	0	0	57	0	0	0	0	0	0	1	0	15	0	0	16	123
Total	0	166	7	0	0	173	37	172	0	0	0	209	0	0	0	0	0	0	7	0	64	0	0	71	453
9:00 AM	0	38	1	0	0	39	19	40	0	0	0	59	0	0	0	0	0	0	1	0	9	0	0	10	108
9:15 AM	0	31	3	0	0	34	14	31	0	0	0	45	0	0	0	0	0	0	0	0	8	0	0	8	87
9:30 AM	0	42	0	0	0	42	13	24	0	0	0	37	0	0	0	0	0	0	2	0	14	0	0	16	95
9:45 AM	0	21	1	0	0	22	6	32	0	0	0	38	0	0	0	0	0	0	4	0	12	0	0	16	76
Total	0	132	5	0	0	137	52	127	0	0	0	179	0	0	0	0	0	0	7	0	43	0	0	50	366
BREAK																									
10:00 AM	0	23	2	0	0	25	8	28	0	0	0	36	0	0	0	0	0	0	2	0	10	0	0	12	73
10:15 AM	0	24	0	0	0	24	8	26	0	0	0	34	0	0	0	0	0	0	1	0	8	0	0	9	67
10:30 AM	0	90	1	0	0	91	4	24	0	0	0	28	0	0	0	0	0	0	1	0	9	0	0	10	129
10:45 AM	0	20	3	0	0	23	10	62	0	0	0	72	0	0	0	0	0	0	3	0	7	0	0	10	105
Total	0	157	6	0	0	163	30	140	0	0	0	170	0	0	0	0	0	0	7	0	34	0	0	41	374
11:00 AM	0	34	1	0	0	35	10	36	0	0	0	46	0	0	0	0	0	0	5	0	18	0	0	23	104
11:15 AM	0	28	0	0	0	28	7	19	0	0	0	26	0	0	0	0	0	0	0	0	10	1	0	11	65
11:30 AM	0	27	4	0	0	31	7	27	0	0	0	34	0	0	0	0	0	0	0	0	5	0	0	5	70
11:45 AM	0	28	1	0	0	29	10	30	0	0	0	40	0	0	0	0	0	0	0	0	7	0	0	7	76
Total	0	117	6	0	0	123	34	112	0	0	0	146	0	0	0	0	0	0	5	0	40	1	0	46	315
12:00 PM	0	64	2	0	0	66	13	31	0	0	0	44	0	0	0	0	0	0	3	0	6	0	0	9	119
12:15 PM	0	36	1	1	0	38	8	39	0	0	0	47	0	0	0	0	0	0	1	0	13	0	0	14	99
12:30 PM	0	37	4	0	0	41	13	54	0	0	0	67	0	0	0	0	0	0	4	0	7	0	0	11	119
12:45 PM	0	47	0	0	0	47	11	33	0	0	0	44	0	0	0	0	0	0	1	0	4	0	0	5	96
Total	0	184	7	1	0	192	45	157	0	0	0	202	0	0	0	0	0	0	9	0	30	0	0	39	433
1:00 PM	0	32	2	0	0	34	11	33	0	0	0	44	0	0	0	0	0	0	2	0	12	0	0	14	92
1:15 PM	0	37	0	0	0	37	10	48	0	0	0	58	0	0	0	0	0	0	6	0	14	0	0	20	115
1:30 PM	0	29	10	0	0	39	20	35	0	0	0	55	0	0	0	0	0	0	3	0	12	0	0	15	109
1:45 PM	0	29	3	0	0	32	19	44	0	0	0	63	0	0	0	0	0	0	2	0	7	0	0	9	104
Total	0	127	15	0	0	142	60	160	0	0	0	220	0	0	0	0	0	0	13	0	45	0	0	58	420
BREAK																									
2:00 PM	0	33	3	0	0	36	9	40	0	0	0	49	0	0	0	0	0	0	3	0	16	0	0	19	104
2:15 PM	0	159	4	0	0	163	15	47	0	0	0	62	0	0	0	0	0	0	15	0	54	0	0	69	294
2:30 PM	0	108	6	0	0	114	17	49	0	0	0	66	0	0	0	0	0	0	5	0	20	0	0	25	205
2:45 PM	0	57	3	0	0	60	16	43	0	0	0	59	0	0	0	0	0	0	8	0	28	0	0	36	155
Total	0	357	16	0	0	373	57	179	0	0	0	236	0	0	0	0	0	0	31	0	118	0	0	149	758
3:00 PM	0	37	3	0	0	40	11	58	0	0	0	69	0	0	0	0	0	0	3	0	20	0	0	23	132
3:15 PM	0	55	1	0	0	56	15	69	0	0	0	84	0	0	0	0	0	0	5	0	15	0	0	20	160
3:30 PM	0	55	1	0	0	56	22	50	0	0	0	72	0	0	0	0	0	0	9	0	18	0	0	27	155
3:45 PM	0	51	0	0	0	51	18	93	0	0	0	111	0	0	0	0	0	0	2	0	12	0	0	14	176
Total	0	198	5	0	0	203	66	270	0	0	0	336	0	0	0	0	0	0	19	0	65	0	0	84	623
4:00 PM	0	54	5	0	0	59	29	72	0	0	0	101	0	0	0	0	0	0	3	0	17	0	0	20	180
4:15 PM	0	57	6	0	0	63	27	75	0	0	0	102	0	0	0	0	0	0	3	0	11	0	0	14	179
4:30 PM	0	55	4	0	0	59	42	91	0	0	0	133	0	0	0	0	0	0	8	0	30	0	0	38	230
4:45 PM	0	71	4	0	0	75	31	90	0	0	0	121	0	0	0	0	0	0	8	0	24	0	0	32	228
Total	0	237	19	0	0	256	129	328	0	0	0	457	0	0	0	0	0	0	22	0	82	0	0	104	817
5:00 PM	0	76	3	0	0	79	20	93	0	0	0	113	0	0	0	0	0	0	6	0	13	0	0	19	211
5:15 PM	0	61	2	0	0	63	21	60	0	0	0	81	0	0	0	0	0	0	3	0	17	0	0	20	164
5:30 PM	0	111	2	0	0	113	19	62	0	0	0	81	0	0	0	0	0	0	4	0	8	0	0	12	206
5:45 PM	0	55	0	0	0	55	14	65	0	0	0	79	0	0	0	0	0	0	3	0	10	0	0	13	147
Total	0	303	7	0	0	310	74	280	0	0	0	354	0	0	0	0	0	0	16	0	48	0	0	64	728
6:00 PM	0	51	1	0	0	52	14	52	0	0	0	66	0	0	0	0	0	0	4	0	7	0	0	11	129
6:15 PM	0	50	2	0	0	52	16	46	0	0	0	62	0	0	0	0	0	0	1	0	7	0	0	8	122
6:30 PM	0	52	3	0	0	55	16	43	0	0	0	59	0	0	0	0	0	0	4	0	11	0	0	15	129
6:45 PM	0	40	0	0	0	40	20	37	0	0	0	57	0	0	0	0	0	0	1	0	16	0	0	17	114
Total	0	193	6	0	0	199	66	178	0	0	0	244	0	0	0	0	0	0	10	0	41	0	0	51	494
7:00 PM	0	22	2	0	0	24	11	20	0	0	0	31	0	0	0	0	0	0	3	0	12	0	0	15	70
7:15 PM	0	19	2	0	0	21	10	16	0	0	0	26	0	0	0	0	0	0	2	0	9	0	0	11	58
7:30 PM	0	20	1	0	0	21	8	19	0	0	0	27	0	0	0	0	0	0	1	0	6	0	0	7	55
7:45 PM	0	14	0	0	0	14	7	20	0	0	0	27	0	0	0	0	0	0	0	0	7	0	0	7	48
Total	0	75	5	0	0	80	36	75	0	0	0	111	0	0	0	0	0	0	6	0	34	0	0	40	231
Grand Total	0	2766	160	1	0	2927	915	2945	0	0	0	3860	0	0	0	0	0	0	191	0	837	1	0	1029	7816
Apprch %	0.0	94.5	5.5	0.0	0.0		23.7	76.3	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		18.6	0.0	81.3	0.1	0.0		
Total %	0.0	35.4	2.0	0.0	0.0	37.4	11.7	37.7	0.0	0.0	0.0	49.4	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	10.7	0.0	0.0	13.2	
Cars, PU, Vans	0	2697	126	1	0	2824	800	2846	0		0	3646	0	0	0	0		0	145	0	755		0	901	7371
% Cars, PU, Vans	0.0	97.5	78.8	100.0	0.0	96.5	87.4	96.6	0.0	0.0	0.0	94.5	0.0	0.0	0.0	0.0	0.0	0.0	75.9	0.0	90.2	0.0	0.0	87.6	94.3
Heavy Trucks	0	69	34	0		103	115	99	0	0		214	0	0	0	0		0	46	0	82	0		128	445
%Heavy Trucks	0.0	2.5	21.3	0.0	0.0	3.5	12.6	3.4	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	24.1	0.0	9.8	0.0	0.0	12.4	5.7

Project ID: 19-09055-008
Location: Young St/Rolesville Rd & Quarry Rd
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Quarry Rd Eastbound					Quarry Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
6:30 AM	0	38	15	0	53	58	93	0	0	151	0	0	0	0	0	5	0	27	0	32	236
6:45 AM	0	78	17	0	95	57	238	0	0	295	0	0	0	0	0	5	0	33	0	38	428
7:00 AM	0	112	15	0	127	59	125	0	0	184	0	0	0	0	0	11	0	48	0	59	370
7:15 AM	0	116	3	0	119	15	61	0	0	76	0	0	0	0	0	6	0	31	0	37	232
Total Volume	0	344	50	0	394	189	517	0	0	706	0	0	0	0	0	27	0	139	0	166	1266
% App. Total	0.0	87.3	12.7	0.0	100	26.8	73.2	0.0	0.0	100	0.0	0.0	0.0	0.0	0	16.3	0.0	83.7	0.0	100	
PHF					0.776					0.598										0.703	0.739
Cars, PU, Vans	0	335	44	0	379	156	512	0	0	668	0	0	0	0	0	15	0	117	0	132	1179
% Cars, PU, Vans	0.0	97.4	88.0	0.0	96.2	82.5	99.0	0.0	0.0	94.6	0.0	0.0	0.0	0.0	0.0	55.6	0.0	84.2	0.0	79.5	93.1
Heavy Trucks	0	9	6	0	15	33	5	0	0	38	0	0	0	0	0	12	0	22	0	34	87
%Heavy Trucks	0.0	2.6	12.0	0.0	3.8	17.5	1.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	44.4	0.0	15.8	0.0	20.5	6.9

NOON

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Quarry Rd Eastbound					Quarry Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 10:00 AM to 02:00 PM																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	64	2	0	66	13	31	0	0	44	0	0	0	0	0	3	0	6	0	9	119
12:15 PM	0	36	1	1	38	8	39	0	0	47	0	0	0	0	0	1	0	13	0	14	99
12:30 PM	0	37	4	0	41	13	54	0	0	67	0	0	0	0	0	4	0	7	0	11	119
12:45 PM	0	47	0	0	47	11	33	0	0	44	0	0	0	0	0	1	0	4	0	5	96
Total Volume	0	184	7	1	192	45	157	0	0	202	0	0	0	0	0	9	0	30	0	39	433
% App. Total	0.0	95.8	3.6	0.5	100	22.3	77.7	0.0	0.0	100	0.0	0.0	0.0	0.0	0	23.1	0.0	76.9	0.0	100	
PHF					0.727					0.754										0.696	0.910
Cars, PU, Vans	0	176	5	1	182	43	150	0	0	193	0	0	0	0	0	9	0	27	0	36	411
% Cars, PU, Vans	0.0	95.7	71.4	100.0	94.8	95.6	95.5	0.0	0.0	95.5	0.0	0.0	0.0	0.0	0.0	100.0	0.0	90.0	0.0	92.3	94.9
Heavy Trucks	0	8	2	0	10	2	7	0	0	9	0	0	0	0	0	0	0	3	0	3	22
%Heavy Trucks	0.0	4.3	28.6	0.0	5.2	4.4	4.5	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	7.7	5.1

PM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Quarry Rd Eastbound					Quarry Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 02:00 PM to 08:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	0	57	6	0	63	27	75	0	0	102	0	0	0	0	0	3	0	11	0	14	179
4:30 PM	0	55	4	0	59	42	91	0	0	133	0	0	0	0	0	8	0	30	0	38	230
4:45 PM	0	71	4	0	75	31	90	0	0	121	0	0	0	0	0	8	0	24	0	32	228
5:00 PM	0	76	3	0	79	20	93	0	0	113	0	0	0	0	0	6	0	13	0	19	211
Total Volume	0	259	17	0	276	120	349	0	0	469	0	0	0	0	0	25	0	78	0	103	848
% App. Total	0.0	93.8	6.2	0.0	100	25.6	74.4	0.0	0.0	100	0.0	0.0	0.0	0.0	0	24.3	0.0	75.7	0.0	100	
PHF					0.873					0.882										0.678	0.922
Cars, PU, Vans	0	254	11	0	265	106	340	0	0	446	0	0	0	0	0	22	0	76	0	98	809
% Cars, PU, Vans	0.0	98.1	64.7	0.0	96.0	88.3	97.4	0.0	0.0	95.1	0.0	0.0	0.0	0.0	0.0	88.0	0.0	97.4	0.0	95.1	95.4
Heavy Trucks	0	5	6	0	11	14	9	0	0	23	0	0	0	0	0	3	0	2	0	5	39
%Heavy Trucks	0.0	1.9	35.3	0.0	4.0	11.7	2.6	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0	12.0	0.0	2.6	0.0	4.9	4.6

Rolesville Road and /Quarry Road AM and PM Peak Hour Traffic Count

Count Performed: Saturday, January 0, 1900

Start Time	Rolesville Road Southbound			Quarry Road Westbound			Rolesville Road Northbound			Intersection Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14:00	9	40	0	3	0	16	0	33	3	104
14:15	15	47	0	15	0	54	0	159	4	294
14:30	17	49	0	5	0	20	0	108	6	205
14:45	16	43	0	8	0	28	0	57	3	155
15:00	11	58	0	3	0	20	0	37	3	132
15:15	15	69	0	5	0	15	0	55	1	160
15:30	22	50	0	9	0	18	0	55	1	155
15:45	18	93	0	2	0	12	0	51	0	176

Peak Hour	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	Volume
14:00 - 15:00	57	179	0	31	0	118	0	357	16	758
14:15 - 15:15	59	197	0	31	0	122	0	361	16	786
14:30 - 15:30	59	219	0	21	0	83	0	257	13	652
14:45 - 15:45	64	220	0	25	0	81	0	204	8	602
15:00 - 16:00	66	270	0	19	0	65	0	198	5	623

Peak-Hour Traffic Volumes										
Peak Hour	NBL	NBT	NBR	SBL	SBT	SBR	WBL	WBT	WBR	Volume
14:15 - 15:15	0	361	16	59	197	0	31	0	122	786

Peak-Hour Factor by Movement										
Peak Hour	NBL	NBT	NBR	SBL	SBT	SBR	WBL	WBT	WBR	PHF
14:15 - 15:15	-	0.568	0.667	0.868	0.849	-	-	-	-	0.668

Heavy Vehicle Percentage by Approach				
Peak Hour	NB	SB	WB	%HV
14:15 - 15:15	2%	8%	25%	9%

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Location: Young St/Rolesville Rd & Quarry Rd
City: Rolesville
Control: 1-Way Stop (WB)

Project ID: 19-09055-008
Date: 1/29/2019

Bikes

NS/EW Streets:	Young St/Rolesville Rd				Young St/Rolesville Rd				Quarry Rd				Quarry Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	06:30 AM - 07:30 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
		0.250															

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	12:00 PM - 01:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%									
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Location: Young St/Rolesville Rd & Quarry Rd
City: Rolesville

Project ID: 19-09055-008
Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Young St/Rolesville Rd		Young St/Rolesville Rd		Quarry Rd		Quarry Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	06:30 AM - 07:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

NOON	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
10:00 AM	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	12:00 PM - 01:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
2:00 PM	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Project ID: 19-09055-009
Location: Young St/Rolesville Rd & Rolesville High School Dwy
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Young St/Rolesville Rd Northbound						Young St/Rolesville Rd Southbound						Rolesville High School Dwy Eastbound						Rolesville High School Dwy Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	0	21	2	0	0	23	4	31	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	58
6:15 AM	0	36	4	0	0	40	13	31	0	0	0	44	0	0	0	0	0	0	1	0	0	0	0	1	85
6:30 AM	0	46	13	0	0	59	38	55	0	0	0	93	0	0	0	0	0	0	3	0	8	0	0	11	163
6:45 AM	0	50	66	0	0	116	168	42	0	0	0	210	0	0	0	0	0	0	17	0	55	0	0	72	398
Total	0	153	85	0	0	238	223	159	0	0	0	382	0	0	0	0	0	0	21	0	63	0	0	84	704
7:00 AM	0	37	136	0	0	173	108	62	0	0	0	170	0	0	0	0	0	0	36	0	88	0	0	124	467
7:15 AM	0	68	10	0	0	78	16	53	0	0	0	69	0	0	0	0	0	0	35	0	46	0	0	81	228
7:30 AM	0	78	1	0	0	79	7	74	0	0	0	81	0	0	0	0	0	0	3	0	6	0	0	9	169
7:45 AM	0	40	1	0	0	41	4	96	0	0	0	100	0	0	0	0	0	0	1	0	0	0	0	1	142
Total	0	223	148	0	0	371	135	285	0	0	0	420	0	0	0	0	0	0	75	0	140	0	0	215	1006
8:00 AM	0	38	2	0	0	40	0	50	0	0	0	50	0	0	0	0	0	0	0	0	3	0	0	3	93
8:15 AM	0	43	0	0	0	43	3	44	0	0	0	47	0	0	0	0	0	0	1	0	2	0	0	3	93
8:30 AM	0	34	3	0	0	37	6	31	0	0	0	37	0	0	0	0	0	0	0	0	4	0	0	4	78
8:45 AM	0	42	1	0	0	43	9	34	0	0	0	43	0	0	0	0	0	0	1	0	8	0	0	9	95
Total	0	157	6	0	0	163	18	159	0	0	0	177	0	0	0	0	0	0	2	0	17	0	0	19	359
BREAK																									
4:00 PM	0	30	7	0	0	37	14	60	0	0	0	74	0	0	0	0	0	0	7	0	26	0	0	33	144
4:15 PM	0	46	4	0	0	50	18	60	0	0	0	78	0	0	0	0	0	0	2	0	18	0	0	20	148
4:30 PM	0	50	3	0	0	53	31	64	0	0	0	95	0	0	0	0	0	0	11	0	10	0	0	21	169
4:45 PM	0	54	1	0	0	55	25	78	0	0	0	103	0	0	0	0	0	0	5	0	20	0	0	25	183
Total	0	180	15	0	0	195	88	262	0	0	0	350	0	0	0	0	0	0	25	0	74	0	0	99	644
5:00 PM	0	63	5	0	0	68	19	75	0	0	0	94	0	0	0	0	0	0	5	0	16	0	0	21	183
5:15 PM	0	57	5	0	0	62	21	44	0	0	0	65	0	0	0	0	0	0	3	0	13	0	0	16	143
5:30 PM	0	73	2	0	0	75	15	53	0	0	0	68	0	0	0	0	0	0	7	0	32	0	0	39	182
5:45 PM	0	53	2	0	0	55	14	54	0	0	0	68	0	0	0	0	0	0	1	0	4	0	0	5	128
Total	0	246	14	0	0	260	69	226	0	0	0	295	0	0	0	0	0	0	16	0	65	0	0	81	636
Grand Total	0	959	268	0	0	1227	533	1091	0	0	0	1624	0	0	0	0	0	0	139	0	359	0	0	498	3349
Apprch %	0.0	78.2	21.8	0.0	0.0		32.8	67.2	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		27.9	0.0	72.1	0.0	0.0		
Total %	0.0	28.6	8.0	0.0	0.0	36.6	15.9	32.6	0.0	0.0	0.0	48.5	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	10.7	0.0	0.0	14.9	
Cars, PU, Vans	0	913	267	0	0	1180	533	1039	0		0	1572	0	0	0	0		0	138	0	359		0	497	3249
% Cars, PU, Vans	0.0	95.2	99.6	0.0	0.0	96.2	100.0	95.2	0.0	0.0	0.0	96.8	0.0	0.0	0.0	0.0	0.0	0.0	99.3	0.0	100.0	0.0	0.0	99.8	97.0
Heavy Trucks	0	46	1	0		47	0	52	0	0		52	0	0	0	0		0	1	0	0	0		1	100
%Heavy Trucks	0.0	4.8	0.4	0.0	0.0	3.8	0.0	4.8	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.2	3.0

Project ID: 19-09055-009
Location: Young St/Rolesville Rd & Rolesville High School D
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Rolesville High School Dwy Eastbound					Rolesville High School Dwy Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
6:45 AM	0	50	66	0	116	168	42	0	0	210	0	0	0	0	0	17	0	55	0	72	398
7:00 AM	0	37	136	0	173	108	62	0	0	170	0	0	0	0	0	36	0	88	0	124	467
7:15 AM	0	68	10	0	78	16	53	0	0	69	0	0	0	0	0	35	0	46	0	81	228
7:30 AM	0	78	1	0	79	7	74	0	0	81	0	0	0	0	0	3	0	6	0	9	169
Total Volume	0	233	213	0	446	299	231	0	0	530	0	0	0	0	0	91	0	195	0	286	1262
% App. Total	0.0	52.2	47.8	0.0	100	56.4	43.6	0.0	0.0	100	0.0	0.0	0.0	0.0	0	31.8	0.0	68.2	0.0	100	
PHF					0.645					0.631										0.577	0.676
Cars, PU, Vans	0	220	212	0	432	299	216	0	0	515	0	0	0	0	0	90	0	195	0	285	1232
% Cars, PU, Vans	0.0	94.4	99.5	0.0	96.9	100.0	93.5	0.0	0.0	97.2	0.0	0.0	0.0	0.0	0.0	98.9	0.0	100.0	0.0	99.7	97.6
Heavy Trucks	0	13	1	0	14	0	15	0	0	15	0	0	0	0	0	1	0	0	0	1	30
%Heavy Trucks	0.0	5.6	0.5	0.0	3.1	0.0	6.5	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.3	2.4

PM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Rolesville High School Dwy Eastbound					Rolesville High School Dwy Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
4:45 PM	0	54	1	0	55	25	78	0	0	103	0	0	0	0	0	5	0	20	0	25	183
5:00 PM	0	63	5	0	68	19	75	0	0	94	0	0	0	0	0	5	0	16	0	21	183
5:15 PM	0	57	5	0	62	21	44	0	0	65	0	0	0	0	0	3	0	13	0	16	143
5:30 PM	0	73	2	0	75	15	53	0	0	68	0	0	0	0	0	7	0	32	0	39	182
Total Volume	0	247	13	0	260	80	250	0	0	330	0	0	0	0	0	20	0	81	0	101	691
% App. Total	0.0	95.0	5.0	0.0	100	24.2	75.8	0.0	0.0	100	0.0	0.0	0.0	0.0	0	19.8	0.0	80.2	0.0	100	
PHF					0.867					0.801										0.647	0.944
Cars, PU, Vans	0	243	13	0	256	80	246	0	0	326	0	0	0	0	0	20	0	81	0	101	683
% Cars, PU, Vans	0.0	98.4	100.0	0.0	98.5	100.0	98.4	0.0	0.0	98.8	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	98.8
Heavy Trucks	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	8
%Heavy Trucks	0.0	1.6	0.0	0.0	1.5	0.0	1.6	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2

Rolesville Road and /Rolesville HS Driveway AM and PM Peak Hour Traffic Count

Count Performed: Saturday, January 0, 1900

Start Time	Rolesville Road Southbound			Rolesville HS Driveway Westbound			Rolesville Road Northbound			Intersection Volume
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14:00	18	25	0	3	0	9	0	27	12	94
14:15	13	49	0	76	0	153	0	37	7	335
14:30	15	36	0	20	0	51	0	35	4	161
14:45	6	45	0	6	0	9	0	51	2	119
15:00	7	55	0	3	0	8	0	31	3	107
15:15	20	57	0	0	0	18	0	41	3	139
15:30	15	45	0	7	0	11	0	40	3	121
15:45	24	68	0	2	0	21	0	35	3	153

Peak Hour	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	Volume
14:00 - 15:00	52	155	0	105	0	222	0	150	25	709
14:15 - 15:15	41	185	0	105	0	221	0	154	16	722
14:30 - 15:30	48	193	0	29	0	86	0	158	12	526
14:45 - 15:45	48	202	0	16	0	46	0	163	11	486
15:00 - 16:00	66	225	0	12	0	58	0	147	12	520

Peak-Hour Traffic Volumes										
Peak Hour	NBL	NBT	NBR	SBL	SBT	SBR	WBL	WBT	WBR	Volume
14:15 - 15:15	0	154	16	41	185	0	105	0	221	722

Peak-Hour Factor by Movement										
Peak Hour	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	PHF
14:15 - 15:15	-	0.755	0.571	0.683	0.841	-	-	-	-	0.539

k:\ral_tpto_traffic\015956012 young street pud\t4 - analysis\[youngstreetpud-scen1-approvedpud-tiadata.xls]young@schooldrwy

Location: Young St/Rolesville Rd & Rolesville High School Dwy
City: Rolesville
Control: 1-Way Stop (WB)

Project ID: 19-09055-009
Date: 1/29/2019

Bikes

NS/EW Streets:	Young St/Rolesville Rd				Young St/Rolesville Rd				Rolesville High School Dwy				Rolesville High School Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	06:45 AM - 07:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Location: Young St/Rolesville Rd & Rolesville High School Dwy Project ID: 19-09055-009
City: Rolesville Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Young St/Rolesville Rd		Young St/Rolesville Rd		Rolesville High School Dwy		Rolesville High School Dwy		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	06:45 AM - 07:45 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Project ID: 19-09055-010
Location: Young St/Rolesville Rd & Mitchell Mill Rd
City: Rolesville

Day: Tuesday
Date: 01/29/2019

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Young St/Rolesville Rd Northbound						Young St/Rolesville Rd Southbound						Mitchell Mill Rd Eastbound						Mitchell Mill Rd Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
6:00 AM	1	15	0	0	0	16	0	22	4	0	0	26	2	1	0	0	0	3	4	17	0	0	0	21	66
6:15 AM	3	28	0	0	0	31	0	24	3	0	0	27	0	2	1	0	0	3	11	24	2	0	0	37	98
6:30 AM	3	31	4	0	0	38	0	53	4	0	0	57	8	2	0	0	0	10	9	48	1	0	0	58	163
6:45 AM	1	58	1	0	0	60	1	39	11	0	0	51	38	1	0	0	0	39	11	37	1	0	0	49	199
Total	8	132	5	0	0	145	1	138	22	0	0	161	48	6	1	0	0	55	35	126	4	0	0	165	526
7:00 AM	3	64	2	0	0	69	0	54	22	0	0	76	59	3	0	0	0	62	8	54	3	0	0	65	272
7:15 AM	3	45	3	0	0	51	2	55	27	0	0	84	3	4	2	0	0	9	15	43	5	0	0	63	207
7:30 AM	1	57	1	0	0	59	0	55	3	0	0	58	2	7	0	0	0	9	12	29	2	0	0	43	169
7:45 AM	1	21	1	0	0	23	3	73	2	0	0	78	0	9	0	0	0	9	9	27	2	0	0	38	148
Total	8	187	7	0	0	202	5	237	54	0	0	296	64	23	2	0	0	89	44	153	12	0	0	209	796
8:00 AM	2	21	4	0	0	27	1	47	2	0	0	50	2	2	1	0	0	5	12	17	0	0	0	29	111
8:15 AM	0	26	2	0	0	28	1	36	4	0	0	41	0	2	1	0	0	3	7	29	3	0	0	39	111
8:30 AM	1	21	5	0	0	27	0	21	1	0	0	22	0	3	1	0	0	4	3	13	3	0	0	19	72
8:45 AM	2	23	1	0	0	26	0	20	2	0	0	22	2	5	0	0	0	7	10	22	1	0	0	33	88
Total	5	91	12	0	0	108	2	124	9	0	0	135	4	12	3	0	0	19	32	81	7	0	0	120	382
BREAK																									
4:00 PM	1	28	9	0	0	38	1	37	6	0	0	44	6	23	0	0	0	29	9	6	0	0	0	15	126
4:15 PM	0	29	14	0	0	43	1	27	4	0	0	32	5	26	0	0	0	31	4	6	0	0	0	10	116
4:30 PM	1	40	9	0	0	50	1	53	5	0	0	59	7	24	1	0	0	32	0	12	1	0	0	13	154
4:45 PM	2	38	8	0	0	48	2	45	3	0	0	50	4	19	1	0	0	24	7	4	0	0	0	11	133
Total	4	135	40	0	0	179	5	162	18	0	0	185	22	92	2	0	0	116	20	28	1	0	0	49	529
5:00 PM	2	55	12	0	0	69	2	56	7	0	0	65	4	31	4	0	0	39	4	13	1	0	0	18	191
5:15 PM	2	34	12	0	0	48	0	35	3	0	0	38	6	29	1	0	0	36	2	10	0	0	0	12	134
5:30 PM	2	57	9	0	0	68	2	29	3	0	0	34	3	32	1	0	0	36	4	2	3	0	0	9	147
5:45 PM	1	28	6	0	0	35	1	34	5	0	0	40	5	28	0	0	0	33	3	7	1	0	0	11	119
Total	7	174	39	0	0	220	5	154	18	0	0	177	18	120	6	0	0	144	13	32	5	0	0	50	591
Grand Total	32	719	103	0	0	854	18	815	121	0	0	954	156	253	14	0	0	423	144	420	29	0	0	593	2824
Apprch %	3.7	84.2	12.1	0.0	0.0		1.9	85.4	12.7	0.0	0.0		36.9	59.8	3.3	0.0	0.0		24.3	70.8	4.9	0.0	0.0		
Total %	1.1	25.5	3.6	0.0	0.0	30.2	0.6	28.9	4.3	0.0	0.0	33.8	5.5	9.0	0.5	0.0	0.0	15.0	5.1	14.9	1.0	0.0	0.0	21.0	
Cars, PU, Vans	30	687	98	0	0	815	16	783	107		0	906	149	247	14	0		410	141	417	27		0	585	2716
% Cars, PU, Vans	93.8	95.5	95.1	0.0	0.0	95.4	88.9	96.1	88.4	0.0	0.0	95.0	95.5	97.6	100.0	0.0	0.0	96.9	97.9	99.3	93.1	0.0	0.0	98.7	96.2
Heavy Trucks	2	32	5	0		39	2	32	14	0		48	7	6	0	0		13	3	3	2	0		8	108
%Heavy Trucks	6.3	4.5	4.9	0.0	0.0	4.6	11.1	3.9	11.6	0.0	0.0	5.0	4.5	2.4	0.0	0.0	0.0	3.1	2.1	0.7	6.9	0.0	0.0	1.3	3.8

Project ID: 19-09055-010
Location: Young St/Rolesville Rd & Mitchell Mill Rd
City: Rolesville

PEAK HOURS

Day: Tuesday
Date: 01/29/2019

AM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Mitchell Mill Rd Eastbound					Mitchell Mill Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 06:00 AM to 10:00 AM																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
6:45 AM	1	58	1	0	60	1	39	11	0	51	38	1	0	0	39	11	37	1	0	49	199
7:00 AM	3	64	2	0	69	0	54	22	0	76	59	3	0	0	62	8	54	3	0	65	272
7:15 AM	3	45	3	0	51	2	55	27	0	84	3	4	2	0	9	15	43	5	0	63	207
7:30 AM	1	57	1	0	59	0	55	3	0	58	2	7	0	0	9	12	29	2	0	43	169
Total Volume	8	224	7	0	239	3	203	63	0	269	102	15	2	0	119	46	163	11	0	220	847
% App. Total	3.3	93.7	2.9	0.0	100	1.1	75.5	23.4	0.0	100	85.7	12.6	1.7	0.0	100	20.9	74.1	5.0	0.0	100	
PHF					0.866					0.801					0.480					0.846	0.778
Cars, PU, Vans	7	212	7	0	226	2	195	56	0	253	101	15	2	0	118	43	163	10	0	216	813
% Cars, PU, Vans	87.5	94.6	100.0	0.0	94.6	66.7	96.1	88.9	0.0	94.1	99.0	100.0	100.0	0.0	99.2	93.5	100.0	90.9	0.0	98.2	96.0
Heavy Trucks	1	12	0	0	13	1	8	7	0	16	1	0	0	0	1	3	0	1	0	4	34
%Heavy Trucks	12.5	5.4	0.0	0.0	5.4	33.3	3.9	11.1	0.0	5.9	1.0	0.0	0.0	0.0	0.8	6.5	0.0	9.1	0.0	1.8	4.0

PM

	Young St/Rolesville Rd Northbound					Young St/Rolesville Rd Southbound					Mitchell Mill Rd Eastbound					Mitchell Mill Rd Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	1	40	9	0	50	1	53	5	0	59	7	24	1	0	32	0	12	1	0	13	154
4:45 PM	2	38	8	0	48	2	45	3	0	50	4	19	1	0	24	7	4	0	0	11	133
5:00 PM	2	55	12	0	69	2	56	7	0	65	4	31	4	0	39	4	13	1	0	18	191
5:15 PM	2	34	12	0	48	0	35	3	0	38	6	29	1	0	36	2	10	0	0	12	134
Total Volume	7	167	41	0	215	5	189	18	0	212	21	103	7	0	131	13	39	2	0	54	612
% App. Total	3.3	77.7	19.1	0.0	100	2.4	89.2	8.5	0.0	100	16.0	78.6	5.3	0.0	100	24.1	72.2	3.7	0.0	100	
PHF					0.779					0.815					0.840					0.750	0.801
Cars, PU, Vans	7	162	38	0	207	5	180	18	0	203	18	102	7	0	127	13	38	2	0	53	590
% Cars, PU, Vans	100.0	97.0	92.7	0.0	96.3	100.0	95.2	100.0	0.0	95.8	85.7	99.0	100.0	0.0	96.9	100.0	97.4	100.0	0.0	98.1	96.4
Heavy Trucks	0	5	3	0	8	0	9	0	0	9	3	1	0	0	4	0	1	0	0	1	22
%Heavy Trucks	0.0	3.0	7.3	0.0	3.7	0.0	4.8	0.0	0.0	4.2	14.3	1.0	0.0	0.0	3.1	0.0	2.6	0.0	0.0	1.9	3.6

Location: Young St/Rolesville Rd & Mitchell Mill Rd
City: Rolesville
Control: 3-Way Stop (NB/EB/WB)

Project ID: 19-09055-010
Date: 1/29/2019

Bikes

NS/EW Streets:	Young St/Rolesville Rd				Young St/Rolesville Rd				Mitchell Mill Rd				Mitchell Mill Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
8:00 AM	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
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	06:45 AM - 07:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Location: Young St/Rolesville Rd & Mitchell Mill Rd
City: Rolesville

Project ID: 19-09055-010
Date: 1/29/2019

Pedestrians (Crosswalks)

NS/EW Streets:	Young St/Rolesville Rd		Young St/Rolesville Rd		Mitchell Mill Rd		Mitchell Mill Rd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	06:45 AM - 07:45 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Appendix D:
Approved Development Data

Kalas Property Traffic Impact Analysis

Prepared for:
Mitchell Mill Road Investors LLC
PO Box 3557
Cary, NC, 27519

Prepared by:

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606

January 19, 2016

Executive Summary

The proposed Kalas Property development is located on the west side of SR 1003 (Rolesville Road), between SR 2224 (Mitchell Mill Road) and SR 2308 (Fowler Road), in Rolesville, NC. The proposed development will contain 215 single family homes and is scheduled for completion in 2021.

The proposed development is expected to generate 2,124 new trips per day with 160 new trips during the AM peak hour (40 in and 120 out) and 209 new trips during the PM peak hour (132 in and 77 out).

The purpose of this report is to evaluate the proposed development in terms of projected traffic conditions, evaluate the ability of the adjacent roadways to accommodate the additional traffic volumes, and to recommend transportation improvements needed to mitigate congestion that may result from the additional site traffic. This report presents trip generation, trip distribution, traffic analyses, and recommendations for transportation improvements needed to meet anticipated traffic demands while examining existing conditions (2015), 2021 No-Build conditions, and 2021 Build-Out conditions for the AM and PM peak hours.

As a part of the proposed development, two new access roads will be constructed on SR 1003 (Rolesville Road): one approximately 1,500 feet (0.28 mi.) and the other approximately 2,300 feet (0.44 mi.) north of the intersection with SR 2224 (Mitchell Mill Road). The proposed site access roads should be built to meet or exceed minimum NCDOT and Town of Rolesville standards. Table E-1 shows a summary of the capacity analyses included in this Traffic Impact Analysis:

Conclusion

This study shows that traffic generated by the proposed development will not have a significant impact on Rolesville Road or any of the study intersections in this report. As part of the development, a 100 foot northbound left turn lane should be constructed at each of the proposed site driveways. The recommended improvements in this report will safely and efficiently accommodate the projected site traffic from Kalas Property.

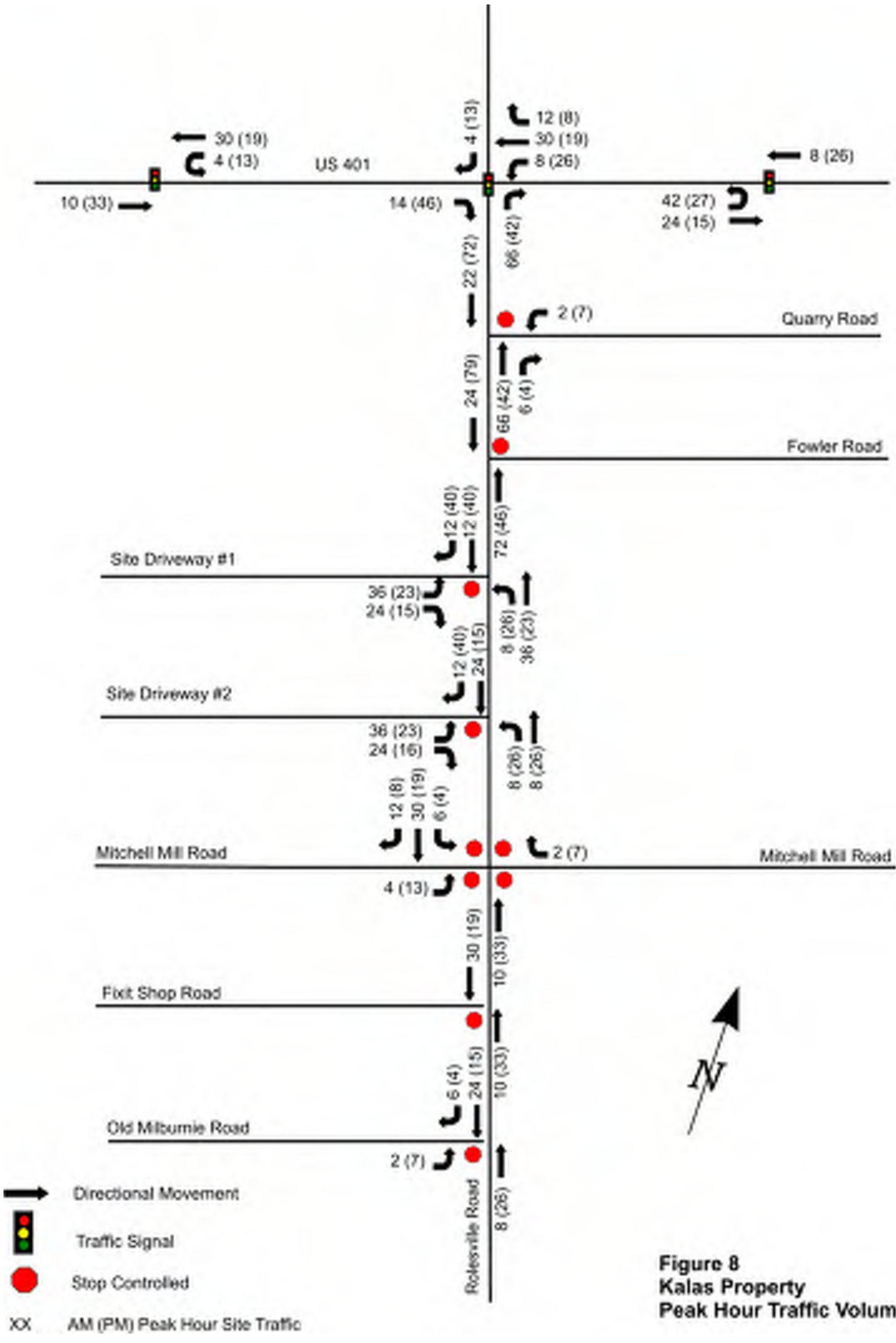

Figure 8
Kalas Property
Peak Hour Traffic Volumes

6.2 APPROVED DEVELOPMENT TRAFFIC

Approved development traffic is generated by specific approved, but not yet constructed, projects within the vicinity of the subject project. Based on coordination with the Town of Rolesville and NCDOT, the following approved developments were considered in the analyses of the Kalas Property development:

- Rogers Farm Subdivision

A traffic impact analysis report was not required by the Town of Rolesville for the Rogers Farm subdivision. With the information provided regarding the future development, trips generated by the development during the AM and PM peak hours were distributed in the same manner as the site traffic distributed in this report (see Figure 6).

The following is the ITE trip generation information used for the Rogers Farm subdivision:

Table 2: ITE Trip Generation
Rogers Farm Subdivision

Land Use	ITE Site Code	Size	24 Hour Two-Way Volume	AM Peak		PM Peak	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	98 units	1,030	20	59	65	38

A summary of all traffic from the above mentioned approved developments is illustrated in Figure 6A.

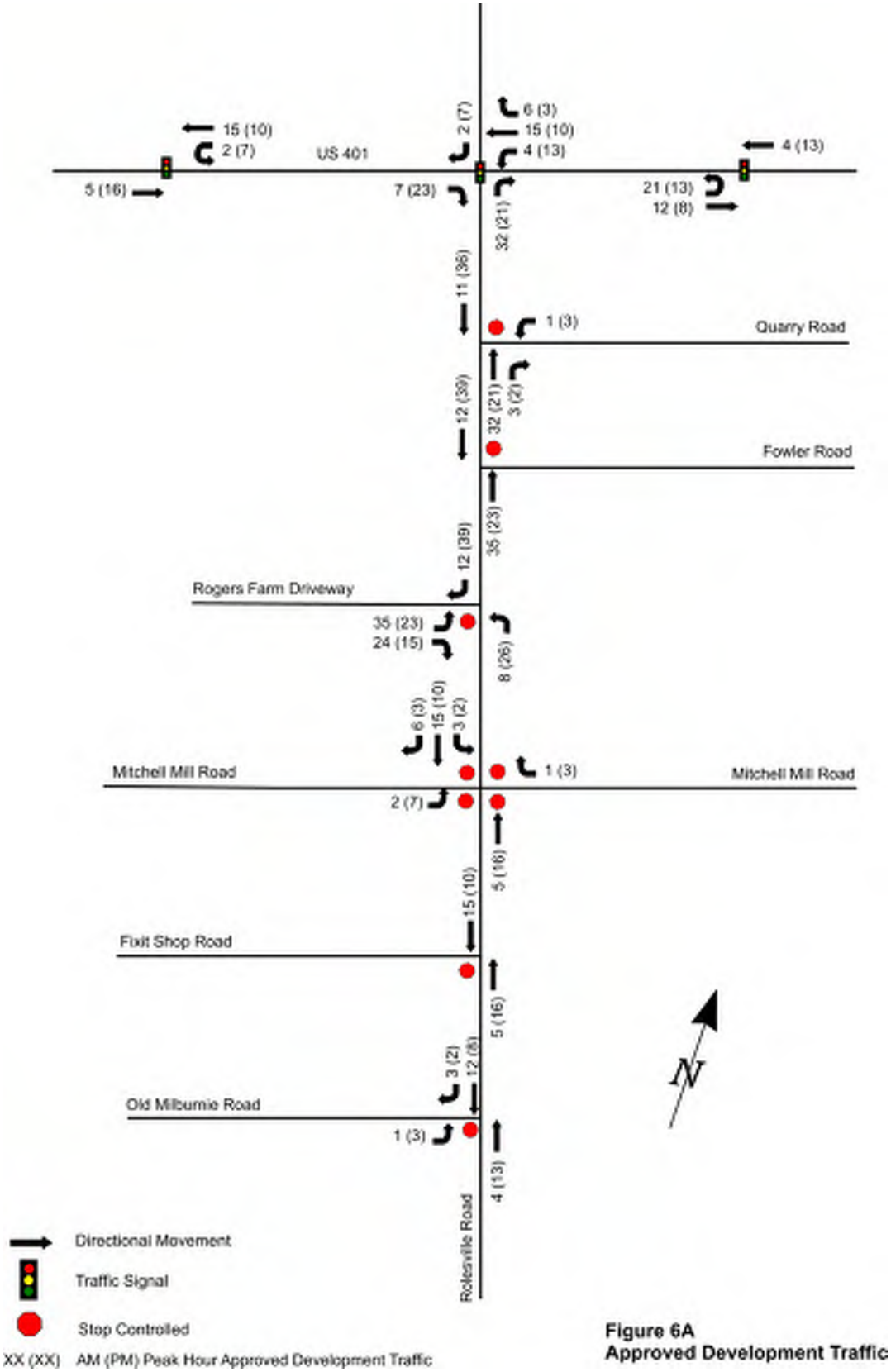

Figure 6A
Approved Development Traffic

Watkins Family Property Development Traffic Impact Analysis

Rolesville Road, Rolesville, North Carolina

October 29, 2018

Prepared for:
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Executive Summary

The proposed Watkins Family Property Development is located on the west side of Rolesville Road just north of Mitchell Mill Road in Rolesville, NC. The proposed development will consist of a maximum 145 single family homes. At full build out, the development is expected to generate 1464 new trips per average weekday. In the AM and PM peak hours, the development will generate approximately 108 AM peak hour trips (27 entering and 81 exiting) and 145 PM peak hour trips (91 entering and 54 exiting), respectively. The project completion date is expected to be 2025.

Access to the site is envisioned to be provided via the approved but not yet constructed access points for the Kalas Property on Rolesville Road. The first access is approximately 1,500 feet and the other approximately 2,300 feet north of the intersection of Rolesville Road at Mitchell Mill Road.

The purpose of this report is to evaluate the proposed development in terms of projected traffic conditions, evaluate the ability of the adjacent roadways to accommodate the additional traffic volumes, and to recommend transportation improvements needed to mitigate congestion that may result from the additional site traffic. This report presents trip generation, trip distribution, traffic analyses, and recommendations for transportation improvements needed to meet anticipated traffic demands. This report examines the following scenarios for the AM and PM peak hours:

- 2018 Existing
- 2025 No-Build
- 2025 Build Out
- 2025 Build Out with Improvements

Capacity analyses for the AM and PM peak hours in each scenario were performed for the following intersections:

- Rolesville Road at Mitchell Mill Road;
- Rolesville Road at Rolesville High School Driveway;
- Rolesville Road at Quarry Road;
- Rolesville Road at Site Access 1; and
- Rolesville Road at Site Access 2.

Table ES-1 shows a summary of the capacity analyses results included in this Traffic Impact Analysis (TIA).

As shown in the table, the additional traffic generated by the Watkins Family Property development will have a minimal impact on the operations at the surrounding intersections. All intersections and minor street approaches operate at acceptable levels of service with two exceptions. Specifically, the westbound approach of the Rolesville High School Driveway and the southbound approach of Rolesville Road at Mitchell Mill Road which operate at level of service F and E; respectively in the AM peak hour. It should be noted that the Rolesville Road at Mitchell Mill Road intersection operates at an overall level of service D in the AM peak hour; which is considered acceptable. The proposed site only adds 8.5 seconds of delay to the southbound Rolesville Road at Mitchell Mill road approach, but this location should be monitored for additional improvements in the future. The Rolesville High School driveway approach operates poorly under existing and future conditions, but that large delay would only be for a short period of time during peak carpool drop-off.

Both of these intersections and approaches operate with significantly lower delays in the PM peak hour when compared to the AM. This can be attributed to morning school drop-off traffic; which occurs for a brief period of time.

Some delay is added at the site driveways, but all approaches are expected to operate at LOS C or better in both peak hours. With the recommended improvements, delays at the site driveways improve slightly.

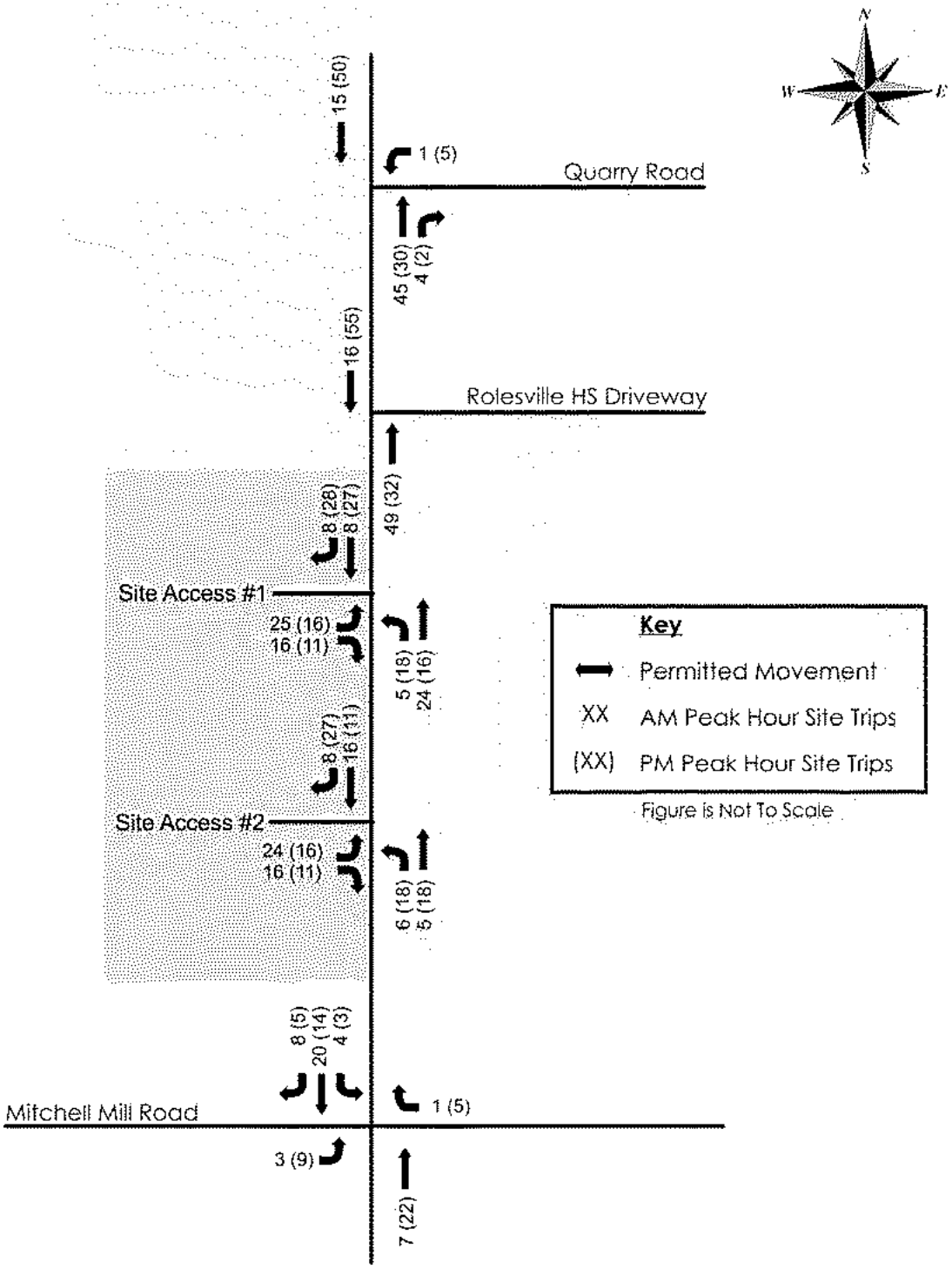
SimTraffic results show that, with the exception of the Mitchell Mill Road / Rolesville Road intersection, the proposed development only increases queues at the study intersections by a max of 30 feet. The queue on the southbound approach of Rolesville Road at Mitchell Mill Road increases from 553 feet in the no build AM peak to 760 feet in the build AM peak. Additionally, the westbound approach queue increases from 155 feet in the no build AM to 198 in the build AM. It is likely that these queues are due mostly to heavy traffic during the very short period of drop-off at Rolesville High School. Most of the traffic on the southbound approach is traveling straight through the intersection, indicating that turn lanes would provide minimal benefit.

The following recommended improvements should be constructed as part of the Watkins Family Property Development:

- Construct an exclusive southbound right-turn lane on Rolesville Road at the intersection with Site Access 1. The turn lane is to have a minimum of 75 feet of full-width storage and appropriate taper.
- Construct an exclusive southbound right-turn lane on Rolesville Road at the intersection with Site Access 2. The turn lane is to have a minimum of 75 feet of full-width storage and appropriate taper.

The results of the analyses show that the left-turn lanes proposed as a part of the Kalas Property development can accommodate the additional traffic generated by the Watkins Family Property development in the 2025 build traffic scenario. As such, no changes are proposed to these turn-lanes.

Figure 6: Proposed Site Trips



Appendix E:

Intersection Spreadsheets

- Approved PUD Build-out

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**US 401 Bypass (WB)**

	AM In	**AM Out**	**PM In**	**PM Out**
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

Description	US 401 Bypass (WB) **Eastbound** Left	Through	Right	US 401 Bypass (WB) **Westbound** Left	Through	Right	Young Street **Northbound** Left	Through	Right	Young Street **Southbound** Left	Through	Right
2019 Traffic Count	48	0	0	0	1114	261	0	0	0	0	0	453
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	48	0	0	0	1114	261	0	0	0	0	0	453
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	6	0	0	0	141	33	0	0	0	0	0	57
Committed Projects												
Kalas Falls	0	0	0	0	30	12	0	0	0	0	0	4
Rogers Farm	0	0	0	0	15	6	0	0	0	0	0	2
Watkins Family Property	0	0	0	0	21	8	0	0	0	0	0	3
Total Committed Traffic	0	0	0	0	66	26	0	0	0	0	0	9
2025 Background Traffic	54	0	0	0	1321	320	0	0	0	0	0	519
Project Traffic - North Side												
Percent Assignment Inbound	25%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	6	0	0	0	0	4	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	34
Total Traffic - North Side	6	0	0	0	0	4	0	0	0	0	0	34
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	37
Percent Assignment Outbound	0%	0%	0%	0%	30%	15%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	131	65	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	131	65	0	0	0	0	0	37
Total Project Traffic	6	0	0	0	131	69	0	0	0	0	0	71
2025 Buildout Total	60	0	0	0	1452	389	0	0	0	0	0	590
Percent Impact (Approach)		10.0%			10.9%			-			12.0%	

Overall Percent Impact 11.1%

PM PEAK HOUR

PM PHF = 0.93

Description	US 401 Bypass (WB) **Eastbound** Left	Through	Right	US 401 Bypass (WB) **Westbound** Left	Through	Right	Young Street **Northbound** Left	Through	Right	Young Street **Southbound** Left	Through	Right
2019 Traffic Count	119	0	0	0	422	209	0	0	0	0	0	344
Count Balancing	0	0	0	0	14	0	0	0	0	0	0	0
2019 Existing Traffic	119	0	0	0	436	209	0	0	0	0	0	344
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	15	0	0	0	55	26	0	0	0	0	0	43
Committed Projects												
Kalas Falls	0	0	0	0	19	8	0	0	0	0	0	13
Rogers Farm	0	0	0	0	10	3	0	0	0	0	0	7
Watkins Family Property	0	0	0	0	14	5	0	0	0	0	0	9
Total Committed Traffic	0	0	0	0	43	16	0	0	0	0	0	29
2025 Background Traffic	134	0	0	0	534	251	0	0	0	0	0	416
Project Traffic - North Side												
Percent Assignment Inbound	25.00%	0%	0%	0%	0%	20.00%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	18	0	0	0	0	14	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45.00%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	19
Total Traffic - North Side	18	0	0	0	0	14	0	0	0	0	0	19
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	73
Percent Assignment Outbound	0%	0%	0%	0%	30.00%	15.00%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	107	53	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	107	53	0	0	0	0	0	73
Total Project Traffic	18	0	0	0	107	67	0	0	0	0	0	92
2025 Buildout Total	152	0	0	0	641	318	0	0	0	0	0	508
Percent Impact (Approach)		11.8%			18.1%			-			18.1%	

Overall Percent Impact 17.5%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**US 401 Bypass (EB)**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

Description	US 401 Bypass (EB) Eastbound Left	Through	Right	US 401 Bypass (EB) Westbound Left	Through	Right	Rolesville Road Northbound Left	Through	Right	Young Street Southbound Left	Through	Right
2019 Traffic Count	0	229	564	146	0	0	0	0	490	0	0	0
Count Balancing	0	14	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	243	564	146	0	0	0	0	490	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	31	71	18	0	0	0	0	62	0	0	0
Committed Projects												
Kalas Falls	0	0	14	8	0	0	0	0	66	0	0	0
Rogers Farm	0	0	7	4	0	0	0	0	32	0	0	0
Watkins Family Property	0	0	10	5	0	0	0	0	45	0	0	0
Total Committed Traffic	0	0	31	17	0	0	0	0	143	0	0	0
2025 Background Traffic	0	274	666	181	0	0	0	0	695	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	2	0	0	0
Percent Assignment Outbound	0%	10%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	8	8	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	0	8	8	0	0	0	0	0	2	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	75%	10%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	183	24	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	55%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	240	0	0	0
Total Traffic - South Side	0	0	183	24	0	0	0	0	240	0	0	0
Total Project Traffic	0	8	191	24	0	0	0	0	242	0	0	0
2025 Buildout Total	0	282	857	205	0	0	0	0	937	0	0	0
Percent Impact (Approach)		17.5%			11.7%			25.8%			-	

Overall Percent Impact 20.4%

PM PEAK HOUR

PM PHF = 0.93

Description	US 401 Bypass (EB) Eastbound Left	Through	Right	US 401 Bypass (EB) Westbound Left	Through	Right	Rolesville Road Northbound Left	Through	Right	Young Street Southbound Left	Through	Right
2019 Traffic Count	0	803	385	82	0	0	0	0	334	0	0	0
Count Balancing	0	50	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	853	385	82	0	0	0	0	334	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	108	49	10	0	0	0	0	42	0	0	0
Committed Projects												
Kalas Falls	0	0	46	26	0	0	0	0	42	0	0	0
Rogers Farm	0	0	23	13	0	0	0	0	21	0	0	0
Watkins Family Property	0	0	32	18	0	0	0	0	30	0	0	0
Total Committed Traffic	0	0	101	57	0	0	0	0	93	0	0	0
2025 Background Traffic	0	961	535	149	0	0	0	0	469	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	7	0	0	0
Percent Assignment Outbound	0%	10.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	4	4	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	0	4	4	0	0	0	0	0	7	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	75.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	366	49	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	55.00%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	196	0	0	0
Total Traffic - South Side	0	0	366	49	0	0	0	0	196	0	0	0
Total Project Traffic	0	4	370	49	0	0	0	0	203	0	0	0
2025 Buildout Total	0	965	905	198	0	0	0	0	672	0	0	0
Percent Impact (Approach)		20.0%			24.7%			30.2%			-	

Overall Percent Impact 22.8%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**U-Turn East of Young**
E/W Street:	**US 401 Bypass**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.92

	US 401 Bypass Eastbound			US 401 Bypass Westbound			U-Turn East of Young Northbound			U-Turn East of Young Southbound		
Description	U-Turn	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	368	321	0	0	1131	0	0	0	0	0	0	0
Count Balancing	0	44	0	0	22	0	0	0	0	0	0	0
2019 Existing Traffic	368	365	0	0	1153	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	46	46	0	0	146	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	42	24	0	0	8	0	0	0	0	0	0	0
Rogers Farm	21	12	0	0	4	0	0	0	0	0	0	0
Watkins Family Property	29	16	0	0	5	0	0	0	0	0	0	0
Total Committed Traffic	92	52	0	0	17	0	0	0	0	0	0	0
2025 Background Traffic	506	463	0	0	1316	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	10%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	2	0	0	0	2	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	8	0	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	2	8	0	0	2	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	24	0	0	0	0	0	0	0
Percent Assignment Outbound	45%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	196	44	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	196	44	0	0	24	0	0	0	0	0	0	0
Total Project Traffic	198	52	0	0	26	0	0	0	0	0	0	0
2025 Buildout Total	704	515	0	0	1342	0	0	0	0	0	0	0
Percent Impact (Approach)		20.5%			1.9%			-			-	

Overall Percent Impact 10.8%

PM PEAK HOUR

PM PHF = 0.98

	US 401 Bypass Eastbound			US 401 Bypass Westbound			U-Turn East of Young Northbound			U-Turn East of Young Southbound		
Description	U-Turn	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	275	912	0	0	452	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	275	912	0	0	452	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	35	115	0	0	56	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	27	15	0	0	26	0	0	0	0	0	0	0
Rogers Farm	13	8	0	0	13	0	0	0	0	0	0	0
Watkins Family Property	19	11	0	0	18	0	0	0	0	0	0	0
Total Committed Traffic	59	34	0	0	57	0	0	0	0	0	0	0
2025 Background Traffic	369	1061	0	0	565	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	10.00%	0%	0%	0%	10.00%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	7	0	0	0	7	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	4	0	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	7	4	0	0	7	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	10.00%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	49	0	0	0	0	0	0	0
Percent Assignment Outbound	45.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	160	36	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	160	36	0	0	49	0	0	0	0	0	0	0
Total Project Traffic	167	40	0	0	56	0	0	0	0	0	0	0
2025 Buildout Total	536	1101	0	0	621	0	0	0	0	0	0	0
Percent Impact (Approach)		12.6%			9.0%			-			-	

Overall Percent Impact 11.6%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**U-Turn West of Young**
E/W Street:	**US 401 Bypass**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.81

Description	US 401 Bypass Eastbound Left	Through	Right	US 401 Bypass Westbound U-Turn	Through	Right	U-Turn West of Young Northbound Left	Through	Right	U-Turn West of Young Southbound Left	Through	Right
2019 Traffic Count	0	553	0	302	1264	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	1	0	0	0	0	0	0	0
2019 Existing Traffic	0	553	0	302	1265	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	70	0	38	160	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	0	10	0	4	30	0	0	0	0	0	0	0
Rogers Farm	0	5	0	2	15	0	0	0	0	0	0	0
Watkins Family Property	0	7	0	3	21	0	0	0	0	0	0	0
Total Committed Traffic	0	22	0	9	66	0	0	0	0	0	0	0
2025 Background Traffic	0	645	0	349	1491	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	6	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	20%	25%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	15	19	0	0	0	0	0	0	0
Total Traffic - North Side	0	6	0	15	19	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	60%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	146	0	37	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	131	0	0	0	0	0	0	0
Total Traffic - South Side	0	146	0	37	131	0	0	0	0	0	0	0
Total Project Traffic	0	152	0	52	150	0	0	0	0	0	0	0
2025 Buildout Total	0	797	0	401	1641	0	0	0	0	0	0	0
Percent Impact (Approach)		19.1%			9.9%			-			-	

Overall Percent Impact 12.5%

PM PEAK HOUR

PM PHF = 0.94

Description	US 401 Bypass Eastbound Left	Through	Right	US 401 Bypass Westbound U-Turn	Through	Right	U-Turn West of Young Northbound Left	Through	Right	U-Turn West of Young Southbound Left	Through	Right
2019 Traffic Count	0	1005	0	294	463	0	0	0	0	0	0	0
Count Balancing	0	58	0	0	23	0	0	0	0	0	0	0
2019 Existing Traffic	0	1063	0	294	486	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	135	0	37	61	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	0	33	0	13	19	0	0	0	0	0	0	0
Rogers Farm	0	16	0	7	10	0	0	0	0	0	0	0
Watkins Family Property	0	23	0	9	14	0	0	0	0	0	0	0
Total Committed Traffic	0	72	0	29	43	0	0	0	0	0	0	0
2025 Background Traffic	0	1270	0	360	590	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	25.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	18	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	20.00%	25.00%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	8	11	0	0	0	0	0	0	0
Total Traffic - North Side	0	18	0	8	11	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	60.00%	0%	15.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	293	0	73	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	30.00%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	107	0	0	0	0	0	0	0
Total Traffic - South Side	0	293	0	73	107	0	0	0	0	0	0	0
Total Project Traffic	0	311	0	81	118	0	0	0	0	0	0	0
2025 Buildout Total	0	1581	0	441	708	0	0	0	0	0	0	0
Percent Impact (Approach)		19.7%			17.3%			-			-	

Overall Percent Impact 18.7%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Virginia Water Drive**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.85

	Virginia Water Drive **Eastbound**			Virginia Water Drive **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	22	0	58	0	0	0	24	319	0	0	412	3
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	22	0	58	0	0	0	24	319	0	0	412	3
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	3	0	7	0	0	0	3	40	0	0	52	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	12	0	0	4	0
Rogers Farm	0	0	0	0	0	0	0	6	0	0	2	0
Watkins Family Property	0	0	0	0	0	0	0	8	0	0	3	0
Total Committed Traffic	0	0	0	0	0	0	0	26	0	0	9	0
2025 Background Traffic	25	0	65	0	0	0	27	385	0	0	473	3
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%	20%
Inbound Project Traffic	0	0	0	0	0	0	10	0	0	0	0	4
Percent Assignment Outbound	20%	0%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	15	0	34	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	15	0	34	0	0	0	10	0	0	0	0	4
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	37	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	65	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	65	0	0	37	0
Total Project Traffic	15	0	34	0	0	0	10	65	0	0	37	4
2025 Buildout Total	40	0	99	0	0	0	37	450	0	0	510	7
Percent Impact (Approach)		35.3%			-			15.4%			7.9%	

Overall Percent Impact 14.4%

PM PEAK HOUR

PM PHF = 0.91

	Virginia Water Drive **Eastbound**			Virginia Water Drive **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	15	0	27	0	0	0	35	294	0	0	317	22
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	15	0	27	0	0	0	35	294	0	0	317	22
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	2	0	3	0	0	0	4	37	0	0	40	3
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	8	0	0	13	0
Rogers Farm	0	0	0	0	0	0	0	3	0	0	7	0
Watkins Family Property	0	0	0	0	0	0	0	5	0	0	9	0
Total Committed Traffic	0	0	0	0	0	0	0	16	0	0	29	0
2025 Background Traffic	17	0	30	0	0	0	39	347	0	0	386	25
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	45.00%	0%	0%	0%	0%	20.00%
Inbound Project Traffic	0	0	0	0	0	0	32	0	0	0	0	14
Percent Assignment Outbound	20.00%	0%	45.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	8	0	19	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	8	0	19	0	0	0	32	0	0	0	0	14
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	73	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	15.00%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	53	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	53	0	0	73	0
Total Project Traffic	8	0	19	0	0	0	32	53	0	0	73	14
2025 Buildout Total	25	0	49	0	0	0	71	400	0	0	459	39
Percent Impact (Approach)		36.5%			-			18.0%			17.5%	

Overall Percent Impact 19.1%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Genovesa Drive**
E/W Street:	**Virginia Water Drive**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Genovesa Drive Northbound			Genovesa Drive Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	2	36	0	3	25	0	2	0	4	1	0	4
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	2	36	0	3	25	0	2	0	4	1	0	4
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	5	0	0	3	0	0	0	1	0	0	1
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	0	0	0	0	0
Rogers Farm	0	0	0	0	0	0	0	0	0	0	0	0
Watkins Family Property	0	0	0	0	0	0	0	0	0	0	0	0
Total Committed Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic	2	41	0	3	28	0	2	0	5	1	0	5
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	35%	65%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	8	14	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	35%	0%	65%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	26	0	49	0	0	0
Total Traffic - North Side	0	0	8	14	0	0	26	0	49	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	8	14	0	0	26	0	49	0	0	0
2025 Buildout Total	2	41	8	17	28	0	28	0	54	1	0	5
Percent Impact (Approach)		15.7%			31.1%			91.5%			0.0%	

Overall Percent Impact 52.7%

PM PEAK HOUR

PM PHF = 0.91

	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Genovesa Drive Northbound			Genovesa Drive Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	1	37	2	4	30	3	3	0	6	0	0	1
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	1	37	2	4	30	3	3	0	6	0	0	1
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	5	0	1	4	0	0	0	1	0	0	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	0	0	0	0	0
Rogers Farm	0	0	0	0	0	0	0	0	0	0	0	0
Watkins Family Property	0	0	0	0	0	0	0	0	0	0	0	0
Total Committed Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic	1	42	2	5	34	3	3	0	7	0	0	1
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	35.00%	65.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	25	47	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	35.00%	0%	65.00%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	15	0	27	0	0	0
Total Traffic - North Side	0	0	25	47	0	0	15	0	27	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	25	47	0	0	15	0	27	0	0	0
2025 Buildout Total	1	42	27	52	34	3	18	0	34	0	0	1
Percent Impact (Approach)		35.7%			52.8%			80.8%			0.0%	

Overall Percent Impact 53.8%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Century Farm Road**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.71

Description	Century Farm Road Eastbound			Century Farm Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	1	0	5	0	481	1	0	702	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	1	0	5	0	481	1	0	702	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	1	0	61	0	0	89	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	66	0	0	22	0
Rogers Farm	0	0	0	0	0	0	0	32	0	0	11	0
Watkins Family Property	0	0	0	0	0	0	0	45	0	0	15	0
Total Committed Traffic	0	0	0	0	0	0	0	143	0	0	48	0
2025 Background Traffic	0	0	0	1	0	6	0	685	1	0	839	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	8	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	8	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	207	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	55%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	240	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	240	0	0	207	0
Total Project Traffic	0	0	0	0	0	0	0	242	0	0	215	0
2025 Buildout Total	0	0	0	1	0	6	0	927	1	0	1054	0
Percent Impact (Approach)		-			0.0%			26.1%			20.4%	

Overall Percent Impact 23.0%

PM PEAK HOUR

PM PHF = 0.9

Description	Century Farm Road Eastbound			Century Farm Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	2	0	1	0	336	2	7	461	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	2	0	1	0	336	2	7	461	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	42	0	1	58	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	42	0	0	72	0
Rogers Farm	0	0	0	0	0	0	0	21	0	0	36	0
Watkins Family Property	0	0	0	0	0	0	0	30	0	0	50	0
Total Committed Traffic	0	0	0	0	0	0	0	93	0	0	158	0
2025 Background Traffic	0	0	0	2	0	1	0	471	2	8	677	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	7	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	7	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85.00%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	415	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	55.00%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	196	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	196	0	0	415	0
Total Project Traffic	0	0	0	0	0	0	0	203	0	0	419	0
2025 Buildout Total	0	0	0	2	0	1	0	674	2	8	1096	0
Percent Impact (Approach)		-			0.0%			30.0%			38.0%	

Overall Percent Impact 34.9%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Quarry Road / Northern Site Driveway**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.74

Description	Northern Site Driveway Eastbound Left	Through	Right	Quarry Road Westbound Left	Through	Right	Young Street Northbound Left	Through	Right	Young Street Southbound Left	Through	Right
2019 Traffic Count	0	0	0	27	0	139	0	344	50	189	517	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	27	0	139	0	344	50	189	517	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	3	0	18	0	43	6	24	65	0
Committed Projects												
Kalas Falls	0	0	0	2	0	0	0	66	6	0	22	0
Rogers Farm	0	0	0	1	0	0	0	32	3	0	11	0
Watkins Family Property	0	0	0	1	0	0	0	45	4	0	15	0
Total Committed Traffic	0	0	0	4	0	0	0	143	13	0	48	0
2025 Background Traffic	0	0	0	34	0	157	0	530	69	213	630	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	8	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	8	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	25%	60%
Inbound Project Traffic	0	0	0	0	0	0	10	0	0	0	61	147
Percent Assignment Outbound	35%	0%	20%	0%	0%	0%	0%	20%	0%	0%	0%	0%
Outbound Project Traffic	153	0	87	0	0	0	0	87	0	0	0	0
Total Traffic - South Side	153	0	87	0	0	0	10	87	0	0	61	147
Total Project Traffic	153	0	87	0	0	0	10	89	0	0	69	147
2025 Buildout Total	153	0	87	34	0	157	10	619	69	213	699	147
Percent Impact (Approach)		100.0%			0.0%			14.2%			20.4%	

Overall Percent Impact 25.4%

PM PEAK HOUR

PM PHF = 0.92

Description	Northern Site Driveway Eastbound Left	Through	Right	Quarry Road Westbound Left	Through	Right	Young Street Northbound Left	Through	Right	Young Street Southbound Left	Through	Right
2019 Traffic Count	0	0	0	25	0	78	0	259	17	120	349	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	25	0	78	0	259	17	120	349	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	3	0	10	0	33	2	15	44	0
Committed Projects												
Kalas Falls	0	0	0	7	0	0	0	42	4	0	72	0
Rogers Farm	0	0	0	3	0	0	0	21	2	0	36	0
Watkins Family Property	0	0	0	5	0	0	0	30	2	0	50	0
Total Committed Traffic	0	0	0	15	0	0	0	93	8	0	158	0
2025 Background Traffic	0	0	0	43	0	88	0	385	27	135	551	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	7	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	7	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4.00%	0%	0%	0%	25.00%	60.00%
Inbound Project Traffic	0	0	0	0	0	0	20	0	0	0	122	292
Percent Assignment Outbound	35.00%	0%	20.00%	0%	0%	0%	0%	20.00%	0%	0%	0%	0%
Outbound Project Traffic	124	0	71	0	0	0	0	71	0	0	0	0
Total External Site Traffic	124	0	71	0	0	0	20	71	0	0	122	292
Pass-By Capture Reduction	0	0	0	0	0	0	0	-34	0	0	-50	0
Pass-By Capture Assignment	30	0	45	0	0	0	34	0	0	0	0	50
Total Pass-By Traffic	30	0	45	0	0	0	34	-34	0	0	-50	50
Total Traffic - South Side	154	0	116	0	0	0	54	37	0	0	72	342
Total Project Traffic	154	0	116	0	0	0	54	44	0	0	76	342
2025 Buildout Total	154	0	116	43	0	88	54	429	27	135	627	342
Percent Impact (Approach)		100.0%			0.0%			19.2%			37.9%	

Overall Percent Impact 39.0%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Quarry Road / Northern Site Driveway**

	School PM IN	School PM OUT
Total Net New Trips (North + South):	452	335
Total Pass-By Trips (North + South):	0	0
North Side Net New Trips:	54	32
North Side Pass-By Trips:	0	0
South Side Net New Trips:	398	303
South Side Pass-By Trips:	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

SCHOOL PM PEAK HOUR
AM PHF = 0.67

Description	Northern Site Driveway Eastbound			Quarry Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	31	0	122	0	361	16	59	197	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	31	0	122	0	361	16	59	197	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	4	0	15	0	46	2	7	25	0
Committed Projects												
Kalas Falls	0	0	0	5	0	0	0	33	3	0	56	0
Rogers Farm	0	0	0	2	0	0	0	16	2	0	28	0
Watkins Family Property	0	0	0	4	0	0	0	23	2	0	39	0
Total Committed Traffic	0	0	0	12	0	0	0	72	6	0	123	0
2025 Background Traffic	0	0	0	47	0	137	0	479	24	66	345	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	5	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0
Total Traffic - North Side	0	0	0	0	0	0	0	5	0	0	3	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	25%	60%
Inbound Project Traffic	0	0	0	0	0	0	16	0	0	0	100	239
Percent Assignment Outbound	35%	0%	20%	0%	0%	0%	0%	20%	0%	0%	0%	0%
Outbound Project Traffic	106	0	61	0	0	0	0	61	0	0	0	0
Total External Site Traffic	106	0	61	0	0	0	16	61	0	0	100	239
Pass-By Capture Reduction	0	0	0	0	0	0	0	-55	0	0	-29	0
Pass-By Capture Assignment	49	0	26	0	0	0	55	0	0	0	0	29
Total Pass-By Traffic	49	0	26	0	0	0	55	-55	0	0	-29	29
Total Traffic - South Side	155	0	87	0	0	0	71	6	0	0	71	268
Total Project Traffic	155	0	87	0	0	0	71	11	0	0	74	268
2025 Buildout Total	155	0	87	47	0	137	71	490	24	66	419	268
Percent Impact (Approach)		100.0%			0.0%			14.0%			45.4%	

Overall Percent Impact 37.8%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Rolesville High School Drwy/South Site Drwy.**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.68

	Southern Site Driveway **Eastbound**			Rolesville High School Driveway **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	91	0	195	0	233	213	299	231	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	91	0	195	0	233	213	299	231	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	29	0	0	29	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	72	0	0	24	0
Rogers Farm	0	0	0	0	0	0	0	35	0	0	12	0
Watkins Family Property	0	0	0	0	0	0	0	49	0	0	16	0
Total Committed Traffic	0	0	0	0	0	0	0	156	0	0	52	0
2025 Background Traffic	0	0	0	91	0	195	0	418	213	299	312	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	8	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	8	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1%	14%	0%	0%	0%	4%
Inbound Project Traffic	0	0	0	0	0	0	2	34	0	0	0	10
Percent Assignment Outbound	3%	0%	2%	0%	0%	0%	0%	0%	0%	0%	43%	0%
Outbound Project Traffic	13	0	9	0	0	0	0	0	0	0	187	0
Total Traffic - South Side	13	0	9	0	0	0	2	34	0	0	187	10
Total Project Traffic	13	0	9	0	0	0	2	36	0	0	195	10
2025 Buildout Total	13	0	9	91	0	195	2	454	213	299	507	10
Percent Impact (Approach)		100.0%			0.0%			5.7%			25.1%	

Overall Percent Impact 14.8%

PM PEAK HOUR

PM PHF = 0.94

	Southern Site Driveway **Eastbound**			Rolesville High School Driveway **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	20	0	81	0	247	13	80	250	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	20	0	81	0	247	13	80	250	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	31	0	0	32	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	46	0	0	79	0
Rogers Farm	0	0	0	0	0	0	0	23	0	0	39	0
Watkins Family Property	0	0	0	0	0	0	0	32	0	0	55	0
Total Committed Traffic	0	0	0	0	0	0	0	101	0	0	173	0
2025 Background Traffic	0	0	0	20	0	81	0	379	13	80	455	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	7	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	7	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1.00%	14.00%	0%	0%	0%	4.00%
Inbound Project Traffic	0	0	0	0	0	0	5	68	0	0	0	20
Percent Assignment Outbound	3.00%	0%	2.00%	0%	0%	0%	0%	0%	0%	0%	43.00%	0%
Outbound Project Traffic	11	0	7	0	0	0	0	0	0	0	153	0
Total Traffic - South Side	11	0	7	0	0	0	5	68	0	0	153	20
Total Project Traffic	11	0	7	0	0	0	5	75	0	0	157	20
2025 Buildout Total	11	0	7	20	0	81	5	454	13	80	612	20
Percent Impact (Approach)		100.0%			0.0%			16.9%			24.9%	

Overall Percent Impact 21.1%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Rolesville High School Drwy/South Site Drwy.**

	School PM IN	School PM OUT
Total Net New Trips (North + South):	452	335
Total Pass-By Trips (North + South):	0	0
North Side Net New Trips:	54	32
North Side Pass-By Trips:	0	0
South Side Net New Trips:	398	303
South Side Pass-By Trips:	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

SCHOOL PM PEAK HOUR

AM PHF = 0.54

Description	Southern Site Driveway **Eastbound**			Rolesville High School Driveway **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	105	0	221	0	154	16	41	185	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	105	0	221	0	154	16	41	185	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	19	0	0	23	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	36	0	0	61	0
Rogers Farm	0	0	0	0	0	0	0	18	0	0	30	0
Watkins Family Property	0	0	0	0	0	0	0	25	0	0	43	0
Total Committed Traffic	0	0	0	0	0	0	0	79	0	0	135	0
2025 Background Traffic	0	0	0	105	0	221	0	252	16	41	343	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	5	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0
Total Traffic - North Side	0	0	0	0	0	0	0	5	0	0	3	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1%	14%	0%	0%	0%	4%
Inbound Project Traffic	0	0	0	0	0	0	4	56	0	0	0	16
Percent Assignment Outbound	3%	0%	2%	0%	0%	0%	0%	0%	0%	0%	43%	0%
Outbound Project Traffic	9	0	6	0	0	0	0	0	0	0	130	0
Total Traffic - South Side	9	0	6	0	0	0	4	56	0	0	130	16
Total Project Traffic	9	0	6	0	0	0	4	61	0	0	133	16
2025 Buildout Total	9	0	6	105	0	221	4	313	16	41	476	16
Percent Impact (Approach)		100.0%			0.0%			19.5%			28.0%	

Overall Percent Impact 19.0%

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INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**1/29/219**
N/S Street:	**Young Street**
E/W Street:	**Mitchell Mill Road**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.78

Description	Mitchell Mill Road Eastbound			Mitchell Mill Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	102	15	2	46	163	11	8	224	7	3	203	63
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	102	15	2	46	163	11	8	224	7	3	203	63
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	13	2	0	6	21	1	1	28	1	0	26	8
Committed Projects												
Kalas Falls	4	0	0	0	0	2	0	10	0	6	30	12
Rogers Farm	2	0	0	0	0	1	0	5	0	3	15	6
Watkins Family Property	3	0	0	0	0	1	0	7	0	4	20	8
Total Committed Traffic	9	0	0	0	0	4	0	22	0	13	65	26
2025 Background Traffic	124	17	2	52	184	16	9	274	8	16	294	97
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	8	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	8	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	37	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	30%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	65	131
Total Traffic - South Side	0	0	0	0	0	0	0	37	0	0	65	131
Total Project Traffic	0	0	0	0	0	0	0	39	0	0	73	131
2025 Buildout Total	124	17	2	52	184	16	9	313	8	16	367	228
Percent Impact (Approach)		0.0%			0.0%			11.8%			33.4%	

Overall Percent Impact 18.2%

PM PEAK HOUR

PM PHF = 0.8

Description	Mitchell Mill Road Eastbound			Mitchell Mill Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	21	103	7	13	39	2	7	167	41	5	189	18
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	21	103	7	13	39	2	7	167	41	5	189	18
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	3	13	1	2	5	0	1	21	5	1	24	2
Committed Projects												
Kalas Falls	13	0	0	0	0	7	0	33	0	4	19	8
Rogers Farm	7	0	0	0	0	3	0	16	0	2	10	3
Watkins Family Property	9	0	0	0	0	5	0	22	0	3	14	5
Total Committed Traffic	29	0	0	0	0	15	0	71	0	9	43	16
2025 Background Traffic	53	116	8	15	44	17	8	259	46	15	256	36
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	7	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	7	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	15.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	73	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%	30.00%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	53	107
Total Traffic - South Side	0	0	0	0	0	0	0	73	0	0	53	107
Total Project Traffic	0	0	0	0	0	0	0	80	0	0	57	107
2025 Buildout Total	53	116	8	15	44	17	8	339	46	15	313	143
Percent Impact (Approach)		0.0%			0.0%			20.4%			34.8%	

Overall Percent Impact 21.8%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #1 - Current PUD**
Ct. Date	**Balanced with Int #9**
N/S Street:	**Young Street**
E/W Street:	**Central Site Driveway**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	266	511	560	398
Total Pass-By Trips (North + South):	0	0	84	75
North Side Net New Trips:	22	75	72	42
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	244	436	488	356
South Side Pass-By Trips:	0	0	84	75

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR
AM PHF =

Description	Central Site Driveway Eastbound			Central Site Driveway Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	394	0	0	544	0
2019 Existing Traffic	0	0	0	0	0	0	0	394	0	0	544	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	50	0	0	69	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	72	0	0	24	0
Rogers Farm	0	0	0	0	0	0	0	35	0	0	12	0
Watkins Family Property	0	0	0	0	0	0	0	49	0	0	16	0
Total Committed Traffic	0	0	0	0	0	0	0	156	0	0	52	0
2025 Background Traffic	0	0	0	0	0	0	0	600	0	0	665	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	8	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	8	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	10%	4%	0%	0%	4%	21%
Inbound Project Traffic	0	0	0	0	0	0	24	10	0	0	10	51
Percent Assignment Outbound	17%	0%	23%	0%	0%	0%	0%	3%	0%	0%	20%	0%
Outbound Project Traffic	74	0	100	0	0	0	0	13	0	0	87	0
Total Traffic - South Side	74	0	100	0	0	0	24	23	0	0	97	51
Total Project Traffic	74	0	100	0	0	0	24	25	0	0	105	51
2025 Buildout Total	74	0	100	0	0	0	24	625	0	0	770	51
Percent Impact (Approach)		100.0%			-			7.6%			19.0%	

Overall Percent Impact 23.1%

PM PEAK HOUR
PM PHF =

Description	Central Site Driveway Eastbound			Central Site Driveway Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	276	0	0	374	0
2019 Existing Traffic	0	0	0	0	0	0	0	276	0	0	374	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	35	0	0	47	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	46	0	0	79	0
Rogers Farm	0	0	0	0	0	0	0	23	0	0	39	0
Watkins Family Property	0	0	0	0	0	0	0	32	0	0	55	0
Total Committed Traffic	0	0	0	0	0	0	0	101	0	0	173	0
2025 Background Traffic	0	0	0	0	0	0	0	412	0	0	594	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	7	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	7	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	10.00%	4.00%	0%	0%	4.00%	21.00%
Inbound Project Traffic	0	0	0	0	0	0	49	20	0	0	20	102
Percent Assignment Outbound	17.00%	0%	23.00%	0%	0%	0%	0%	3.00%	0%	0%	20.00%	0%
Outbound Project Traffic	61	0	82	0	0	0	0	11	0	0	71	0
Total Traffic - South Side	61	0	82	0	0	0	49	31	0	0	91	102
Total Project Traffic	61	0	82	0	0	0	49	38	0	0	95	102
2025 Buildout Total	61	0	82	0	0	0	49	450	0	0	689	102
Percent Impact (Approach)		100.0%			-			17.4%			24.9%	

Overall Percent Impact 29.8%

Appendix F:

Intersection Spreadsheets

- Residential Build-out

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**US 401 Bypass (WB)**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

Description	US 401 Bypass (WB) Eastbound			US 401 Bypass (WB) Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	48	0	0	0	1114	261	0	0	0	0	0	453
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	48	0	0	0	1114	261	0	0	0	0	0	453
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	6	0	0	0	141	33	0	0	0	0	0	57
Committed Projects												
Kalas Falls	0	0	0	0	30	12	0	0	0	0	0	4
Rogers Farm	0	0	0	0	15	6	0	0	0	0	0	2
Watkins Family Property	0	0	0	0	21	8	0	0	0	0	0	3
Total Committed Traffic	0	0	0	0	66	26	0	0	0	0	0	9
2025 Background Traffic	54	0	0	0	1321	320	0	0	0	0	0	519
Project Traffic - North Side												
Percent Assignment Inbound	25%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	5	0	0	0	0	4	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	25
Total Traffic - North Side	5	0	0	0	0	4	0	0	0	0	0	25
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	19
Percent Assignment Outbound	0%	0%	0%	0%	30%	15%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	118	59	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	118	59	0	0	0	0	0	19
Total Project Traffic	5	0	0	0	118	63	0	0	0	0	0	44
2025 Buildout Total	59	0	0	0	1439	383	0	0	0	0	0	563
Percent Impact (Approach)		8.5%			9.9%			-			7.8%	

Overall Percent Impact 9.4%

PM PEAK HOUR

PM PHF = 0.93

Description	US 401 Bypass (WB) Eastbound			US 401 Bypass (WB) Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	119	0	0	0	422	209	0	0	0	0	0	344
Count Balancing	0	0	0	0	14	0	0	0	0	0	0	0
2019 Existing Traffic	119	0	0	0	436	209	0	0	0	0	0	344
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	15	0	0	0	55	26	0	0	0	0	0	43
Committed Projects												
Kalas Falls	0	0	0	0	19	8	0	0	0	0	0	13
Rogers Farm	0	0	0	0	10	3	0	0	0	0	0	7
Watkins Family Property	0	0	0	0	14	5	0	0	0	0	0	9
Total Committed Traffic	0	0	0	0	43	16	0	0	0	0	0	29
2025 Background Traffic	134	0	0	0	534	251	0	0	0	0	0	416
Project Traffic - North Side												
Percent Assignment Inbound	25.00%	0%	0%	0%	0%	20.00%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	16	0	0	0	0	12	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45.00%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	16
Total Traffic - North Side	16	0	0	0	0	12	0	0	0	0	0	16
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	63
Percent Assignment Outbound	0%	0%	0%	0%	30.00%	15.00%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	74	37	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	74	37	0	0	0	0	0	63
Total Project Traffic	16	0	0	0	74	49	0	0	0	0	0	79
2025 Buildout Total	150	0	0	0	608	300	0	0	0	0	0	495
Percent Impact (Approach)		10.7%			13.5%			-			16.0%	

Overall Percent Impact 14.0%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**US 401 Bypass (EB)**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

	US 401 Bypass (EB) **Eastbound**			US 401 Bypass (EB) **Westbound**			Rolesville Road **Northbound**			Young Street **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	229	564	146	0	0	0	0	490	0	0	0
Count Balancing	0	14	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	243	564	146	0	0	0	0	490	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	31	71	18	0	0	0	0	62	0	0	0
Committed Projects												
Kalas Falls	0	0	14	8	0	0	0	0	66	0	0	0
Rogers Farm	0	0	7	4	0	0	0	0	32	0	0	0
Watkins Family Property	0	0	10	5	0	0	0	0	45	0	0	0
Total Committed Traffic	0	0	31	17	0	0	0	0	143	0	0	0
2025 Background Traffic	0	274	666	181	0	0	0	0	695	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	2	0	0	0
Percent Assignment Outbound	0%	10%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	6	6	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	0	6	6	0	0	0	0	0	2	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	75%	10%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	96	13	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	55%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	217	0	0	0
Total Traffic - South Side	0	0	96	13	0	0	0	0	217	0	0	0
Total Project Traffic	0	6	102	13	0	0	0	0	219	0	0	0
2025 Buildout Total	0	280	768	194	0	0	0	0	914	0	0	0
Percent Impact (Approach)		10.3%			6.7%			24.0%			-	

Overall Percent Impact 15.8%

PM PEAK HOUR

PM PHF = 0.93

	US 401 Bypass (EB) **Eastbound**			US 401 Bypass (EB) **Westbound**			Rolesville Road **Northbound**			Young Street **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	803	385	82	0	0	0	0	334	0	0	0
Count Balancing	0	50	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	853	385	82	0	0	0	0	334	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	108	49	10	0	0	0	0	42	0	0	0
Committed Projects												
Kalas Falls	0	0	46	26	0	0	0	0	42	0	0	0
Rogers Farm	0	0	23	13	0	0	0	0	21	0	0	0
Watkins Family Property	0	0	32	18	0	0	0	0	30	0	0	0
Total Committed Traffic	0	0	101	57	0	0	0	0	93	0	0	0
2025 Background Traffic	0	961	535	149	0	0	0	0	469	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	6	0	0	0
Percent Assignment Outbound	0%	10.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	4	4	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	0	4	4	0	0	0	0	0	6	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	75.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	314	42	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	55.00%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	135	0	0	0
Total Traffic - South Side	0	0	314	42	0	0	0	0	135	0	0	0
Total Project Traffic	0	4	318	42	0	0	0	0	141	0	0	0
2025 Buildout Total	0	965	853	191	0	0	0	0	610	0	0	0
Percent Impact (Approach)		17.7%			22.0%			23.1%			-	

Overall Percent Impact 19.3%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**U-Turn East of Young**
E/W Street:	**US 401 Bypass**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.92

Description	US 401 Bypass **Eastbound** U-Turn	Through	Right	US 401 Bypass **Westbound** Left	Through	Right	U-Turn East of Young **Northbound** Left	Through	Right	U-Turn East of Young **Southbound** Left	Through	Right
2019 Traffic Count	368	321	0	0	1131	0	0	0	0	0	0	0
Count Balancing	0	44	0	0	22	0	0	0	0	0	0	0
2019 Existing Traffic	368	365	0	0	1153	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	46	46	0	0	146	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	42	24	0	0	8	0	0	0	0	0	0	0
Rogers Farm	21	12	0	0	4	0	0	0	0	0	0	0
Watkins Family Property	29	16	0	0	5	0	0	0	0	0	0	0
Total Committed Traffic	92	52	0	0	17	0	0	0	0	0	0	0
2025 Background Traffic	506	463	0	0	1316	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	10%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	2	0	0	0	2	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	6	0	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	2	6	0	0	2	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	13	0	0	0	0	0	0	0
Percent Assignment Outbound	45%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	177	39	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	177	39	0	0	13	0	0	0	0	0	0	0
Total Project Traffic	179	45	0	0	15	0	0	0	0	0	0	0
2025 Buildout Total	685	508	0	0	1331	0	0	0	0	0	0	0
Percent Impact (Approach)		18.8%			1.1%			-			-	

Overall Percent Impact 9.5%

PM PEAK HOUR

PM PHF = 0.98

Description	US 401 Bypass **Eastbound** U-Turn	Through	Right	US 401 Bypass **Westbound** Left	Through	Right	U-Turn East of Young **Northbound** Left	Through	Right	U-Turn East of Young **Southbound** Left	Through	Right
2019 Traffic Count	275	912	0	0	452	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	275	912	0	0	452	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	35	115	0	0	56	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	27	15	0	0	26	0	0	0	0	0	0	0
Rogers Farm	13	8	0	0	13	0	0	0	0	0	0	0
Watkins Family Property	19	11	0	0	18	0	0	0	0	0	0	0
Total Committed Traffic	59	34	0	0	57	0	0	0	0	0	0	0
2025 Background Traffic	369	1061	0	0	565	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	10.00%	0%	0%	0%	10.00%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	6	0	0	0	6	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	4	0	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	6	4	0	0	6	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	10.00%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	42	0	0	0	0	0	0	0
Percent Assignment Outbound	45.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	111	25	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	111	25	0	0	42	0	0	0	0	0	0	0
Total Project Traffic	117	29	0	0	48	0	0	0	0	0	0	0
2025 Buildout Total	486	1090	0	0	613	0	0	0	0	0	0	0
Percent Impact (Approach)		9.3%			7.8%			-			-	

Overall Percent Impact 8.9%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**U-Turn West of Young**
E/W Street:	**US 401 Bypass**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.81

Description	US 401 Bypass **Eastbound** Left	Through	Right	US 401 Bypass **Westbound** U-Turn	Through	Right	U-Turn West of Young **Northbound** Left	Through	Right	U-Turn West of Young **Southbound** Left	Through	Right
2019 Traffic Count	0	553	0	302	1264	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	1	0	0	0	0	0	0	0
2019 Existing Traffic	0	553	0	302	1265	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	70	0	38	160	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	0	10	0	4	30	0	0	0	0	0	0	0
Rogers Farm	0	5	0	2	15	0	0	0	0	0	0	0
Watkins Family Property	0	7	0	3	21	0	0	0	0	0	0	0
Total Committed Traffic	0	22	0	9	66	0	0	0	0	0	0	0
2025 Background Traffic	0	645	0	349	1491	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	5	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	20%	25%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	11	14	0	0	0	0	0	0	0
Total Traffic - North Side	0	5	0	11	14	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	60%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	77	0	19	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	118	0	0	0	0	0	0	0
Total Traffic - South Side	0	77	0	19	118	0	0	0	0	0	0	0
Total Project Traffic	0	82	0	30	132	0	0	0	0	0	0	0
2025 Buildout Total	0	727	0	379	1623	0	0	0	0	0	0	0
Percent Impact (Approach)		11.3%			8.1%			-			-	

Overall Percent Impact 8.9%

PM PEAK HOUR

PM PHF = 0.94

Description	US 401 Bypass **Eastbound** Left	Through	Right	US 401 Bypass **Westbound** U-Turn	Through	Right	U-Turn West of Young **Northbound** Left	Through	Right	U-Turn West of Young **Southbound** Left	Through	Right
2019 Traffic Count	0	1005	0	294	463	0	0	0	0	0	0	0
Count Balancing	0	58	0	0	23	0	0	0	0	0	0	0
2019 Existing Traffic	0	1063	0	294	486	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	135	0	37	61	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	0	33	0	13	19	0	0	0	0	0	0	0
Rogers Farm	0	16	0	7	10	0	0	0	0	0	0	0
Watkins Family Property	0	23	0	9	14	0	0	0	0	0	0	0
Total Committed Traffic	0	72	0	29	43	0	0	0	0	0	0	0
2025 Background Traffic	0	1270	0	360	590	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	25.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	16	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	20.00%	25.00%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	7	9	0	0	0	0	0	0	0
Total Traffic - North Side	0	16	0	7	9	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	60.00%	0%	15.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	251	0	63	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	30.00%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	74	0	0	0	0	0	0	0
Total Traffic - South Side	0	251	0	63	74	0	0	0	0	0	0	0
Total Project Traffic	0	267	0	70	83	0	0	0	0	0	0	0
2025 Buildout Total	0	1537	0	430	673	0	0	0	0	0	0	0
Percent Impact (Approach)		17.4%			13.9%			-			-	

Overall Percent Impact 15.9%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Virginia Water Drive**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.85

	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	22	0	58	0	0	0	24	319	0	0	412	3
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	22	0	58	0	0	0	24	319	0	0	412	3
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	3	0	7	0	0	0	3	40	0	0	52	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	12	0	0	4	0
Rogers Farm	0	0	0	0	0	0	0	6	0	0	2	0
Watkins Family Property	0	0	0	0	0	0	0	8	0	0	3	0
Total Committed Traffic	0	0	0	0	0	0	0	26	0	0	9	0
2025 Background Traffic	25	0	65	0	0	0	27	385	0	0	473	3
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%	20%
Inbound Project Traffic	0	0	0	0	0	0	8	0	0	0	0	4
Percent Assignment Outbound	20%	0%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	11	0	25	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	11	0	25	0	0	0	8	0	0	0	0	4
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	19	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	59	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	59	0	0	19	0
Total Project Traffic	11	0	25	0	0	0	8	59	0	0	19	4
2025 Buildout Total	36	0	90	0	0	0	35	444	0	0	492	7
Percent Impact (Approach)		28.6%			-			14.0%			4.6%	

Overall Percent Impact 11.4%

PM PEAK HOUR

PM PHF = 0.91

	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	15	0	27	0	0	0	35	294	0	0	317	22
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	15	0	27	0	0	0	35	294	0	0	317	22
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	2	0	3	0	0	0	4	37	0	0	40	3
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	8	0	0	13	0
Rogers Farm	0	0	0	0	0	0	0	3	0	0	7	0
Watkins Family Property	0	0	0	0	0	0	0	5	0	0	9	0
Total Committed Traffic	0	0	0	0	0	0	0	16	0	0	29	0
2025 Background Traffic	17	0	30	0	0	0	39	347	0	0	386	25
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	45.00%	0%	0%	0%	0%	20.00%
Inbound Project Traffic	0	0	0	0	0	0	28	0	0	0	0	12
Percent Assignment Outbound	20.00%	0%	45.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	7	0	16	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	7	0	16	0	0	0	28	0	0	0	0	12
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	63	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	15.00%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	37	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	37	0	0	63	0
Total Project Traffic	7	0	16	0	0	0	28	37	0	0	63	12
2025 Buildout Total	24	0	46	0	0	0	67	384	0	0	449	37
Percent Impact (Approach)		32.9%			-			14.4%			15.4%	

Overall Percent Impact 16.2%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Genovesa Drive**
E/W Street:	**Virginia Water Drive**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Genovesa Drive Northbound			Genovesa Drive Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	2	36	0	3	25	0	2	0	4	1	0	4
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	2	36	0	3	25	0	2	0	4	1	0	4
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	5	0	0	3	0	0	0	1	0	0	1
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	0	0	0	0	0
Rogers Farm	0	0	0	0	0	0	0	0	0	0	0	0
Watkins Family Property	0	0	0	0	0	0	0	0	0	0	0	0
Total Committed Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic	2	41	0	3	28	0	2	0	5	1	0	5
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	35%	65%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	6	12	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	35%	0%	65%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	19	0	36	0	0	0
Total Traffic - North Side	0	0	6	12	0	0	19	0	36	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	6	12	0	0	19	0	36	0	0	0
2025 Buildout Total	2	41	6	15	28	0	21	0	41	1	0	5
Percent Impact (Approach)		12.2%			27.9%			88.7%			0.0%	

Overall Percent Impact 45.6%

PM PEAK HOUR

PM PHF = 0.91

	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Genovesa Drive Northbound			Genovesa Drive Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	1	37	2	4	30	3	3	0	6	0	0	1
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	1	37	2	4	30	3	3	0	6	0	0	1
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	5	0	1	4	0	0	0	1	0	0	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	0	0	0	0	0
Rogers Farm	0	0	0	0	0	0	0	0	0	0	0	0
Watkins Family Property	0	0	0	0	0	0	0	0	0	0	0	0
Total Committed Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic	1	42	2	5	34	3	3	0	7	0	0	1
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	35.00%	65.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	22	40	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	35.00%	0%	65.00%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	13	0	23	0	0	0
Total Traffic - North Side	0	0	22	40	0	0	13	0	23	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	22	40	0	0	13	0	23	0	0	0
2025 Buildout Total	1	42	24	45	34	3	16	0	30	0	0	1
Percent Impact (Approach)		32.8%			48.8%			78.3%			0.0%	

Overall Percent Impact 50.0%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Century Farm Road**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.71

Description	Century Farm Road Eastbound			Century Farm Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	1	0	5	0	481	1	0	702	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	1	0	5	0	481	1	0	702	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	1	0	61	0	0	89	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	66	0	0	22	0
Rogers Farm	0	0	0	0	0	0	0	32	0	0	11	0
Watkins Family Property	0	0	0	0	0	0	0	45	0	0	15	0
Total Committed Traffic	0	0	0	0	0	0	0	143	0	0	48	0
2025 Background Traffic	0	0	0	1	0	6	0	685	1	0	839	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	109	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	55%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	217	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	217	0	0	109	0
Total Project Traffic	0	0	0	0	0	0	0	219	0	0	115	0
2025 Buildout Total	0	0	0	1	0	6	0	904	1	0	954	0
Percent Impact (Approach)		-			0.0%			24.2%			12.1%	

Overall Percent Impact 17.9%

PM PEAK HOUR

PM PHF = 0.9

Description	Century Farm Road Eastbound			Century Farm Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	2	0	1	0	336	2	7	461	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	2	0	1	0	336	2	7	461	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	42	0	1	58	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	42	0	0	72	0
Rogers Farm	0	0	0	0	0	0	0	21	0	0	36	0
Watkins Family Property	0	0	0	0	0	0	0	30	0	0	50	0
Total Committed Traffic	0	0	0	0	0	0	0	93	0	0	158	0
2025 Background Traffic	0	0	0	2	0	1	0	471	2	8	677	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85.00%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	356	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	55.00%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	135	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	135	0	0	356	0
Total Project Traffic	0	0	0	0	0	0	0	141	0	0	360	0
2025 Buildout Total	0	0	0	2	0	1	0	612	2	8	1037	0
Percent Impact (Approach)		-			0.0%			23.0%			34.4%	

Overall Percent Impact 30.1%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Quarry Road / Northern Site Driveway**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.74

	Northern Site Driveway Eastbound			Quarry Road Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	27	0	139	0	344	50	189	517	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	27	0	139	0	344	50	189	517	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	3	0	18	0	43	6	24	65	0
Committed Projects												
Kalas Falls	0	0	0	2	0	0	0	66	6	0	22	0
Rogers Farm	0	0	0	1	0	0	0	32	3	0	11	0
Watkins Family Property	0	0	0	1	0	0	0	45	4	0	15	0
Total Committed Traffic	0	0	0	4	0	0	0	143	13	0	48	0
2025 Background Traffic	0	0	0	34	0	157	0	530	69	213	630	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	25%	60%
Inbound Project Traffic	0	0	0	0	0	0	5	0	0	0	32	77
Percent Assignment Outbound	35%	0%	20%	0%	0%	0%	0%	20%	0%	0%	0%	0%
Outbound Project Traffic	139	0	79	0	0	0	0	79	0	0	0	0
Total Traffic - South Side	139	0	79	0	0	0	5	79	0	0	32	77
Total Project Traffic	139	0	79	0	0	0	5	81	0	0	38	77
2025 Buildout Total	139	0	79	34	0	157	5	611	69	213	668	77
Percent Impact (Approach)		100.0%			0.0%			12.6%			12.0%	

Overall Percent Impact 20.4%

PM PEAK HOUR

PM PHF = 0.92

	Northern Site Driveway Eastbound			Quarry Road Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	25	0	78	0	259	17	120	349	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	25	0	78	0	259	17	120	349	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	3	0	10	0	33	2	15	44	0
Committed Projects												
Kalas Falls	0	0	0	7	0	0	0	42	4	0	72	0
Rogers Farm	0	0	0	3	0	0	0	21	2	0	36	0
Watkins Family Property	0	0	0	5	0	0	0	30	2	0	50	0
Total Committed Traffic	0	0	0	15	0	0	0	93	8	0	158	0
2025 Background Traffic	0	0	0	43	0	88	0	385	27	135	551	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4.00%	0%	0%	0%	25.00%	60.00%
Inbound Project Traffic	0	0	0	0	0	0	17	0	0	0	105	250
Percent Assignment Outbound	35.00%	0%	20.00%	0%	0%	0%	0%	20.00%	0%	0%	0%	0%
Outbound Project Traffic	85	0	49	0	0	0	0	49	0	0	0	0
Total Traffic - South Side	85	0	49	0	0	0	17	49	0	0	105	250
Total Project Traffic	85	0	49	0	0	0	17	55	0	0	109	250
2025 Buildout Total	85	0	49	43	0	88	17	440	27	135	660	250
Percent Impact (Approach)		100.0%			0.0%			14.9%			34.4%	

Overall Percent Impact 31.5%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Quarry Road / Northern Site Driveway**

	School PM IN	School PM OUT
Total Net New Trips (North + South):	371	218
Total Pass-By Trips (North + South):	0	0
North Side Net New Trips:	48	28
North Side Pass-By Trips:	0	0
South Side Net New Trips:	323	190
South Side Pass-By Trips:	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

SCHOOL PM PEAK HOUR

AM PHF = 0.67

Description	Northern Site Driveway Eastbound			Quarry Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	31	0	122	0	361	16	59	197	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	31	0	122	0	361	16	59	197	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	4	0	15	0	46	2	7	25	0
Committed Projects												
Kalas Falls	0	0	0	5	0	0	0	33	3	0	56	0
Rogers Farm	0	0	0	2	0	0	0	16	2	0	28	0
Watkins Family Property	0	0	0	4	0	0	0	23	2	0	39	0
Total Committed Traffic	0	0	0	12	0	0	0	72	6	0	123	0
2025 Background Traffic	0	0	0	47	0	137	0	479	24	66	345	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	5	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0
Total Traffic - North Side	0	0	0	0	0	0	0	5	0	0	3	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	25%	60%
Inbound Project Traffic	0	0	0	0	0	0	13	0	0	0	81	194
Percent Assignment Outbound	35%	0%	20%	0%	0%	0%	0%	20%	0%	0%	0%	0%
Outbound Project Traffic	66	0	38	0	0	0	0	38	0	0	0	0
Total Traffic - South Side	66	0	38	0	0	0	13	38	0	0	81	194
Total Project Traffic	66	0	38	0	0	0	13	43	0	0	84	194
2025 Buildout Total	66	0	38	47	0	137	13	522	24	66	429	194
Percent Impact (Approach)		100.0%			0.0%			10.0%			40.4%	

Overall Percent Impact 28.5%

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INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Rolesville High School Drwy/South Site Drwy.**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.68

Description	Southern Site Driveway Eastbound			Rolesville High School Driveway Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	91	0	195	0	233	213	299	231	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	91	0	195	0	233	213	299	231	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	29	0	0	29	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	72	0	0	24	0
Rogers Farm	0	0	0	0	0	0	0	35	0	0	12	0
Watkins Family Property	0	0	0	0	0	0	0	49	0	0	16	0
Total Committed Traffic	0	0	0	0	0	0	0	156	0	0	52	0
2025 Background Traffic	0	0	0	91	0	195	0	418	213	299	312	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1%	14%	0%	0%	0%	4%
Inbound Project Traffic	0	0	0	0	0	0	1	18	0	0	0	5
Percent Assignment Outbound	3%	0%	2%	0%	0%	0%	0%	0%	0%	0%	43%	0%
Outbound Project Traffic	12	0	8	0	0	0	0	0	0	0	169	0
Total Traffic - South Side	12	0	8	0	0	0	1	18	0	0	169	5
Total Project Traffic	12	0	8	0	0	0	1	20	0	0	175	5
2025 Buildout Total	12	0	8	91	0	195	1	438	213	299	487	5
Percent Impact (Approach)		100.0%			0.0%			3.2%			22.8%	

Overall Percent Impact 12.6%

PM PEAK HOUR

PM PHF = 0.94

Description	Southern Site Driveway Eastbound			Rolesville High School Driveway Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	20	0	81	0	247	13	80	250	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	20	0	81	0	247	13	80	250	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	31	0	0	32	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	46	0	0	79	0
Rogers Farm	0	0	0	0	0	0	0	23	0	0	39	0
Watkins Family Property	0	0	0	0	0	0	0	32	0	0	55	0
Total Committed Traffic	0	0	0	0	0	0	0	101	0	0	173	0
2025 Background Traffic	0	0	0	20	0	81	0	379	13	80	455	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1.00%	14.00%	0%	0%	0%	4.00%
Inbound Project Traffic	0	0	0	0	0	0	4	59	0	0	0	17
Percent Assignment Outbound	3.00%	0%	2.00%	0%	0%	0%	0%	0%	0%	0%	43.00%	0%
Outbound Project Traffic	7	0	5	0	0	0	0	0	0	0	106	0
Total Traffic - South Side	7	0	5	0	0	0	4	59	0	0	106	17
Total Project Traffic	7	0	5	0	0	0	4	65	0	0	110	17
2025 Buildout Total	7	0	5	20	0	81	4	444	13	80	565	17
Percent Impact (Approach)		100.0%			0.0%			15.0%			19.2%	

Overall Percent Impact 16.8%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Rolesville High School Drwy/South Site Drwy.**

	School PM IN	School PM OUT
Total Net New Trips (North + South):	371	218
Total Pass-By Trips (North + South):	0	0
North Side Net New Trips:	48	28
North Side Pass-By Trips:	0	0
South Side Net New Trips:	323	190
South Side Pass-By Trips:	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

SCHOOL PM PEAK HOUR

AM PHF = 0.54

Description	Southern Site Driveway **Eastbound**			Rolesville High School Driveway **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	105	0	221	0	154	16	41	185	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	105	0	221	0	154	16	41	185	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	19	0	0	23	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	36	0	0	61	0
Rogers Farm	0	0	0	0	0	0	0	18	0	0	30	0
Watkins Family Property	0	0	0	0	0	0	0	25	0	0	43	0
Total Committed Traffic	0	0	0	0	0	0	0	79	0	0	135	0
2025 Background Traffic	0	0	0	105	0	221	0	252	16	41	343	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	5	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0
Total Traffic - North Side	0	0	0	0	0	0	0	5	0	0	3	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1%	14%	0%	0%	0%	4%
Inbound Project Traffic	0	0	0	0	0	0	3	45	0	0	0	13
Percent Assignment Outbound	3%	0%	2%	0%	0%	0%	0%	0%	0%	0%	43%	0%
Outbound Project Traffic	6	0	4	0	0	0	0	0	0	0	82	0
Total Traffic - South Side	6	0	4	0	0	0	3	45	0	0	82	13
Total Project Traffic	6	0	4	0	0	0	3	50	0	0	85	13
2025 Buildout Total	6	0	4	105	0	221	3	302	16	41	428	13
Percent Impact (Approach)		100.0%			0.0%			16.5%			20.4%	

Overall Percent Impact 14.1%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**1/29/219**
N/S Street:	**Young Street**
E/W Street:	**Mitchell Mill Road**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.78

Description	Mitchell Mill Road **Eastbound**			Mitchell Mill Road **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	102	15	2	46	163	11	8	224	7	3	203	63
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	102	15	2	46	163	11	8	224	7	3	203	63
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	13	2	0	6	21	1	1	28	1	0	26	8
Committed Projects												
Kalas Falls	4	0	0	0	0	2	0	10	0	6	30	12
Rogers Farm	2	0	0	0	0	1	0	5	0	3	15	6
Watkins Family Property	3	0	0	0	0	1	0	7	0	4	20	8
Total Committed Traffic	9	0	0	0	0	4	0	22	0	13	65	26
2025 Background Traffic	124	17	2	52	184	16	9	274	8	16	294	97
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	19	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	30%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	59	118
Total Traffic - South Side	0	0	0	0	0	0	0	19	0	0	59	118
Total Project Traffic	0	0	0	0	0	0	0	21	0	0	65	118
2025 Buildout Total	124	17	2	52	184	16	9	295	8	16	359	215
Percent Impact (Approach)		0.0%			0.0%			6.7%			31.0%	

Overall Percent Impact 15.7%

PM PEAK HOUR

PM PHF = 0.8

Description	Mitchell Mill Road **Eastbound**			Mitchell Mill Road **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	21	103	7	13	39	2	7	167	41	5	189	18
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	21	103	7	13	39	2	7	167	41	5	189	18
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	3	13	1	2	5	0	1	21	5	1	24	2
Committed Projects												
Kalas Falls	13	0	0	0	0	7	0	33	0	4	19	8
Rogers Farm	7	0	0	0	0	3	0	16	0	2	10	3
Watkins Family Property	9	0	0	0	0	5	0	22	0	3	14	5
Total Committed Traffic	29	0	0	0	0	15	0	71	0	9	43	16
2025 Background Traffic	53	116	8	15	44	17	8	259	46	15	256	36
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	15.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	63	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%	30.00%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	37	74
Total Traffic - South Side	0	0	0	0	0	0	0	63	0	0	37	74
Total Project Traffic	0	0	0	0	0	0	0	69	0	0	41	74
2025 Buildout Total	53	116	8	15	44	17	8	328	46	15	297	110
Percent Impact (Approach)		0.0%			0.0%			18.1%			27.3%	

Overall Percent Impact 17.4%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #2 - Residential-Only**
Ct. Date	**Balanced with Int #9**
N/S Street:	**Young Street**
E/W Street:	**Central Site Driveway**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	146	449	481	282
Total Pass-By Trips (North + South):	0	0	0	0
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	128	394	419	246
South Side Pass-By Trips:	0	0	0	0

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR
AM PHF =

	Central Site Driveway Eastbound			Central Site Driveway Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	394	0	0	544	0
2019 Existing Traffic	0	0	0	0	0	0	0	394	0	0	544	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	50	0	0	69	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	72	0	0	24	0
Rogers Farm	0	0	0	0	0	0	0	35	0	0	12	0
Watkins Family Property	0	0	0	0	0	0	0	49	0	0	16	0
Total Committed Traffic	0	0	0	0	0	0	0	156	0	0	52	0
2025 Background Traffic	0	0	0	0	0	0	0	600	0	0	665	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	10%	4%	0%	0%	4%	21%
Inbound Project Traffic	0	0	0	0	0	0	13	5	0	0	5	27
Percent Assignment Outbound	17%	0%	23%	0%	0%	0%	0%	3%	0%	0%	20%	0%
Outbound Project Traffic	67	0	91	0	0	0	0	12	0	0	79	0
Total Traffic - South Side	67	0	91	0	0	0	13	17	0	0	84	27
Total Project Traffic	67	0	91	0	0	0	13	19	0	0	90	27
2025 Buildout Total	67	0	91	0	0	0	13	619	0	0	755	27
Percent Impact (Approach)		100.0%			-			5.1%			15.0%	

Overall Percent Impact 19.5%

PM PEAK HOUR
PM PHF =

	Central Site Driveway Eastbound			Central Site Driveway Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	276	0	0	374	0
2019 Existing Traffic	0	0	0	0	0	0	0	276	0	0	374	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	35	0	0	47	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	46	0	0	79	0
Rogers Farm	0	0	0	0	0	0	0	23	0	0	39	0
Watkins Family Property	0	0	0	0	0	0	0	32	0	0	55	0
Total Committed Traffic	0	0	0	0	0	0	0	101	0	0	173	0
2025 Background Traffic	0	0	0	0	0	0	0	412	0	0	594	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	10.00%	4.00%	0%	0%	4.00%	21.00%
Inbound Project Traffic	0	0	0	0	0	0	42	17	0	0	17	88
Percent Assignment Outbound	17.00%	0%	23.00%	0%	0%	0%	0%	3.00%	0%	0%	20.00%	0%
Outbound Project Traffic	42	0	57	0	0	0	0	7	0	0	49	0
Total Traffic - South Side	42	0	57	0	0	0	42	24	0	0	66	88
Total Project Traffic	42	0	57	0	0	0	42	30	0	0	70	88
2025 Buildout Total	42	0	57	0	0	0	42	442	0	0	664	88
Percent Impact (Approach)		100.0%			-			14.9%			21.0%	

Overall Percent Impact 24.6%

Appendix G:

Intersection Spreadsheets

- Commercial Build-out

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**US 401 Bypass (WB)**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

Description	US 401 Bypass (WB) **Eastbound** Left	Through	Right	US 401 Bypass (WB) **Westbound** Left	Through	Right	Young Street **Northbound** Left	Through	Right	Young Street **Southbound** Left	Through	Right
2019 Traffic Count	48	0	0	0	1114	261	0	0	0	0	0	453
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	48	0	0	0	1114	261	0	0	0	0	0	453
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	6	0	0	0	141	33	0	0	0	0	0	57
Committed Projects												
Kalas Falls	0	0	0	0	30	12	0	0	0	0	0	4
Rogers Farm	0	0	0	0	15	6	0	0	0	0	0	2
Watkins Family Property	0	0	0	0	21	8	0	0	0	0	0	3
Total Committed Traffic	0	0	0	0	66	26	0	0	0	0	0	9
2025 Background Traffic	54	0	0	0	1321	320	0	0	0	0	0	519
Project Traffic - North Side												
Percent Assignment Inbound	25%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	5	0	0	0	0	4	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	25
Total Traffic - North Side	5	0	0	0	0	4	0	0	0	0	0	25
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	38
Percent Assignment Outbound	0%	0%	0%	0%	30%	15%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	140	70	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	140	70	0	0	0	0	0	38
Total Project Traffic	5	0	0	0	140	74	0	0	0	0	0	63
2025 Buildout Total	59	0	0	0	1461	394	0	0	0	0	0	582
Percent Impact (Approach)		8.5%			11.5%			-			10.8%	

Overall Percent Impact 11.3%

PM PEAK HOUR

PM PHF = 0.93

Description	US 401 Bypass (WB) **Eastbound** Left	Through	Right	US 401 Bypass (WB) **Westbound** Left	Through	Right	Young Street **Northbound** Left	Through	Right	Young Street **Southbound** Left	Through	Right
2019 Traffic Count	119	0	0	0	422	209	0	0	0	0	0	344
Count Balancing	0	0	0	0	14	0	0	0	0	0	0	0
2019 Existing Traffic	119	0	0	0	436	209	0	0	0	0	0	344
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	15	0	0	0	55	26	0	0	0	0	0	43
Committed Projects												
Kalas Falls	0	0	0	0	19	8	0	0	0	0	0	13
Rogers Farm	0	0	0	0	10	3	0	0	0	0	0	7
Watkins Family Property	0	0	0	0	14	5	0	0	0	0	0	9
Total Committed Traffic	0	0	0	0	43	16	0	0	0	0	0	29
2025 Background Traffic	134	0	0	0	534	251	0	0	0	0	0	416
Project Traffic - North Side												
Percent Assignment Inbound	25.00%	0%	0%	0%	0%	20.00%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	16	0	0	0	0	12	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45.00%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	16
Total Traffic - North Side	16	0	0	0	0	12	0	0	0	0	0	16
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	77
Percent Assignment Outbound	0%	0%	0%	0%	30.00%	15.00%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	113	56	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	113	56	0	0	0	0	0	77
Total Project Traffic	16	0	0	0	113	68	0	0	0	0	0	93
2025 Buildout Total	150	0	0	0	647	319	0	0	0	0	0	509
Percent Impact (Approach)		10.7%			18.7%			-			18.3%	

Overall Percent Impact 17.8%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**US 401 Bypass (EB)**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

Description	US 401 Bypass (EB) Eastbound Left	Through	Right	US 401 Bypass (EB) Westbound Left	Through	Right	Rolesville Road Northbound Left	Through	Right	Young Street Southbound Left	Through	Right
2019 Traffic Count	0	229	564	146	0	0	0	0	490	0	0	0
Count Balancing	0	14	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	243	564	146	0	0	0	0	490	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	31	71	18	0	0	0	0	62	0	0	0
Committed Projects												
Kalas Falls	0	0	14	8	0	0	0	0	66	0	0	0
Rogers Farm	0	0	7	4	0	0	0	0	32	0	0	0
Watkins Family Property	0	0	10	5	0	0	0	0	45	0	0	0
Total Committed Traffic	0	0	31	17	0	0	0	0	143	0	0	0
2025 Background Traffic	0	274	666	181	0	0	0	0	695	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	2	0	0	0
Percent Assignment Outbound	0%	10%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	6	6	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	0	6	6	0	0	0	0	0	2	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	75%	10%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	190	25	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	55%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	257	0	0	0
Total Traffic - South Side	0	0	190	25	0	0	0	0	257	0	0	0
Total Project Traffic	0	6	196	25	0	0	0	0	259	0	0	0
2025 Buildout Total	0	280	862	206	0	0	0	0	954	0	0	0
Percent Impact (Approach)		17.7%			12.1%			27.1%			-	

Overall Percent Impact 21.1%

PM PEAK HOUR

PM PHF = 0.93

Description	US 401 Bypass (EB) Eastbound Left	Through	Right	US 401 Bypass (EB) Westbound Left	Through	Right	Rolesville Road Northbound Left	Through	Right	Young Street Southbound Left	Through	Right
2019 Traffic Count	0	803	385	82	0	0	0	0	334	0	0	0
Count Balancing	0	50	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	853	385	82	0	0	0	0	334	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	108	49	10	0	0	0	0	42	0	0	0
Committed Projects												
Kalas Falls	0	0	46	26	0	0	0	0	42	0	0	0
Rogers Farm	0	0	23	13	0	0	0	0	21	0	0	0
Watkins Family Property	0	0	32	18	0	0	0	0	30	0	0	0
Total Committed Traffic	0	0	101	57	0	0	0	0	93	0	0	0
2025 Background Traffic	0	961	535	149	0	0	0	0	469	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	6	0	0	0
Percent Assignment Outbound	0%	10.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	4	4	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	0	4	4	0	0	0	0	0	6	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	75.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	386	51	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	55.00%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	207	0	0	0
Total Traffic - South Side	0	0	386	51	0	0	0	0	207	0	0	0
Total Project Traffic	0	4	390	51	0	0	0	0	213	0	0	0
2025 Buildout Total	0	965	925	200	0	0	0	0	682	0	0	0
Percent Impact (Approach)		20.8%			25.5%			31.2%			-	

Overall Percent Impact 23.7%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**U-Turn East of Young**
E/W Street:	**US 401 Bypass**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.92

Description	US 401 Bypass **Eastbound** U-Turn	Through	Right	US 401 Bypass **Westbound** Left	Through	Right	U-Turn East of Young **Northbound** Left	Through	Right	U-Turn East of Young **Southbound** Left	Through	Right
2019 Traffic Count	368	321	0	0	1131	0	0	0	0	0	0	0
Count Balancing	0	44	0	0	22	0	0	0	0	0	0	0
2019 Existing Traffic	368	365	0	0	1153	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	46	46	0	0	146	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	42	24	0	0	8	0	0	0	0	0	0	0
Rogers Farm	21	12	0	0	4	0	0	0	0	0	0	0
Watkins Family Property	29	16	0	0	5	0	0	0	0	0	0	0
Total Committed Traffic	92	52	0	0	17	0	0	0	0	0	0	0
2025 Background Traffic	506	463	0	0	1316	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	10%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	2	0	0	0	2	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	6	0	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	2	6	0	0	2	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	25	0	0	0	0	0	0	0
Percent Assignment Outbound	45%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	211	47	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	211	47	0	0	25	0	0	0	0	0	0	0
Total Project Traffic	213	53	0	0	27	0	0	0	0	0	0	0
2025 Buildout Total	719	516	0	0	1343	0	0	0	0	0	0	0
Percent Impact (Approach)		21.5%			2.0%			-			-	

Overall Percent Impact 11.4%

PM PEAK HOUR

PM PHF = 0.98

Description	US 401 Bypass **Eastbound** U-Turn	Through	Right	US 401 Bypass **Westbound** Left	Through	Right	U-Turn East of Young **Northbound** Left	Through	Right	U-Turn East of Young **Southbound** Left	Through	Right
2019 Traffic Count	275	912	0	0	452	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	275	912	0	0	452	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	35	115	0	0	56	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	27	15	0	0	26	0	0	0	0	0	0	0
Rogers Farm	13	8	0	0	13	0	0	0	0	0	0	0
Watkins Family Property	19	11	0	0	18	0	0	0	0	0	0	0
Total Committed Traffic	59	34	0	0	57	0	0	0	0	0	0	0
2025 Background Traffic	369	1061	0	0	565	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	10.00%	0%	0%	0%	10.00%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	6	0	0	0	6	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	4	0	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	6	4	0	0	6	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	10.00%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	51	0	0	0	0	0	0	0
Percent Assignment Outbound	45.00%	10.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	169	38	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	169	38	0	0	51	0	0	0	0	0	0	0
Total Project Traffic	175	42	0	0	57	0	0	0	0	0	0	0
2025 Buildout Total	544	1103	0	0	622	0	0	0	0	0	0	0
Percent Impact (Approach)		13.2%			9.2%			-			-	

Overall Percent Impact 12.1%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**U-Turn West of Young**
E/W Street:	**US 401 Bypass**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.81

Description	US 401 Bypass **Eastbound** Left	Through	Right	US 401 Bypass **Westbound** U-Turn	Through	Right	U-Turn West of Young **Northbound** Left	Through	Right	U-Turn West of Young **Southbound** Left	Through	Right
2019 Traffic Count	0	553	0	302	1264	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	1	0	0	0	0	0	0	0
2019 Existing Traffic	0	553	0	302	1265	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	70	0	38	160	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	0	10	0	4	30	0	0	0	0	0	0	0
Rogers Farm	0	5	0	2	15	0	0	0	0	0	0	0
Watkins Family Property	0	7	0	3	21	0	0	0	0	0	0	0
Total Committed Traffic	0	22	0	9	66	0	0	0	0	0	0	0
2025 Background Traffic	0	645	0	349	1491	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	5	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	20%	25%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	11	14	0	0	0	0	0	0	0
Total Traffic - North Side	0	5	0	11	14	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	60%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	152	0	38	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	140	0	0	0	0	0	0	0
Total Traffic - South Side	0	152	0	38	140	0	0	0	0	0	0	0
Total Project Traffic	0	157	0	49	154	0	0	0	0	0	0	0
2025 Buildout Total	0	802	0	398	1645	0	0	0	0	0	0	0
Percent Impact (Approach)		19.6%			9.9%			-			-	

Overall Percent Impact 12.7%

PM PEAK HOUR

PM PHF = 0.94

Description	US 401 Bypass **Eastbound** Left	Through	Right	US 401 Bypass **Westbound** U-Turn	Through	Right	U-Turn West of Young **Northbound** Left	Through	Right	U-Turn West of Young **Southbound** Left	Through	Right
2019 Traffic Count	0	1005	0	294	463	0	0	0	0	0	0	0
Count Balancing	0	58	0	0	23	0	0	0	0	0	0	0
2019 Existing Traffic	0	1063	0	294	486	0	0	0	0	0	0	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	135	0	37	61	0	0	0	0	0	0	0
Committed Projects												
Kalas Falls	0	33	0	13	19	0	0	0	0	0	0	0
Rogers Farm	0	16	0	7	10	0	0	0	0	0	0	0
Watkins Family Property	0	23	0	9	14	0	0	0	0	0	0	0
Total Committed Traffic	0	72	0	29	43	0	0	0	0	0	0	0
2025 Background Traffic	0	1270	0	360	590	0	0	0	0	0	0	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	25.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	16	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	20.00%	25.00%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	7	9	0	0	0	0	0	0	0
Total Traffic - North Side	0	16	0	7	9	0	0	0	0	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	60.00%	0%	15.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	308	0	77	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	30.00%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	113	0	0	0	0	0	0	0
Total Traffic - South Side	0	308	0	77	113	0	0	0	0	0	0	0
Total Project Traffic	0	324	0	84	122	0	0	0	0	0	0	0
2025 Buildout Total	0	1594	0	444	712	0	0	0	0	0	0	0
Percent Impact (Approach)		20.3%			17.8%			-			-	

Overall Percent Impact 19.3%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Virginia Water Drive**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.85

	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	22	0	58	0	0	0	24	319	0	0	412	3
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	22	0	58	0	0	0	24	319	0	0	412	3
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	3	0	7	0	0	0	3	40	0	0	52	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	12	0	0	4	0
Rogers Farm	0	0	0	0	0	0	0	6	0	0	2	0
Watkins Family Property	0	0	0	0	0	0	0	8	0	0	3	0
Total Committed Traffic	0	0	0	0	0	0	0	26	0	0	9	0
2025 Background Traffic	25	0	65	0	0	0	27	385	0	0	473	3
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%	20%
Inbound Project Traffic	0	0	0	0	0	0	8	0	0	0	0	4
Percent Assignment Outbound	20%	0%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	11	0	25	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	11	0	25	0	0	0	8	0	0	0	0	4
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	38	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	70	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	70	0	0	38	0
Total Project Traffic	11	0	25	0	0	0	8	70	0	0	38	4
2025 Buildout Total	36	0	90	0	0	0	35	455	0	0	511	7
Percent Impact (Approach)		28.6%			-			15.9%			8.1%	

Overall Percent Impact 13.8%

PM PEAK HOUR

PM PHF = 0.91

	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	15	0	27	0	0	0	35	294	0	0	317	22
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	15	0	27	0	0	0	35	294	0	0	317	22
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	2	0	3	0	0	0	4	37	0	0	40	3
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	8	0	0	13	0
Rogers Farm	0	0	0	0	0	0	0	3	0	0	7	0
Watkins Family Property	0	0	0	0	0	0	0	5	0	0	9	0
Total Committed Traffic	0	0	0	0	0	0	0	16	0	0	29	0
2025 Background Traffic	17	0	30	0	0	0	39	347	0	0	386	25
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	45.00%	0%	0%	0%	0%	20.00%
Inbound Project Traffic	0	0	0	0	0	0	28	0	0	0	0	12
Percent Assignment Outbound	20.00%	0%	45.00%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	7	0	16	0	0	0	0	0	0	0	0	0
Total Traffic - North Side	7	0	16	0	0	0	28	0	0	0	0	12
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	77	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	15.00%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	56	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	56	0	0	77	0
Total Project Traffic	7	0	16	0	0	0	28	56	0	0	77	12
2025 Buildout Total	24	0	46	0	0	0	67	403	0	0	463	37
Percent Impact (Approach)		32.9%			-			17.9%			17.8%	

Overall Percent Impact 18.8%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Genovesa Drive**
E/W Street:	**Virginia Water Drive**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.84

Description	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Genovesa Drive Northbound			Genovesa Drive Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	2	36	0	3	25	0	2	0	4	1	0	4
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	2	36	0	3	25	0	2	0	4	1	0	4
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	5	0	0	3	0	0	0	1	0	0	1
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	0	0	0	0	0
Rogers Farm	0	0	0	0	0	0	0	0	0	0	0	0
Watkins Family Property	0	0	0	0	0	0	0	0	0	0	0	0
Total Committed Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic	2	41	0	3	28	0	2	0	5	1	0	5
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	35%	65%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	6	12	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	35%	0%	65%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	19	0	36	0	0	0
Total Traffic - North Side	0	0	6	12	0	0	19	0	36	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	6	12	0	0	19	0	36	0	0	0
2025 Buildout Total	2	41	6	15	28	0	21	0	41	1	0	5
Percent Impact (Approach)		12.2%			27.9%			88.7%			0.0%	

Overall Percent Impact 45.6%

PM PEAK HOUR

PM PHF = 0.91

Description	Virginia Water Drive Eastbound			Virginia Water Drive Westbound			Genovesa Drive Northbound			Genovesa Drive Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	1	37	2	4	30	3	3	0	6	0	0	1
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	1	37	2	4	30	3	3	0	6	0	0	1
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	5	0	1	4	0	0	0	1	0	0	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	0	0	0	0	0
Rogers Farm	0	0	0	0	0	0	0	0	0	0	0	0
Watkins Family Property	0	0	0	0	0	0	0	0	0	0	0	0
Total Committed Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2025 Background Traffic	1	42	2	5	34	3	3	0	7	0	0	1
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	35.00%	65.00%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	22	40	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	35.00%	0%	65.00%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	13	0	23	0	0	0
Total Traffic - North Side	0	0	22	40	0	0	13	0	23	0	0	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	22	40	0	0	13	0	23	0	0	0
2025 Buildout Total	1	42	24	45	34	3	16	0	30	0	0	1
Percent Impact (Approach)		32.8%			48.8%			78.3%			0.0%	

Overall Percent Impact 50.0%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Century Farm Road**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.71

Description	Century Farm Road Eastbound			Century Farm Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	1	0	5	0	481	1	0	702	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	1	0	5	0	481	1	0	702	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	1	0	61	0	0	89	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	66	0	0	22	0
Rogers Farm	0	0	0	0	0	0	0	32	0	0	11	0
Watkins Family Property	0	0	0	0	0	0	0	45	0	0	15	0
Total Committed Traffic	0	0	0	0	0	0	0	143	0	0	48	0
2025 Background Traffic	0	0	0	1	0	6	0	685	1	0	839	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	215	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	55%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	257	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	257	0	0	215	0
Total Project Traffic	0	0	0	0	0	0	0	259	0	0	221	0
2025 Buildout Total	0	0	0	1	0	6	0	944	1	0	1060	0
Percent Impact (Approach)		-			0.0%			27.4%			20.8%	

Overall Percent Impact 23.9%

PM PEAK HOUR

PM PHF = 0.9

Description	Century Farm Road Eastbound			Century Farm Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	2	0	1	0	336	2	7	461	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	2	0	1	0	336	2	7	461	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	42	0	1	58	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	42	0	0	72	0
Rogers Farm	0	0	0	0	0	0	0	21	0	0	36	0
Watkins Family Property	0	0	0	0	0	0	0	30	0	0	50	0
Total Committed Traffic	0	0	0	0	0	0	0	93	0	0	158	0
2025 Background Traffic	0	0	0	2	0	1	0	471	2	8	677	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85.00%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	437	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	55.00%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	207	0	0	0	0
Total Traffic - South Side	0	0	0	0	0	0	0	207	0	0	437	0
Total Project Traffic	0	0	0	0	0	0	0	213	0	0	441	0
2025 Buildout Total	0	0	0	2	0	1	0	684	2	8	1118	0
Percent Impact (Approach)		-			0.0%			31.0%			39.2%	

Overall Percent Impact 36.0%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Quarry Road / Northern Site Driveway**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.74

Description	Northern Site Driveway Eastbound Left	Through	Right	Quarry Road Westbound Left	Through	Right	Young Street Northbound Left	Through	Right	Young Street Southbound Left	Through	Right
2019 Traffic Count	0	0	0	27	0	139	0	344	50	189	517	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	27	0	139	0	344	50	189	517	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	3	0	18	0	43	6	24	65	0
Committed Projects												
Kalas Falls	0	0	0	2	0	0	0	66	6	0	22	0
Rogers Farm	0	0	0	1	0	0	0	32	3	0	11	0
Watkins Family Property	0	0	0	1	0	0	0	45	4	0	15	0
Total Committed Traffic	0	0	0	4	0	0	0	143	13	0	48	0
2025 Background Traffic	0	0	0	34	0	157	0	530	69	213	630	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	25%	60%
Inbound Project Traffic	0	0	0	0	0	0	10	0	0	0	63	152
Percent Assignment Outbound	35%	0%	20%	0%	0%	0%	0%	20%	0%	0%	0%	0%
Outbound Project Traffic	163	0	94	0	0	0	0	94	0	0	0	0
Total Traffic - South Side	163	0	94	0	0	0	10	94	0	0	63	152
Total Project Traffic	163	0	94	0	0	0	10	96	0	0	69	152
2025 Buildout Total	163	0	94	34	0	157	10	626	69	213	699	152
Percent Impact (Approach)		100.0%			0.0%			15.0%			20.8%	

Overall Percent Impact 26.3%

PM PEAK HOUR

PM PHF = 0.92

Description	Northern Site Driveway Eastbound Left	Through	Right	Quarry Road Westbound Left	Through	Right	Young Street Northbound Left	Through	Right	Young Street Southbound Left	Through	Right
2019 Traffic Count	0	0	0	25	0	78	0	259	17	120	349	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	25	0	78	0	259	17	120	349	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	3	0	10	0	33	2	15	44	0
Committed Projects												
Kalas Falls	0	0	0	7	0	0	0	42	4	0	72	0
Rogers Farm	0	0	0	3	0	0	0	21	2	0	36	0
Watkins Family Property	0	0	0	5	0	0	0	30	2	0	50	0
Total Committed Traffic	0	0	0	15	0	0	0	93	8	0	158	0
2025 Background Traffic	0	0	0	43	0	88	0	385	27	135	551	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4.00%	0%	0%	0%	25.00%	60.00%
Inbound Project Traffic	0	0	0	0	0	0	21	0	0	0	129	308
Percent Assignment Outbound	35.00%	0%	20.00%	0%	0%	0%	0%	20.00%	0%	0%	0%	0%
Outbound Project Traffic	132	0	75	0	0	0	0	75	0	0	0	0
Total External Site Traffic	132	0	75	0	0	0	21	75	0	0	129	308
Pass-By Capture Reduction	0	0	0	0	0	0	0	-37	0	0	-56	0
Pass-By Capture Assignment	33	0	50	0	0	0	37	0	0	0	0	56
Total Pass-By Traffic	33	0	50	0	0	0	37	-37	0	0	-56	56
Total Traffic - South Side	165	0	125	0	0	0	58	38	0	0	73	364
Total Project Traffic	165	0	125	0	0	0	58	44	0	0	77	364
2025 Buildout Total	165	0	125	43	0	88	58	429	27	135	628	364
Percent Impact (Approach)		100.0%			0.0%			19.8%			39.1%	

Overall Percent Impact 40.4%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Quarry Road / Northern Site Driveway**

	School PM IN	School PM OUT
Total Net New Trips (North + South):	466	348
Total Pass-By Trips (North + South):	0	0
North Side Net New Trips:	48	28
North Side Pass-By Trips:	0	0
South Side Net New Trips:	418	320
South Side Pass-By Trips:	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

SCHOOL PM PEAK HOUR

AM PHF = 0.67

Description	Northern Site Driveway Eastbound			Quarry Road Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	31	0	122	0	361	16	59	197	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	31	0	122	0	361	16	59	197	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	4	0	15	0	46	2	7	25	0
Committed Projects												
Kalas Falls	0	0	0	5	0	0	0	33	3	0	56	0
Rogers Farm	0	0	0	2	0	0	0	16	2	0	28	0
Watkins Family Property	0	0	0	4	0	0	0	23	2	0	39	0
Total Committed Traffic	0	0	0	12	0	0	0	72	6	0	123	0
2025 Background Traffic	0	0	0	47	0	137	0	479	24	66	345	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	5	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0
Total Traffic - North Side	0	0	0	0	0	0	0	5	0	0	3	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	25%	60%
Inbound Project Traffic	0	0	0	0	0	0	17	0	0	0	104	251
Percent Assignment Outbound	35%	0%	20%	0%	0%	0%	0%	20%	0%	0%	0%	0%
Outbound Project Traffic	112	0	64	0	0	0	0	64	0	0	0	0
Total External Site Traffic	112	0	64	0	0	0	17	64	0	0	104	251
Pass-By Capture Reduction	0	0	0	0	0	0	0	-60	0	0	-33	0
Pass-By Capture Assignment	54	0	29	0	0	0	60	0	0	0	0	33
Total Pass-By Traffic	54	0	29	0	0	0	60	-60	0	0	-33	33
Total Traffic - South Side	166	0	93	0	0	0	77	4	0	0	71	284
Total Project Traffic	166	0	93	0	0	0	77	9	0	0	74	284
2025 Buildout Total	166	0	93	47	0	137	77	488	24	66	419	284
Percent Impact (Approach)		100.0%			0.0%			14.6%			46.6%	

Overall Percent Impact 39.0%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Rolesville High School Drwy/South Site Drwy.**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.68

	Southern Site Driveway Eastbound			Rolesville High School Driveway Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	91	0	195	0	233	213	299	231	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	91	0	195	0	233	213	299	231	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	29	0	0	29	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	72	0	0	24	0
Rogers Farm	0	0	0	0	0	0	0	35	0	0	12	0
Watkins Family Property	0	0	0	0	0	0	0	49	0	0	16	0
Total Committed Traffic	0	0	0	0	0	0	0	156	0	0	52	0
2025 Background Traffic	0	0	0	91	0	195	0	418	213	299	312	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1%	14%	0%	0%	0%	4%
Inbound Project Traffic	0	0	0	0	0	0	3	35	0	0	0	10
Percent Assignment Outbound	3%	0%	2%	0%	0%	0%	0%	0%	0%	0%	43%	0%
Outbound Project Traffic	14	0	9	0	0	0	0	0	0	0	201	0
Total Traffic - South Side	14	0	9	0	0	0	3	35	0	0	201	10
Total Project Traffic	14	0	9	0	0	0	3	37	0	0	207	10
2025 Buildout Total	14	0	9	91	0	195	3	455	213	299	519	10
Percent Impact (Approach)		100.0%			0.0%			6.0%			26.2%	

Overall Percent Impact 15.5%

PM PEAK HOUR

PM PHF = 0.94

	Southern Site Driveway Eastbound			Rolesville High School Driveway Westbound			Young Street Northbound			Young Street Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	20	0	81	0	247	13	80	250	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	20	0	81	0	247	13	80	250	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	31	0	0	32	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	46	0	0	79	0
Rogers Farm	0	0	0	0	0	0	0	23	0	0	39	0
Watkins Family Property	0	0	0	0	0	0	0	32	0	0	55	0
Total Committed Traffic	0	0	0	0	0	0	0	101	0	0	173	0
2025 Background Traffic	0	0	0	20	0	81	0	379	13	80	455	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1.00%	14.00%	0%	0%	0%	4.00%
Inbound Project Traffic	0	0	0	0	0	0	5	72	0	0	0	21
Percent Assignment Outbound	3.00%	0%	2.00%	0%	0%	0%	0%	0%	0%	0%	43.00%	0%
Outbound Project Traffic	11	0	8	0	0	0	0	0	0	0	162	0
Total Traffic - South Side	11	0	8	0	0	0	5	72	0	0	162	21
Total Project Traffic	11	0	8	0	0	0	5	78	0	0	166	21
2025 Buildout Total	11	0	8	20	0	81	5	457	13	80	621	21
Percent Impact (Approach)		100.0%			0.0%			17.5%			25.9%	

Overall Percent Impact 21.9%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/2019**
N/S Street:	**Young Street**
E/W Street:	**Rolesville High School Drwy/South Site Drwy.**

	School PM IN	School PM OUT
Total Net New Trips (North + South):	466	348
Total Pass-By Trips (North + South):	0	0
North Side Net New Trips:	48	28
North Side Pass-By Trips:	0	0
South Side Net New Trips:	418	320
South Side Pass-By Trips:	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

SCHOOL PM PEAK HOUR

AM PHF = 0.54

Description	Southern Site Driveway **Eastbound**			Rolesville High School Driveway **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	105	0	221	0	154	16	41	185	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	0	0	0	105	0	221	0	154	16	41	185	0
Growth Factor (0.02 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.126	0.000	0.000	0.126	0.000
2025 Background Growth	0	0	0	0	0	0	0	19	0	0	23	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	36	0	0	61	0
Rogers Farm	0	0	0	0	0	0	0	18	0	0	30	0
Watkins Family Property	0	0	0	0	0	0	0	25	0	0	43	0
Total Committed Traffic	0	0	0	0	0	0	0	79	0	0	135	0
2025 Background Traffic	0	0	0	105	0	221	0	252	16	41	343	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	5	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	3	0
Total Traffic - North Side	0	0	0	0	0	0	0	5	0	0	3	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	1%	14%	0%	0%	0%	4%
Inbound Project Traffic	0	0	0	0	0	0	4	59	0	0	0	17
Percent Assignment Outbound	3%	0%	2%	0%	0%	0%	0%	0%	0%	0%	43%	0%
Outbound Project Traffic	10	0	6	0	0	0	0	0	0	0	137	0
Total Traffic - South Side	10	0	6	0	0	0	4	59	0	0	137	17
Total Project Traffic	10	0	6	0	0	0	4	64	0	0	140	17
2025 Buildout Total	10	0	6	105	0	221	4	316	16	41	483	17
Percent Impact (Approach)		100.0%			0.0%			20.3%			29.0%	

Overall Percent Impact 19.8%

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INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**1/29/219**
N/S Street:	**Young Street**
E/W Street:	**Mitchell Mill Road**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR

AM PHF = 0.78

Description	Mitchell Mill Road **Eastbound**			Mitchell Mill Road **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	102	15	2	46	163	11	8	224	7	3	203	63
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	102	15	2	46	163	11	8	224	7	3	203	63
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	13	2	0	6	21	1	1	28	1	0	26	8
Committed Projects												
Kalas Falls	4	0	0	0	0	2	0	10	0	6	30	12
Rogers Farm	2	0	0	0	0	1	0	5	0	3	15	6
Watkins Family Property	3	0	0	0	0	1	0	7	0	4	20	8
Total Committed Traffic	9	0	0	0	0	4	0	22	0	13	65	26
2025 Background Traffic	124	17	2	52	184	16	9	274	8	16	294	97
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	38	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	30%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	70	140
Total Traffic - South Side	0	0	0	0	0	0	0	38	0	0	70	140
Total Project Traffic	0	0	0	0	0	0	0	40	0	0	76	140
2025 Buildout Total	124	17	2	52	184	16	9	314	8	16	370	237
Percent Impact (Approach)		0.0%			0.0%			12.1%			34.7%	

Overall Percent Impact 19.0%

PM PEAK HOUR

PM PHF = 0.8

Description	Mitchell Mill Road **Eastbound**			Mitchell Mill Road **Westbound**			Young Street **Northbound**			Young Street **Southbound**		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	21	103	7	13	39	2	7	167	41	5	189	18
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2019 Existing Traffic	21	103	7	13	39	2	7	167	41	5	189	18
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	3	13	1	2	5	0	1	21	5	1	24	2
Committed Projects												
Kalas Falls	13	0	0	0	0	7	0	33	0	4	19	8
Rogers Farm	7	0	0	0	0	3	0	16	0	2	10	3
Watkins Family Property	9	0	0	0	0	5	0	22	0	3	14	5
Total Committed Traffic	29	0	0	0	0	15	0	71	0	9	43	16
2025 Background Traffic	53	116	8	15	44	17	8	259	46	15	256	36
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	15.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	77	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15.00%	30.00%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	56	113
Total Traffic - South Side	0	0	0	0	0	0	0	77	0	0	56	113
Total Project Traffic	0	0	0	0	0	0	0	83	0	0	60	113
2025 Buildout Total	53	116	8	15	44	17	8	342	46	15	316	149
Percent Impact (Approach)		0.0%			0.0%			21.0%			36.0%	

Overall Percent Impact 22.7%

INTERSECTION ANALYSIS SHEET

Project:	**Young Street PUD**
Location:	**Rolesville, NC**
Scenario:	**Scenario #3 - Full Build-out**
Ct. Date	**Balanced with Int #9**
N/S Street:	**Young Street**
E/W Street:	**Central Site Driveway**

	AM In	AM Out	PM In	PM Out
Total Net New Trips (North + South):	271	523	576	412
Total Pass-By Trips (North + South):	0	0	93	83
North Side Net New Trips:	18	55	62	36
North Side Pass-By Trips:	0	0	0	0
South Side Net New Trips:	253	468	514	376
South Side Pass-By Trips:	0	0	93	83

Annual Growth Rate:	2.0%	**Existing Year:**	2019
Growth Factor:	0.126162	**Buildout Year:**	2025

AM PEAK HOUR
AM PHF =

Description	Central Site Driveway Eastbound			Central Site Driveway Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	394	0	0	544	0
2019 Existing Traffic	0	0	0	0	0	0	0	394	0	0	544	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	50	0	0	69	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	72	0	0	24	0
Rogers Farm	0	0	0	0	0	0	0	35	0	0	12	0
Watkins Family Property	0	0	0	0	0	0	0	49	0	0	16	0
Total Committed Traffic	0	0	0	0	0	0	0	156	0	0	52	0
2025 Background Traffic	0	0	0	0	0	0	0	600	0	0	665	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	2	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	6	0
Total Traffic - North Side	0	0	0	0	0	0	0	2	0	0	6	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	10%	4%	0%	0%	4%	21%
Inbound Project Traffic	0	0	0	0	0	0	25	10	0	0	10	53
Percent Assignment Outbound	17%	0%	23%	0%	0%	0%	0%	3%	0%	0%	20%	0%
Outbound Project Traffic	80	0	108	0	0	0	0	14	0	0	94	0
Total Traffic - South Side	80	0	108	0	0	0	25	24	0	0	104	53
Total Project Traffic	80	0	108	0	0	0	25	26	0	0	110	53
2025 Buildout Total	80	0	108	0	0	0	25	626	0	0	775	53
Percent Impact (Approach)		100.0%			-			7.8%			19.7%	

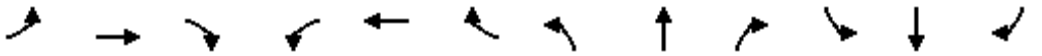
Overall Percent Impact 24.1%

PM PEAK HOUR
PM PHF =

Description	Central Site Driveway Eastbound			Central Site Driveway Westbound			Young Street Northbound			Young Street Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2019 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	0	0	0	0	0	0	276	0	0	374	0
2019 Existing Traffic	0	0	0	0	0	0	0	276	0	0	374	0
Growth Factor (0.02 per year)	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126	0.126
2025 Background Growth	0	0	0	0	0	0	0	35	0	0	47	0
Committed Projects												
Kalas Falls	0	0	0	0	0	0	0	46	0	0	79	0
Rogers Farm	0	0	0	0	0	0	0	23	0	0	39	0
Watkins Family Property	0	0	0	0	0	0	0	32	0	0	55	0
Total Committed Traffic	0	0	0	0	0	0	0	101	0	0	173	0
2025 Background Traffic	0	0	0	0	0	0	0	412	0	0	594	0
Project Traffic - North Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	10.00%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	6	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10.00%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	4	0
Total Traffic - North Side	0	0	0	0	0	0	0	6	0	0	4	0
Project Traffic - South Side												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	10.00%	4.00%	0%	0%	4.00%	21.00%
Inbound Project Traffic	0	0	0	0	0	0	51	21	0	0	21	108
Percent Assignment Outbound	17.00%	0%	23.00%	0%	0%	0%	0%	3.00%	0%	0%	20.00%	0%
Outbound Project Traffic	64	0	86	0	0	0	0	11	0	0	75	0
Total Traffic - South Side	64	0	86	0	0	0	51	32	0	0	96	108
Total Project Traffic	64	0	86	0	0	0	51	38	0	0	100	108
2025 Buildout Total	64	0	86	0	0	0	51	450	0	0	694	108
Percent Impact (Approach)		100.0%			-			17.8%			25.9%	

Overall Percent Impact 30.8%

Appendix G:
Synchro Output:
Existing (2019)



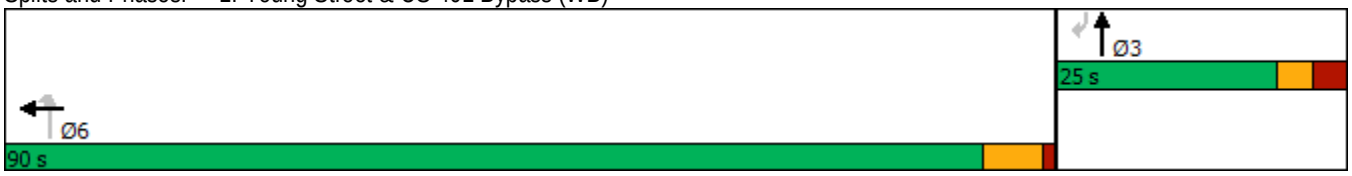
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1114	261	0	48	0	0	0	453
Future Volume (vph)	0	0	0	0	1114	261	0	48	0	0	0	453
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						311						178
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			412			1248	
Travel Time (s)		10.5			4.3			5.1			24.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1326	311	0	57	0	0	0	539
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					90.0	90.0		25.0				25.0
Total Split (%)					78.3%	78.3%		21.7%				21.7%
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					Min	Min		None				None
Act Effct Green (s)					36.6	36.6		61.2				14.4
Actuated g/C Ratio					0.60	0.60		1.00				0.24
v/c Ratio					0.63	0.29		0.03				0.67
Control Delay					9.9	1.7		0.0				19.0
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					9.9	1.7		0.0				19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS					A	A		A				B
Approach Delay					8.4						19.0	
Approach LOS					A						B	
Queue Length 50th (ft)					145	0		0				70
Queue Length 95th (ft)					213	22		0				111
Internal Link Dist (ft)		767			269			332			1168	
Turn Bay Length (ft)						225						85
Base Capacity (vph)					3522	1576		1777				1060
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					0.38	0.20		0.03				0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 61.2			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 55.0%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-2236			

! Phase conflict between lane groups.

Splits and Phases: 1: Young Street & US 401 Bypass (WB)



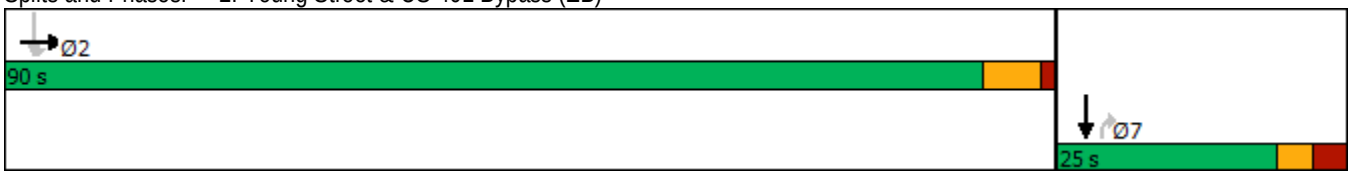
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	243	564	0	0	0	0	0	490	0	146	0
Future Volume (vph)	0	243	564	0	0	0	0	0	490	0	146	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		225	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	3436	1537	0	0	0	0	0	2641	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3436	1537	0	0	0	0	0	2583	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			671						1165			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		381			839			450			381	
Travel Time (s)		4.7			10.4			6.8			4.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	6%	6%	6%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	289	671	0	0	0	0	0	583	0	174	0
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		90.0	90.0						25.0		25.0	
Total Split (%)		78.3%	78.3%						21.7%		21.7%	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		Min	Min						None		None	
Act Effct Green (s)		16.6	16.6						8.1		34.8	
Actuated g/C Ratio		0.48	0.48						0.23		1.00	
v/c Ratio		0.18	0.62						0.39		0.10	
Control Delay		5.4	3.5						0.8		0.1	
Queue Delay		0.0	0.0						0.0		0.0	
Total Delay		5.4	3.5						0.8		0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A	A						A		A	
Approach Delay		4.1						0.8			0.1	
Approach LOS		A						A			A	
Queue Length 50th (ft)		14	0						0		0	
Queue Length 95th (ft)		23	23						0		0	
Internal Link Dist (ft)		301			759			370			301	
Turn Bay Length (ft)			225						250			
Base Capacity (vph)		3436	1537						1984		1826	
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		0.08	0.44						0.29		0.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 34.8			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 2.5		Intersection LOS: A	
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-2390			

! Phase conflict between lane groups.

Splits and Phases: 2: Young Street & US 401 Bypass (EB)



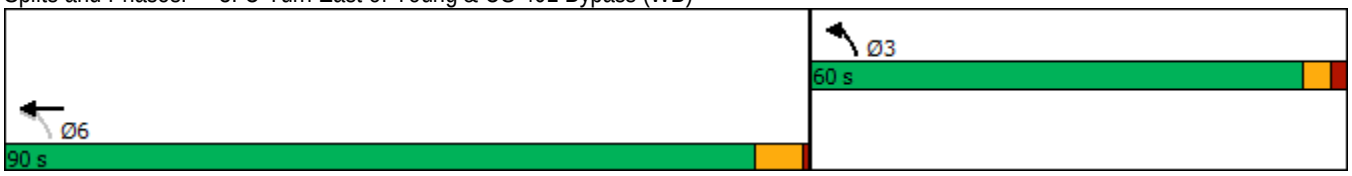
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1153	368	0
Future Volume (vph)	0	0	0	1153	368	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	2%			-2%	2%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	0	0	0	3540	1702	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3540	1702	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1253	400	0
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				90.0	60.0	
Total Split (%)				60.0%	40.0%	
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode				Min	None	
Act Effct Green (s)				27.1	44.4	
Actuated g/C Ratio				0.61	1.00	
v/c Ratio				0.58	0.24	
Control Delay				6.3	0.3	
Queue Delay				0.0	0.0	
Total Delay				6.3	0.3	

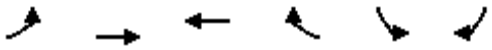
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS				A	A	
Approach Delay				6.3	0.3	
Approach LOS				A	A	
Queue Length 50th (ft)				78	0	
Queue Length 95th (ft)				114	0	
Internal Link Dist (ft)	382			926	1	
Turn Bay Length (ft)						
Base Capacity (vph)				3540	1702	
Starvation Cap Reductn				0	0	
Spillback Cap Reductn				0	0	
Storage Cap Reductn				0	0	
Reduced v/c Ratio				0.35	0.24	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 44.4			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 4.8		Intersection LOS: A	
Intersection Capacity Utilization 60.6%		ICU Level of Service B	
Analysis Period (min) 15			
Description: 05-2391			

! Phase conflict between lane groups.

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)





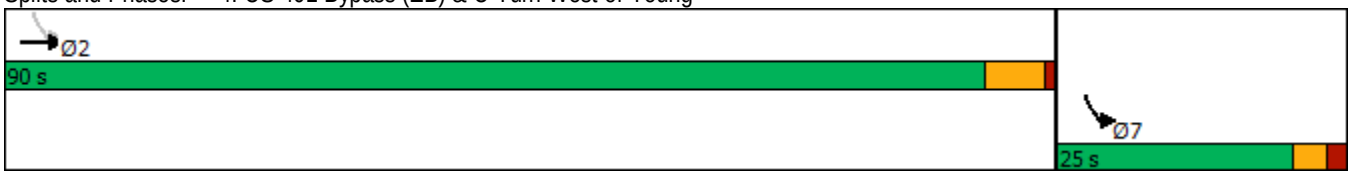
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	553	0	0	302	0
Future Volume (vph)	0	553	0	0	302	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		1%	-1%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	3421	0	0	1778	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3421	0	0	1778	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	443		58	
Travel Time (s)		13.5	5.5		1.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	683	0	0	373	0
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		90.0			25.0	
Total Split (%)		78.3%			21.7%	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Min			None	
Act Effct Green (s)		15.4			32.2	
Actuated g/C Ratio		0.48			1.00	
v/c Ratio		0.42			0.21	
Control Delay		6.4			0.3	
Queue Delay		0.0			0.0	
Total Delay		6.4			0.3	

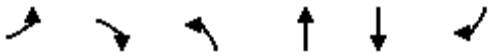
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		A			A	
Approach Delay		6.4			0.3	
Approach LOS		A			A	
Queue Length 50th (ft)		33			0	
Queue Length 95th (ft)		47			0	
Internal Link Dist (ft)		1009	363		1	
Turn Bay Length (ft)						
Base Capacity (vph)		3421			1778	
Starvation Cap Reductn		0			0	
Spillback Cap Reductn		0			0	
Storage Cap Reductn		0			0	
Reduced v/c Ratio		0.20			0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 32.2			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 57.8%		ICU Level of Service B	
Analysis Period (min) 15			
Description: 05-2425			

! Phase conflict between lane groups.

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	58	24	319	412	4
Future Volume (vph)	22	58	24	319	412	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1641	0	1736	1827	1861	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1641	0	1736	1827	1861	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Confl. Peds. (#/hr)			1			1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	28	375	490	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	58	24	319	412	4
Future Vol, veh/h	22	58	24	319	412	4
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	26	68	28	375	485	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	920	489	491	0	-	0
Stage 1	489	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	299	577	1062	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	291	576	1061	-	-	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1061	-	454	-	-
HCM Lane V/C Ratio	0.027	-	0.207	-	-
HCM Control Delay (s)	8.5	-	15	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	36	4	4	25	4	4	4	4	4	4	4
Future Volume (vph)	4	36	4	4	25	4	4	4	4	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1812	0	0	1785	0	0	1750	0	0	1750	0
Flt Permitted		0.995			0.994			0.984			0.984	
Satd. Flow (perm)	0	1812	0	0	1785	0	0	1750	0	0	1750	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	40	0	0	15	0	0	15	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.7%		ICU Level of Service A	
Analysis Period (min) 15			

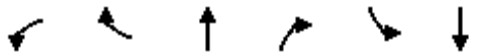
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	36	4	4	25	4	4	4	4	4	4	4
Future Vol, veh/h	4	36	4	4	25	4	4	4	4	4	4	4
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	3	3	3	4	4	4	2	2	2	2	2	2
Mvmt Flow	5	43	5	5	30	5	5	5	5	5	5	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	49	0	0	105	103	47	105	103	34
Stage 1	-	-	-	-	-	-	57	57	-	44	44	-
Stage 2	-	-	-	-	-	-	48	46	-	61	59	-
Critical Hdwy	4.13	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1545	-	-	875	787	1022	875	787	1039
Stage 1	-	-	-	-	-	-	955	847	-	970	858	-
Stage 2	-	-	-	-	-	-	965	857	-	950	846	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1544	-	-	862	781	1021	862	781	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	862	781	-	862	781	-
Stage 1	-	-	-	-	-	-	951	844	-	966	855	-
Stage 2	-	-	-	-	-	-	952	854	-	937	843	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.9	9.2	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	877	1567	-	-	1544	-	-	881
HCM Lane V/C Ratio	0.016	0.003	-	-	0.003	-	-	0.016
HCM Control Delay (s)	9.2	7.3	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	5	481	4	4	702
Future Volume (vph)	4	5	481	4	4	702
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	1687	0	1791	0	1719	1810
Flt Permitted	0.977				0.950	
Satd. Flow (perm)	1687	0	1791	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	6%	6%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	683	0	6	989
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	5	481	4	4	702
Future Vol, veh/h	4	5	481	4	4	702
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	6	6	5	5
Mvmt Flow	6	7	677	6	6	989

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1681	680	0	0	683	0
Stage 1	680	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	104	451	-	-	896	-
Stage 1	503	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	103	451	-	-	896	-
Mov Cap-2 Maneuver	103	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	355	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.5	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	180	896	-
HCM Lane V/C Ratio	-	-	0.07	0.006	-
HCM Control Delay (s)	-	-	26.5	9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	139	344	50	189	517
Future Volume (vph)	27	139	344	50	189	517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	250		0	525	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				100	
Satd. Flow (prot)	1492	1335	1796	0	1719	1810
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1492	1335	1796	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1124		1108			981
Travel Time (s)	17.0		16.8			14.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	21%	21%	4%	4%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	188	533	0	255	699
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	139	344	50	189	517
Future Vol, veh/h	27	139	344	50	189	517
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	250	-	-	525	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	21	21	4	4	5	5
Mvmt Flow	36	188	465	68	255	699

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1708	499	0	0	533	0
Stage 1	499	-	-	-	-	-
Stage 2	1209	-	-	-	-	-
Critical Hdwy	6.61	6.41	-	-	4.15	-
Critical Hdwy Stg 1	5.61	-	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-	-
Follow-up Hdwy	3.689	3.489	-	-	2.245	-
Pot Cap-1 Maneuver	90	535	-	-	1020	-
Stage 1	573	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	68	535	-	-	1020	-
Mov Cap-2 Maneuver	68	-	-	-	-	-
Stage 1	430	-	-	-	-	-
Stage 2	259	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.3	0	2.6
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	68	535	1020	-
HCM Lane V/C Ratio	-	-	0.537	0.351	0.25	-
HCM Control Delay (s)	-	-	107.5	15.3	9.7	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	2.2	1.6	1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	91	195	233	213	299	231
Future Volume (vph)	91	195	233	213	299	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	255		350	350	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Satd. Flow (prot)	1770	1583	1845	1568	1752	1845
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1845	1568	1752	1845
Link Speed (mph)	10		45			45
Link Distance (ft)	672		1734			1092
Travel Time (s)	45.8		26.3			16.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	134	287	343	313	440	340
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	45.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	91	195	233	213	299	231
Future Vol, veh/h	91	195	233	213	299	231
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	255	-	350	350	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	134	287	343	313	440	340

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1563	343	0	-	343	0
Stage 1	343	-	-	-	-	-
Stage 2	1220	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.13	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.227	-
Pot Cap-1 Maneuver	~ 123	700	-	0	1210	-
Stage 1	719	-	-	0	-	-
Stage 2	279	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 78	700	-	-	1210	-
Mov Cap-2 Maneuver	~ 78	-	-	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	279	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	155.8	0	5.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	78	700	1210	-
HCM Lane V/C Ratio	-	1.716	0.41	0.363	-
HCM Control Delay (s)	-	$ 460.3	13.7	9.7	-
HCM Lane LOS	-	F	B	A	-
HCM 95th %tile Q(veh)	-	11.4	2	1.7	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	15	4	46	163	11	8	224	7	4	203	63
Future Volume (vph)	102	15	4	46	163	11	8	224	7	4	203	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1779	0	0	1842	1583	0	1799	0	0	1733	0
Flt Permitted		0.959			0.989			0.998			0.999	
Satd. Flow (perm)	0	1779	0	0	1842	1583	0	1799	0	0	1733	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	0	0	268	14	0	306	0	0	346	0
Sign Control		Stop			Stop			Stop			Stop	

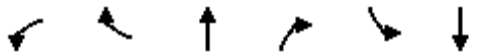
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	16.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	102	15	4	46	163	11	8	224	7	4	203	63
Future Vol, veh/h	102	15	4	46	163	11	8	224	7	4	203	63
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	6	6	6
Mvmt Flow	131	19	5	59	209	14	10	287	9	5	260	81
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	13	16.8	16.1	17.2
HCM LOS	B	C	C	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	84%	22%	0%	1%
Vol Thru, %	94%	12%	78%	0%	75%
Vol Right, %	3%	3%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	239	121	209	11	270
LT Vol	8	102	46	0	4
Through Vol	224	15	163	0	203
RT Vol	7	4	0	11	63
Lane Flow Rate	306	155	268	14	346
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.53	0.3	0.521	0.024	0.582
Departure Headway (Hd)	6.23	6.972	7	6.172	6.05
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	579	515	514	579	595
Service Time	4.277	5.031	4.747	3.919	4.095
HCM Lane V/C Ratio	0.528	0.301	0.521	0.024	0.582
HCM Control Delay	16.1	13	17.2	9.1	17.2
HCM Lane LOS	C	B	C	A	C
HCM 95th-tile Q	3.1	1.3	3	0.1	3.7



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	122	361	16	59	197
Future Volume (vph)	31	122	361	16	59	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	250		0	525	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.994			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1444	1292	1852	0	1671	1759
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1444	1292	1852	0	1671	1759
Link Speed (mph)	45		45			45
Link Distance (ft)	1124		1108			981
Travel Time (s)	17.0		16.8			14.9
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	25%	25%	2%	2%	8%	8%
Adj. Flow (vph)	46	182	539	24	88	294
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	182	563	0	88	294
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.6%		ICU Level of Service A	
Analysis Period (min) 15			

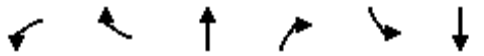
Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	122	361	16	59	197
Future Vol, veh/h	31	122	361	16	59	197
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	250	-	-	525	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	25	25	2	2	8	8
Mvmt Flow	46	182	539	24	88	294

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1021	551	0	0	563	0
Stage 1	551	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Critical Hdwy	6.65	6.45	-	-	4.18	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.525	-	-	2.272	-
Pot Cap-1 Maneuver	237	492	-	-	979	-
Stage 1	534	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	216	492	-	-	979	-
Mov Cap-2 Maneuver	216	-	-	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.5	0	2.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	216	492	979	-
HCM Lane V/C Ratio	-	-	0.214	0.37	0.09	-
HCM Control Delay (s)	-	-	26.2	16.6	9	-
HCM Lane LOS	-	-	D	C	A	-
HCM 95th %tile Q(veh)	-	-	0.8	1.7	0.3	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	105	221	154	16	41	185
Future Volume (vph)	105	221	154	16	41	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	255		350	350	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1827	1553	1597	1681
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1827	1553	1597	1681
Link Speed (mph)	10		45			45
Link Distance (ft)	672		1734			1092
Travel Time (s)	45.8		26.3			16.5
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles (%)	2%	2%	4%	4%	13%	13%
Adj. Flow (vph)	194	409	285	30	76	343
Shared Lane Traffic (%)						
Lane Group Flow (vph)	194	409	285	30	76	343
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.5%		ICU Level of Service A	
Analysis Period (min) 15			

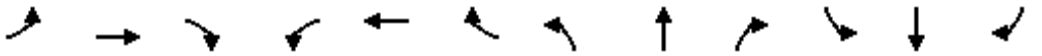
Intersection	
Int Delay, s/veh	9.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	105	221	154	16	41	185
Future Vol, veh/h	105	221	154	16	41	185
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	255	-	350	350	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	54	54	54	54	54	54
Heavy Vehicles, %	2	2	4	4	13	13
Mvmt Flow	194	409	285	30	76	343

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	780	285	0	-	285	0
Stage 1	285	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.23	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.317	-
Pot Cap-1 Maneuver	364	754	-	0	1217	-
Stage 1	763	-	-	0	-	-
Stage 2	613	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	341	754	-	-	1217	-
Mov Cap-2 Maneuver	341	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	613	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.6	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	341	754	1217	-
HCM Lane V/C Ratio	-	0.57	0.543	0.062	-
HCM Control Delay (s)	-	28.7	15.3	8.2	-
HCM Lane LOS	-	D	C	A	-
HCM 95th %tile Q(veh)	-	3.4	3.3	0.2	-



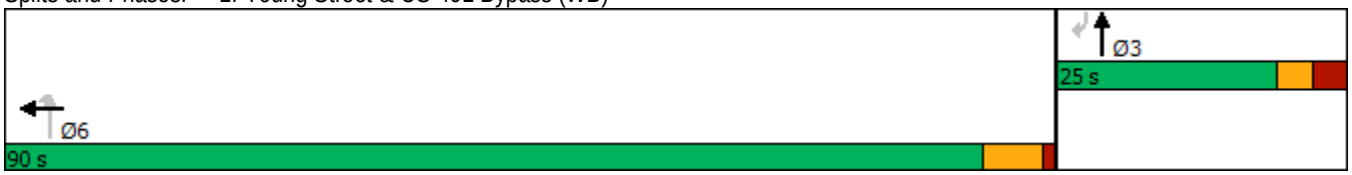
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	436	209	0	119	0	0	0	344
Future Volume (vph)	0	0	0	0	436	209	0	119	0	0	0	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						225						848
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			412			1248	
Travel Time (s)		10.5			4.3			5.1			24.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	0	0	0	0	469	225	0	128	0	0	0	370
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	469	225	0	128	0	0	0	370
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					1	0		1				1
Detector Template												
Leading Detector (ft)					426	0		40				40
Trailing Detector (ft)					420	0		0				0
Detector 1 Position(ft)					420	0		0				0
Detector 1 Size(ft)					6	20		40				40
Detector 1 Type					Cl+Ex	Cl+Ex		Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0	0.0		0.0				0.0
Detector 1 Queue (s)					0.0	0.0		0.0				0.0
Detector 1 Delay (s)					0.0	0.0		15.0				15.0
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					90.0	90.0		25.0				25.0
Total Split (%)					78.3%	78.3%		21.7%				21.7%
Maximum Green (s)					83.6	83.6		18.9				18.9
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					6.0	6.0		2.0				2.0
Minimum Gap (s)					3.4	3.4		2.0				2.0
Time Before Reduce (s)					15.0	15.0		0.0				0.0
Time To Reduce (s)					45.0	45.0		0.0				0.0
Recall Mode					Min	Min		None				None
Act Effct Green (s)					15.4	15.4		33.5				8.1
Actuated g/C Ratio					0.46	0.46		1.00				0.24
v/c Ratio					0.29	0.27		0.07				0.28
Control Delay					6.2	2.0		0.1				0.5
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					6.2	2.0		0.1				0.5
LOS					A	A		A				A
Approach Delay					4.9			0.1			0.5	
Approach LOS					A			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 33.5			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 3.0		Intersection LOS: A	
Intersection Capacity Utilization 37.6%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-2236			

! Phase conflict between lane groups.

Splits and Phases: 1: Young Street & US 401 Bypass (WB)



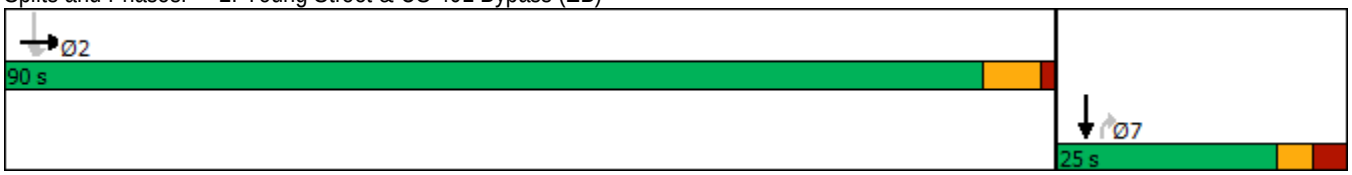
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	853	385	0	0	0	0	0	334	0	82	0
Future Volume (vph)	0	853	385	0	0	0	0	0	334	0	82	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		225	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected												
Satd. Flow (prot)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			414						379			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		381			839			450			381	
Travel Time (s)		4.7			10.4			6.8			4.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	0	917	414	0	0	0	0	0	359	0	88	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	917	414	0	0	0	0	0	359	0	88	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	0						1		1	
Detector Template												
Leading Detector (ft)		426	0						40		40	
Trailing Detector (ft)		420	0						0		0	
Detector 1 Position(ft)		420	0						0		0	
Detector 1 Size(ft)		6	20						40		40	
Detector 1 Type		Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0						0.0		0.0	
Detector 1 Queue (s)		0.0	0.0						0.0		0.0	
Detector 1 Delay (s)		0.0	0.0						15.0		15.0	
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		90.0	90.0						25.0		25.0	
Total Split (%)		78.3%	78.3%						21.7%		21.7%	
Maximum Green (s)		83.6	83.6						18.9		18.9	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		6.0	6.0						2.0		2.0	
Minimum Gap (s)		3.4	3.4						2.0		2.0	
Time Before Reduce (s)		15.0	15.0						0.0		0.0	
Time To Reduce (s)		45.0	45.0						0.0		0.0	
Recall Mode		Min	Min						None		None	
Act Effct Green (s)		26.4	26.4						8.4		45.2	
Actuated g/C Ratio		0.58	0.58						0.19		1.00	
v/c Ratio		0.45	0.38						0.44		0.05	
Control Delay		5.7	1.5						4.6		0.0	
Queue Delay		0.0	0.0						0.0		0.0	
Total Delay		5.7	1.5						4.6		0.0	
LOS		A	A						A		A	
Approach Delay		4.4						4.6				
Approach LOS		A						A				

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 45.2			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-2390			

! Phase conflict between lane groups.

Splits and Phases: 2: Young Street & US 401 Bypass (EB)



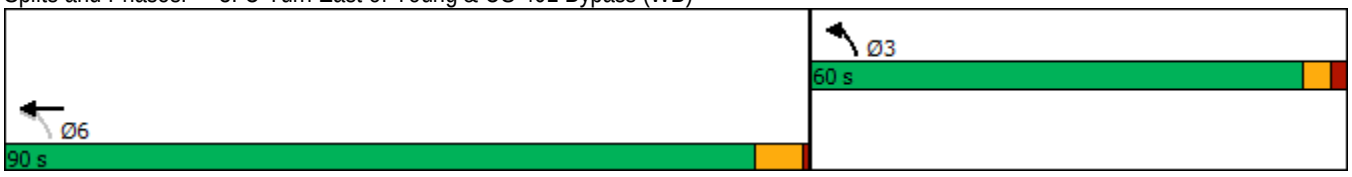
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	452	275	0
Future Volume (vph)	0	0	0	452	275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3575	1752	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3575	1752	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	461	281	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	461	281	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	1.01	1.01
Turning Speed (mph)		9	15		15	9
Number of Detectors				1	1	
Detector Template						
Leading Detector (ft)				426	40	
Trailing Detector (ft)				420	0	
Detector 1 Position(ft)				420	0	
Detector 1 Size(ft)				6	40	
Detector 1 Type				Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)				0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	
Detector 1 Delay (s)				0.0	15.0	
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				90.0	60.0	
Total Split (%)				60.0%	40.0%	
Maximum Green (s)				83.6	54.9	

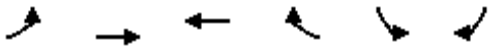
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)				6.0	2.0	
Minimum Gap (s)				3.4	2.0	
Time Before Reduce (s)				15.0	0.0	
Time To Reduce (s)				45.0	0.0	
Recall Mode				Min	None	
Act Effct Green (s)				15.4	32.5	
Actuated g/C Ratio				0.47	1.00	
v/c Ratio				0.27	0.16	
Control Delay				5.7	0.2	
Queue Delay				0.0	0.0	
Total Delay				5.7	0.2	
LOS				A	A	
Approach Delay				5.7	0.2	
Approach LOS				A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 32.5			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay: 3.6		Intersection LOS: A	
Intersection Capacity Utilization 36.1%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-2391			

! Phase conflict between lane groups.

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)



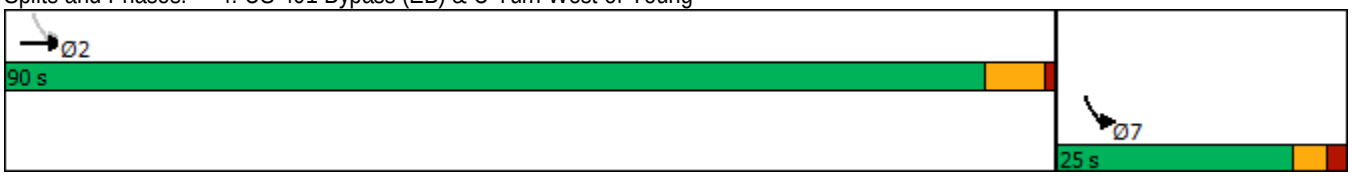


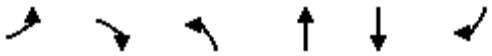
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1063	0	0	294	0
Future Volume (vph)	0	1063	0	0	294	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-1%		-1%	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3487	0	0	1761	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3487	0	0	1761	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	443		58	
Travel Time (s)		13.5	5.5		1.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	0	1131	0	0	313	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1131	0	0	313	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	0.99	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors		1			1	
Detector Template						
Leading Detector (ft)		426			40	
Trailing Detector (ft)		420			0	
Detector 1 Position(ft)		420			0	
Detector 1 Size(ft)		6			40	
Detector 1 Type		Cl+Ex			Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0			0.0	
Detector 1 Queue (s)		0.0			0.0	
Detector 1 Delay (s)		0.0			15.0	
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		90.0			25.0	
Total Split (%)		78.3%			21.7%	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Maximum Green (s)		83.8			20.2	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0			2.0	
Minimum Gap (s)		3.4			2.0	
Time Before Reduce (s)		15.0			0.0	
Time To Reduce (s)		45.0			0.0	
Recall Mode		Min			None	
Act Effct Green (s)		23.2			40.2	
Actuated g/C Ratio		0.58			1.00	
v/c Ratio		0.56			0.18	
Control Delay		6.4			0.2	
Queue Delay		0.0			0.0	
Total Delay		6.4			0.2	
LOS		A			A	
Approach Delay		6.4			0.2	
Approach LOS		A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 40.2	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 5.0	Intersection LOS: A
Intersection Capacity Utilization 53.2%	ICU Level of Service A
Analysis Period (min) 15	
Description: 05-2425	
! Phase conflict between lane groups.	

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	27	35	294	317	22
Future Volume (vph)	15	27	35	294	317	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912				0.991	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1592	0	1770	1863	1810	0
Flt Permitted	0.983		0.950			
Satd. Flow (perm)	1592	0	1770	1863	1810	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	7%	7%	2%	2%	4%	4%
Adj. Flow (vph)	16	30	38	323	348	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	38	323	372	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.7%		ICU Level of Service A	
Analysis Period (min) 15			

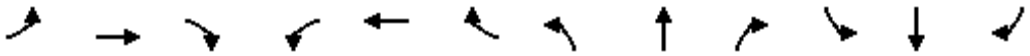
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	27	35	294	317	22
Future Vol, veh/h	15	27	35	294	317	22
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	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	2	2	4	4
Mvmt Flow	16	30	38	323	348	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	759	360	372	0	-	0
Stage 1	360	-	-	-	-	-
Stage 2	399	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	367	673	1186	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	355	673	1186	-	-	-
Mov Cap-2 Maneuver	355	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1186	-	510	-	-
HCM Lane V/C Ratio	0.032	-	0.09	-	-
HCM Control Delay (s)	8.1	-	12.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	37	4	4	30	4	4	4	6	4	4	4
Future Volume (vph)	4	37	4	4	30	4	4	4	6	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.989			0.987			0.937			0.955	
Flt Protected		0.996			0.995			0.987			0.984	
Satd. Flow (prot)	0	1733	0	0	1812	0	0	1440	0	0	1750	0
Flt Permitted		0.996			0.995			0.987			0.984	
Satd. Flow (perm)	0	1733	0	0	1812	0	0	1440	0	0	1750	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	22%	22%	22%	2%	2%	2%
Adj. Flow (vph)	4	41	4	4	33	4	4	4	7	4	4	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	41	0	0	15	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	14.0%	ICU Level of Service	A
Analysis Period (min)	15		

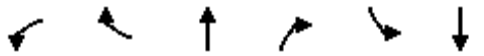
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	37	4	4	30	4	4	4	6	4	4	4
Future Vol, veh/h	4	37	4	4	30	4	4	4	6	4	4	4
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	8	8	8	3	3	3	22	22	22	2	2	2
Mvmt Flow	4	41	4	4	33	4	4	4	7	4	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	37	0	0	47	0	0	100	98	45	100	98	35
Stage 1	-	-	-	-	-	-	53	53	-	43	43	-
Stage 2	-	-	-	-	-	-	47	45	-	57	55	-
Critical Hdwy	4.18	-	-	4.13	-	-	7.32	6.72	6.42	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Follow-up Hdwy	2.272	-	-	2.227	-	-	3.698	4.198	3.498	3.518	4.018	3.318
Pot Cap-1 Maneuver	1536	-	-	1554	-	-	836	756	971	881	792	1038
Stage 1	-	-	-	-	-	-	911	813	-	971	859	-
Stage 2	-	-	-	-	-	-	918	820	-	955	849	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1536	-	-	1551	-	-	823	750	969	867	786	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	823	750	-	867	786	-
Stage 1	-	-	-	-	-	-	906	809	-	968	856	-
Stage 2	-	-	-	-	-	-	907	818	-	941	845	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.8	9.3	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	854	1536	-	-	1551	-	-	885
HCM Lane V/C Ratio	0.018	0.003	-	-	0.003	-	-	0.015
HCM Control Delay (s)	9.3	7.3	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	4	336	4	7	461
Future Volume (vph)	4	4	336	4	7	461
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1719	1810
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	5%	5%
Adj. Flow (vph)	4	4	373	4	8	512
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	377	0	8	512
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.3%		ICU Level of Service A	
Analysis Period (min) 15			

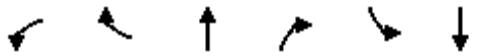
Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	336	4	7	461
Future Vol, veh/h	4	4	336	4	7	461
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	4	4	373	4	8	512

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	903	375	0	0	377	0
Stage 1	375	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	308	671	-	-	1165	-
Stage 1	695	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	306	671	-	-	1165	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	592	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	420	1165	-
HCM Lane V/C Ratio	-	-	0.021	0.007	-
HCM Control Delay (s)	-	-	13.8	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	78	259	17	120	349
Future Volume (vph)	25	78	259	17	120	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	250		0	525	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1538	1812	0	1719	1810
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1719	1538	1812	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1124		1108			981
Travel Time (s)	17.0		16.8			14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	4%	4%	5%	5%
Adj. Flow (vph)	27	85	282	18	130	379
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	85	300	0	130	379
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.6%		ICU Level of Service A	
Analysis Period (min) 15			

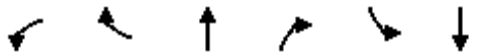
Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	78	259	17	120	349
Future Vol, veh/h	25	78	259	17	120	349
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	250	-	-	525	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	4	4	5	5
Mvmt Flow	27	85	282	18	130	379

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	930	291	0	0	300	0
Stage 1	291	-	-	-	-	-
Stage 2	639	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	293	741	-	-	1244	-
Stage 1	752	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	262	741	-	-	1244	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	520	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	262	741	1244	-
HCM Lane V/C Ratio	-	-	0.104	0.114	0.105	-
HCM Control Delay (s)	-	-	20.3	10.5	8.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.4	0.4	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	81	247	13	80	250
Future Volume (vph)	20	81	247	13	80	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	255		350	350	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Link Speed (mph)	10		45			45
Link Distance (ft)	672		1734			1092
Travel Time (s)	45.8		26.3			16.5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	86	263	14	85	266
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	86	263	14	85	266
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.8%		ICU Level of Service A	
Analysis Period (min) 15			

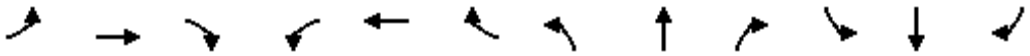
Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	81	247	13	80	250
Future Vol, veh/h	20	81	247	13	80	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	255	-	350	350	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	86	263	14	85	266

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	699	263	0	-	263	0
Stage 1	263	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	406	776	-	0	1301	-
Stage 1	781	-	-	0	-	-
Stage 2	652	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	380	776	-	-	1301	-
Mov Cap-2 Maneuver	380	-	-	-	-	-
Stage 1	730	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	380	776	1301	-
HCM Lane V/C Ratio	-	0.056	0.111	0.065	-
HCM Control Delay (s)	-	15	10.2	8	-
HCM Lane LOS	-	C	B	A	-
HCM 95th %tile Q(veh)	-	0.2	0.4	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	103	7	13	39	4	7	167	41	5	189	18
Future Volume (vph)	21	103	7	13	39	4	7	167	41	5	189	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	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
Frt		0.993				0.850		0.974			0.988	
Flt Protected		0.992			0.988			0.998			0.999	
Satd. Flow (prot)	0	1817	0	0	1840	1583	0	1776	0	0	1803	0
Flt Permitted		0.992			0.988			0.998			0.999	
Satd. Flow (perm)	0	1817	0	0	1840	1583	0	1776	0	0	1803	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	26	129	9	16	49	5	9	209	51	6	236	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	164	0	0	65	5	0	269	0	0	265	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	103	7	13	39	4	7	167	41	5	189	18
Future Vol, veh/h	21	103	7	13	39	4	7	167	41	5	189	18
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	3	3	3	2	2	2	4	4	4	4	4	4
Mvmt Flow	26	129	9	16	49	5	9	209	51	6	236	23
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	10.4	9.7	10.7	10.8
HCM LOS	B	A	B	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	16%	25%	0%	2%
Vol Thru, %	78%	79%	75%	0%	89%
Vol Right, %	19%	5%	0%	100%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	131	52	4	212
LT Vol	7	21	13	0	5
Through Vol	167	103	39	0	189
RT Vol	41	7	0	4	18
Lane Flow Rate	269	164	65	5	265
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.361	0.252	0.113	0.008	0.36
Departure Headway (Hd)	4.834	5.534	6.262	5.424	4.896
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	734	652	575	663	723
Service Time	2.932	3.538	3.967	3.129	2.995
HCM Lane V/C Ratio	0.366	0.252	0.113	0.008	0.367
HCM Control Delay	10.7	10.4	9.8	8.2	10.8
HCM Lane LOS	B	B	A	A	B
HCM 95th-tile Q	1.6	1	0.4	0	1.6

Appendix I:

Synchro Output:

Background (2025)

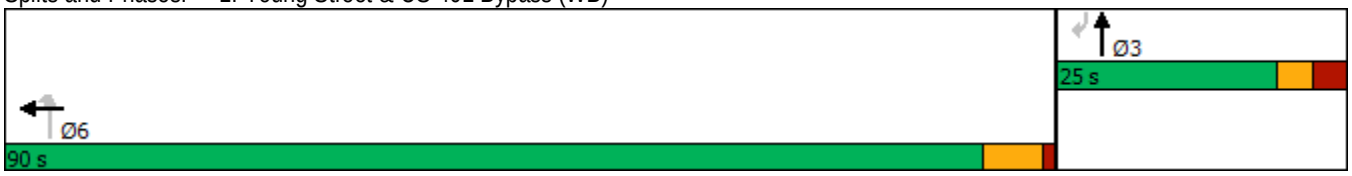
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1321	320	0	54	0	0	0	519
Future Volume (vph)	0	0	0	0	1321	320	0	54	0	0	0	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						356						136
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			412			1248	
Travel Time (s)		10.5			4.3			5.1			24.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1468	356	0	60	0	0	0	577
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					90.0	90.0		25.0				25.0
Total Split (%)					78.3%	78.3%		21.7%				21.7%
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					Min	Min		None				None
Act Effct Green (s)					40.3	40.3		68.8				18.4
Actuated g/C Ratio					0.59	0.59		1.00				0.27
v/c Ratio					0.71	0.33		0.03				0.67
Control Delay					12.6	1.7		0.0				22.0
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					12.6	1.7		0.0				22.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS					B	A		A				C
Approach Delay					10.5						22.0	
Approach LOS					B						C	
Queue Length 50th (ft)					215	0		0				94
Queue Length 95th (ft)					290	29		0				171
Internal Link Dist (ft)		767			269			332			1168	
Turn Bay Length (ft)						225						85
Base Capacity (vph)					3522	1576		1770				925
Starvation Cap Reductn					0	0		0				0
Spillback Cap Reductn					0	0		0				0
Storage Cap Reductn					0	0		0				0
Reduced v/c Ratio					0.42	0.23		0.03				0.62

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 68.8			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 12.9		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			
Description: 05-2236			

! Phase conflict between lane groups.

Splits and Phases: 1: Young Street & US 401 Bypass (WB)



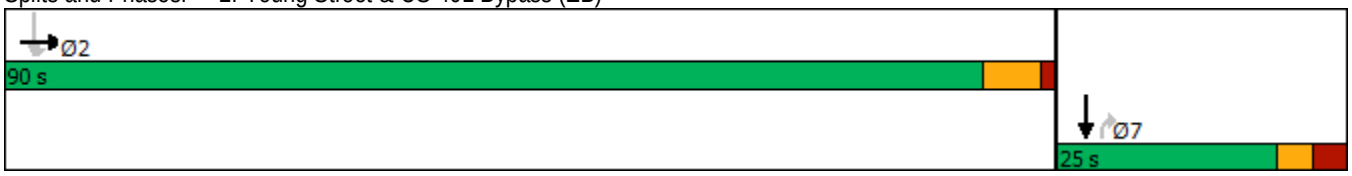
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	274	666	0	0	0	0	0	695	0	181	0
Future Volume (vph)	0	274	666	0	0	0	0	0	695	0	181	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		225	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	3436	1537	0	0	0	0	0	2641	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3436	1537	0	0	0	0	0	2583	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			740						1135			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		381			839			450			381	
Travel Time (s)		4.7			10.4			6.8			4.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	6%	6%	6%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	304	740	0	0	0	0	0	772	0	201	0
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		90.0	90.0						25.0		25.0	
Total Split (%)		78.3%	78.3%						21.7%		21.7%	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		Min	Min						None		None	
Act Effct Green (s)		17.4	17.4						8.2		35.7	
Actuated g/C Ratio		0.49	0.49						0.23		1.00	
v/c Ratio		0.18	0.66						0.53		0.11	
Control Delay		5.2	3.7						1.4		0.1	
Queue Delay		0.0	0.2						0.0		0.0	
Total Delay		5.2	3.9						1.4		0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A	A						A		A	
Approach Delay		4.3						1.4			0.1	
Approach LOS		A						A			A	
Queue Length 50th (ft)		14	0						0		0	
Queue Length 95th (ft)		26	30						0		0	
Internal Link Dist (ft)		301			759			370			301	
Turn Bay Length (ft)			225						250			
Base Capacity (vph)		3436	1537						1954		1826	
Starvation Cap Reductn		0	236						0		0	
Spillback Cap Reductn		0	0						0		0	
Storage Cap Reductn		0	0						0		0	
Reduced v/c Ratio		0.09	0.57						0.40		0.11	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 35.7			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 2.8		Intersection LOS: A	
Intersection Capacity Utilization 59.1%		ICU Level of Service B	
Analysis Period (min) 15			
Description: 05-2390			

! Phase conflict between lane groups.

Splits and Phases: 2: Young Street & US 401 Bypass (EB)



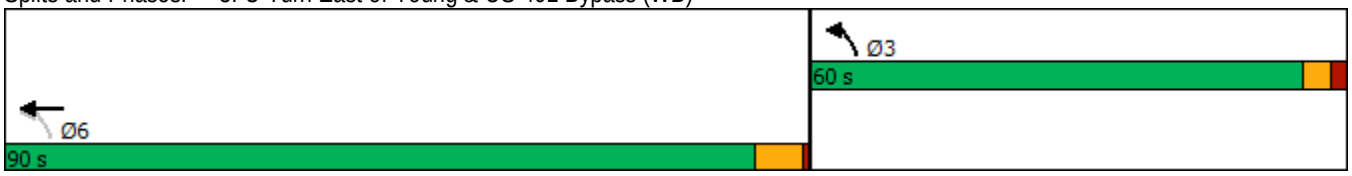
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1316	506	0
Future Volume (vph)	0	0	0	1316	506	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	2%			-2%	2%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	0	0	0	3540	1702	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3540	1702	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1430	550	0
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				90.0	60.0	
Total Split (%)				60.0%	40.0%	
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode				Min	None	
Act Effct Green (s)				32.7	50.2	
Actuated g/C Ratio				0.65	1.00	
v/c Ratio				0.62	0.32	
Control Delay				6.4	0.5	
Queue Delay				0.0	0.0	
Total Delay				6.4	0.5	

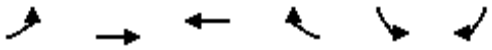
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS				A	A	
Approach Delay				6.4	0.5	
Approach LOS				A	A	
Queue Length 50th (ft)				97	0	
Queue Length 95th (ft)				149	0	
Internal Link Dist (ft)	382			926	1	
Turn Bay Length (ft)						
Base Capacity (vph)				3540	1688	
Starvation Cap Reductn				0	0	
Spillback Cap Reductn				0	0	
Storage Cap Reductn				0	0	
Reduced v/c Ratio				0.40	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 50.2			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 4.7		Intersection LOS: A	
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-2391			

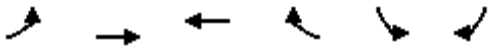
! Phase conflict between lane groups.

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	645	0	0	349	0
Future Volume (vph)	0	645	0	0	349	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		1%	-1%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	3421	0	0	1778	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3421	0	0	1778	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	443		58	
Travel Time (s)		13.5	5.5		1.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	717	0	0	388	0
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		90.0			25.0	
Total Split (%)		78.3%			21.7%	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Min			None	
Act Effct Green (s)		15.5			32.3	
Actuated g/C Ratio		0.48			1.00	
v/c Ratio		0.44			0.22	
Control Delay		6.5			0.3	
Queue Delay		0.0			0.0	
Total Delay		6.5			0.3	

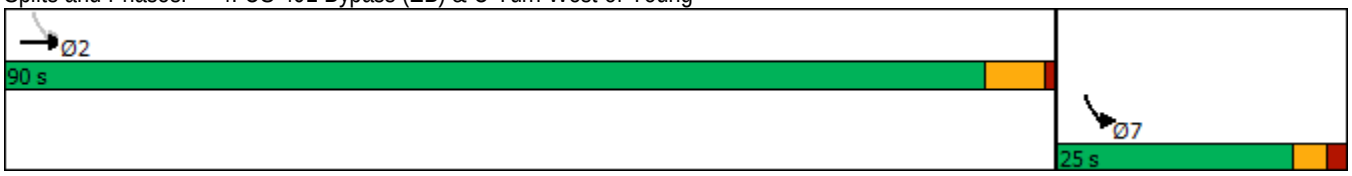


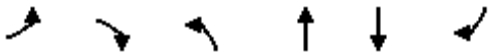
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		A			A	
Approach Delay		6.5			0.3	
Approach LOS		A			A	
Queue Length 50th (ft)		35			0	
Queue Length 95th (ft)		57			0	
Internal Link Dist (ft)		1009	363		1	
Turn Bay Length (ft)						
Base Capacity (vph)		3421			1778	
Starvation Cap Reductn		0			0	
Spillback Cap Reductn		0			0	
Storage Cap Reductn		0			0	
Reduced v/c Ratio		0.21			0.22	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 32.3			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 4.3		Intersection LOS: A	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-2425			

! Phase conflict between lane groups.

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	65	27	385	473	4
Future Volume (vph)	25	65	27	385	473	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1642	0	1736	1827	1861	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1642	0	1736	1827	1861	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Confl. Peds. (#/hr)			1			1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	0	30	428	530	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	65	27	385	473	4
Future Vol, veh/h	25	65	27	385	473	4
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	28	72	30	428	526	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1017	529	531	0	-	0
Stage 1	529	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	262	548	1026	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	254	547	1025	-	-	-
Mov Cap-2 Maneuver	254	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	614	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1025	-	414	-	-
HCM Lane V/C Ratio	0.029	-	0.242	-	-
HCM Control Delay (s)	8.6	-	16.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	41	4	4	28	4	4	4	5	4	4	5
Future Volume (vph)	4	41	4	4	28	4	4	4	5	4	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1819	0	0	1792	0	0	1730	0	0	1730	0
Flt Permitted		0.996			0.995			0.986			0.986	
Satd. Flow (perm)	0	1819	0	0	1792	0	0	1730	0	0	1730	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	39	0	0	14	0	0	14	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	41	4	4	28	4	4	4	5	4	4	5
Future Vol, veh/h	4	41	4	4	28	4	4	4	5	4	4	5
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	4	4	4	2	2	2	2	2	2
Mvmt Flow	4	46	4	4	31	4	4	4	6	4	4	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	51	0	0	103	101	49	103	101	34
Stage 1	-	-	-	-	-	-	57	57	-	42	42	-
Stage 2	-	-	-	-	-	-	46	44	-	61	59	-
Critical Hdwy	4.13	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1542	-	-	877	789	1020	877	789	1039
Stage 1	-	-	-	-	-	-	955	847	-	972	860	-
Stage 2	-	-	-	-	-	-	968	858	-	950	846	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1541	-	-	864	783	1019	864	783	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	864	783	-	864	783	-
Stage 1	-	-	-	-	-	-	951	844	-	968	857	-
Stage 2	-	-	-	-	-	-	955	855	-	937	843	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.8	9.1	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	888	1567	-	-	1541	-	-	893
HCM Lane V/C Ratio	0.016	0.003	-	-	0.003	-	-	0.016
HCM Control Delay (s)	9.1	7.3	0	-	7.3	0	-	9.1
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	6	685	4	4	839
Future Volume (vph)	4	6	685	4	4	839
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	1672	0	1791	0	1719	1810
Flt Permitted	0.982				0.950	
Satd. Flow (perm)	1672	0	1791	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	6%	6%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	765	0	4	932
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

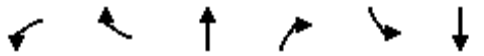
Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	685	4	4	839
Future Vol, veh/h	4	6	685	4	4	839
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	5	5
Mvmt Flow	4	7	761	4	4	932

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1703	763	0	0	765	0
Stage 1	763	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	101	404	-	-	835	-
Stage 1	460	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	100	404	-	-	835	-
Mov Cap-2 Maneuver	100	-	-	-	-	-
Stage 1	458	-	-	-	-	-
Stage 2	380	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.1	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	182	835	-
HCM Lane V/C Ratio	-	-	0.061	0.005	-
HCM Control Delay (s)	-	-	26.1	9.3	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	34	157	530	69	213	630
Future Volume (vph)	34	157	530	69	213	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	250		0	525	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				100	
Satd. Flow (prot)	1492	1335	1798	0	1719	1810
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1492	1335	1798	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1124		1108			981
Travel Time (s)	17.0		16.8			14.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	21%	21%	4%	4%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	212	809	0	288	851
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	17

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	157	530	69	213	630
Future Vol, veh/h	34	157	530	69	213	630
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	250	-	-	525	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	21	21	4	4	5	5
Mvmt Flow	46	212	716	93	288	851

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2190	763	0	0	809	0
Stage 1	763	-	-	-	-	-
Stage 2	1427	-	-	-	-	-
Critical Hdwy	6.61	6.41	-	-	4.15	-
Critical Hdwy Stg 1	5.61	-	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-	-
Follow-up Hdwy	3.689	3.489	-	-	2.245	-
Pot Cap-1 Maneuver	~ 44	375	-	-	804	-
Stage 1	428	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 28	375	-	-	804	-
Mov Cap-2 Maneuver	~ 28	-	-	-	-	-
Stage 1	275	-	-	-	-	-
Stage 2	201	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	131.7	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	28	375	804	-
HCM Lane V/C Ratio	-	-	1.641	0.566	0.358	-
HCM Control Delay (s)	-	-	$ 618	26.4	12	-
HCM Lane LOS	-	-	F	D	B	-
HCM 95th %tile Q(veh)	-	-	5.4	3.4	1.6	-

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	91	195	418	213	299	312
Future Volume (vph)	91	195	418	213	299	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	255		350	350	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Satd. Flow (prot)	1770	1583	1845	1568	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1845	1568	1770	1863
Link Speed (mph)	10		45			45
Link Distance (ft)	672		1734			1092
Travel Time (s)	45.8		26.3			16.5
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	134	287	615	313	440	459
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	99.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	91	195	418	213	299	312
Future Vol, veh/h	91	195	418	213	299	312
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	255	-	350	350	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	134	287	615	313	440	459

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1954	615	0	-	615	0
Stage 1	615	-	-	-	-	-
Stage 2	1339	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 70	491	-	0	965	-
Stage 1	539	-	-	0	-	-
Stage 2	244	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 38	491	-	-	965	-
Mov Cap-2 Maneuver	~ 38	-	-	-	-	-
Stage 1	293	-	-	-	-	-
Stage 2	244	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 446	0	5.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	38	491	965	-
HCM Lane V/C Ratio	-	3.522	0.584	0.456	-
HCM Control Delay (s)	-	$ 1354.2	22.1	11.8	-
HCM Lane LOS	-	F	C	B	-
HCM 95th %tile Q(veh)	-	15.3	3.7	2.4	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	17	4	52	184	16	9	274	8	16	294	97
Future Volume (vph)	124	17	4	52	184	16	9	274	8	16	294	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1781	0	0	1842	1583	0	1799	0	0	1732	0
Flt Permitted		0.959			0.989			0.998			0.998	
Satd. Flow (perm)	0	1781	0	0	1842	1583	0	1799	0	0	1732	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	262	18	0	323	0	0	453	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	22
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	124	17	4	52	184	16	9	274	8	16	294	97
Future Vol, veh/h	124	17	4	52	184	16	9	274	8	16	294	97
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	5	5	5	6	6	6
Mvmt Flow	138	19	4	58	204	18	10	304	9	18	327	108
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	14.6	18.5	19.2	28.8
HCM LOS	B	C	C	D

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	86%	22%	0%	4%
Vol Thru, %	94%	12%	78%	0%	72%
Vol Right, %	3%	3%	0%	100%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	291	145	236	16	407
LT Vol	9	124	52	0	16
Through Vol	274	17	184	0	294
RT Vol	8	4	0	16	97
Lane Flow Rate	323	161	262	18	452
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.596	0.343	0.548	0.033	0.787
Departure Headway (Hd)	6.636	7.666	7.52	6.687	6.265
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	540	472	477	532	574
Service Time	4.729	5.666	5.309	4.476	4.346
HCM Lane V/C Ratio	0.598	0.341	0.549	0.034	0.787
HCM Control Delay	19.2	14.6	19.1	9.7	28.8
HCM Lane LOS	C	B	C	A	D
HCM 95th-tile Q	3.9	1.5	3.2	0.1	7.4

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	47	137	479	24	66	345
Future Volume (vph)	47	137	479	24	66	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	250		0	525	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.994			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1444	1292	1852	0	1671	1759
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1444	1292	1852	0	1671	1759
Link Speed (mph)	45		45			45
Link Distance (ft)	1124		1108			981
Travel Time (s)	17.0		16.8			14.9
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles (%)	25%	25%	2%	2%	8%	8%
Adj. Flow (vph)	70	204	715	36	99	515
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	204	751	0	99	515
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	137	479	24	66	345
Future Vol, veh/h	47	137	479	24	66	345
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	250	-	-	525	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	67	67	67	67
Heavy Vehicles, %	25	25	2	2	8	8
Mvmt Flow	70	204	715	36	99	515

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1446	733	0	0	751	0
Stage 1	733	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Critical Hdwy	6.65	6.45	-	-	4.18	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.525	-	-	2.272	-
Pot Cap-1 Maneuver	129	385	-	-	832	-
Stage 1	436	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	114	385	-	-	832	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	38	0	1.6
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	114	385	832	-
HCM Lane V/C Ratio	-	-	0.615	0.531	0.118	-
HCM Control Delay (s)	-	-	77.4	24.5	9.9	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	3.1	3	0.4	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	105	221	252	16	41	343
Future Volume (vph)	105	221	252	16	41	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	255		350	350	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1827	1553	1597	1681
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1827	1553	1597	1681
Link Speed (mph)	10		45			45
Link Distance (ft)	672		1734			1092
Travel Time (s)	45.8		26.3			16.5
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles (%)	2%	2%	4%	4%	13%	13%
Adj. Flow (vph)	194	409	467	30	76	635
Shared Lane Traffic (%)						
Lane Group Flow (vph)	194	409	467	30	76	635
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	22.4

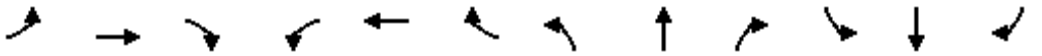
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	105	221	252	16	41	343
Future Vol, veh/h	105	221	252	16	41	343
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	255	-	350	350	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	54	54	54	54	54	54
Heavy Vehicles, %	2	2	4	4	13	13
Mvmt Flow	194	409	467	30	76	635

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1254	467	0	-	467	0
Stage 1	467	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.23	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.317	-
Pot Cap-1 Maneuver	~ 190	596	-	0	1039	-
Stage 1	631	-	-	0	-	-
Stage 2	449	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	~ 176	596	-	-	1039	-
Mov Cap-2 Maneuver	~ 176	-	-	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	449	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	64.9	0	0.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	176	596	1039	-
HCM Lane V/C Ratio	-	1.105	0.687	0.073	-
HCM Control Delay (s)	-	152.6	23.2	8.7	-
HCM Lane LOS	-	F	C	A	-
HCM 95th %tile Q(veh)	-	9.8	5.3	0.2	-

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



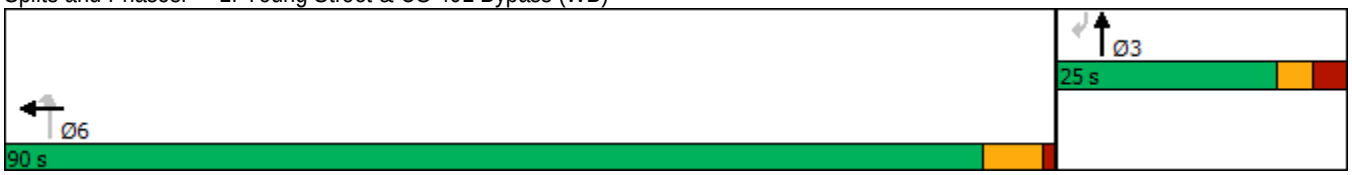
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	534	251	0	134	0	0	0	416
Future Volume (vph)	0	0	0	0	534	251	0	134	0	0	0	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						270						704
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			412			1248	
Travel Time (s)		10.5			4.3			5.1			24.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	0	0	0	0	574	270	0	144	0	0	0	447
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	574	270	0	144	0	0	0	447
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					1	0		1				1
Detector Template												
Leading Detector (ft)					426	0		40				40
Trailing Detector (ft)					420	0		0				0
Detector 1 Position(ft)					420	0		0				0
Detector 1 Size(ft)					6	20		40				40
Detector 1 Type					Cl+Ex	Cl+Ex		Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0	0.0		0.0				0.0
Detector 1 Queue (s)					0.0	0.0		0.0				0.0
Detector 1 Delay (s)					0.0	0.0		15.0				15.0
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					90.0	90.0		25.0				25.0
Total Split (%)					78.3%	78.3%		21.7%				21.7%
Maximum Green (s)					83.6	83.6		18.9				18.9
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					6.0	6.0		2.0				2.0
Minimum Gap (s)					3.4	3.4		2.0				2.0
Time Before Reduce (s)					15.0	15.0		0.0				0.0
Time To Reduce (s)					45.0	45.0		0.0				0.0
Recall Mode					Min	Min		None				None
Act Effct Green (s)					16.2	16.2		34.4				8.1
Actuated g/C Ratio					0.47	0.47		1.00				0.24
v/c Ratio					0.34	0.30		0.08				0.38
Control Delay					6.3	2.0		0.1				0.9
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					6.3	2.0		0.1				0.9
LOS					A	A		A				A
Approach Delay					4.9			0.1			0.9	
Approach LOS					A			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 34.4			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 3.2		Intersection LOS: A	
Intersection Capacity Utilization 44.7%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-2236			

! Phase conflict between lane groups.

Splits and Phases: 1: Young Street & US 401 Bypass (WB)



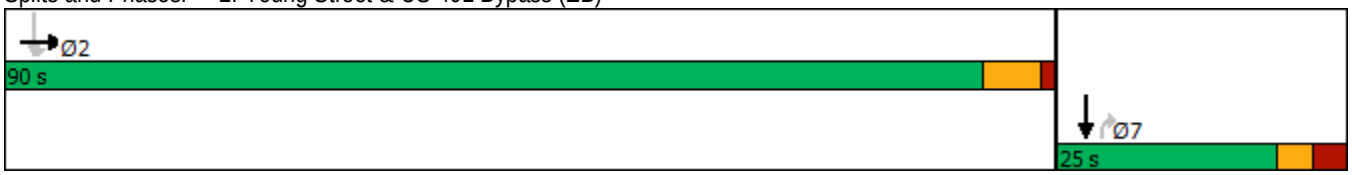
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	961	535	0	0	0	0	0	469	0	149	0
Future Volume (vph)	0	961	535	0	0	0	0	0	469	0	149	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		225	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected												
Satd. Flow (prot)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			575						307			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		381			839			450			381	
Travel Time (s)		4.7			10.4			6.8			4.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	0	1033	575	0	0	0	0	0	504	0	160	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1033	575	0	0	0	0	0	504	0	160	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	0						1		1	
Detector Template												
Leading Detector (ft)		426	0						40		40	
Trailing Detector (ft)		420	0						0		0	
Detector 1 Position(ft)		420	0						0		0	
Detector 1 Size(ft)		6	20						40		40	
Detector 1 Type		Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0						0.0		0.0	
Detector 1 Queue (s)		0.0	0.0						0.0		0.0	
Detector 1 Delay (s)		0.0	0.0						15.0		15.0	
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		90.0	90.0						25.0		25.0	
Total Split (%)		78.3%	78.3%						21.7%		21.7%	
Maximum Green (s)		83.6	83.6						18.9		18.9	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		6.0	6.0						2.0		2.0	
Minimum Gap (s)		3.4	3.4						2.0		2.0	
Time Before Reduce (s)		15.0	15.0						0.0		0.0	
Time To Reduce (s)		45.0	45.0						0.0		0.0	
Recall Mode		Min	Min						None		None	
Act Effct Green (s)		36.4	36.4						11.0		58.0	
Actuated g/C Ratio		0.63	0.63						0.19		1.00	
v/c Ratio		0.47	0.48						0.66		0.09	
Control Delay		6.4	2.0						14.3		0.1	
Queue Delay		0.0	0.0						0.0		0.0	
Total Delay		6.4	2.0						14.3		0.1	
LOS		A	A						B		A	
Approach Delay		4.8						14.3			0.1	
Approach LOS		A						B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 58			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 51.3%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-2390			

! Phase conflict between lane groups.

Splits and Phases: 2: Young Street & US 401 Bypass (EB)



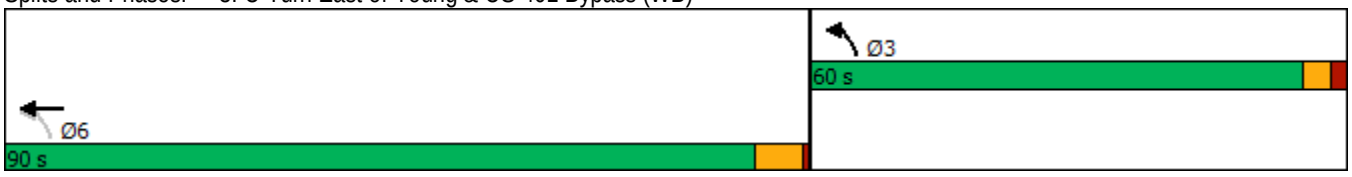
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	565	369	0
Future Volume (vph)	0	0	0	565	369	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3575	1752	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3575	1752	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	577	377	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	577	377	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	1.01	1.01
Turning Speed (mph)		9	15		15	9
Number of Detectors				1	1	
Detector Template						
Leading Detector (ft)				426	40	
Trailing Detector (ft)				420	0	
Detector 1 Position(ft)				420	0	
Detector 1 Size(ft)				6	40	
Detector 1 Type				Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)				0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	
Detector 1 Delay (s)				0.0	15.0	
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				90.0	60.0	
Total Split (%)				60.0%	40.0%	
Maximum Green (s)				83.6	54.9	

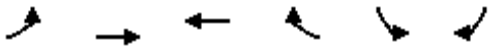
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)				6.0	2.0	
Minimum Gap (s)				3.4	2.0	
Time Before Reduce (s)				15.0	0.0	
Time To Reduce (s)				45.0	0.0	
Recall Mode				Min	None	
Act Effct Green (s)				15.4	32.5	
Actuated g/C Ratio				0.47	1.00	
v/c Ratio				0.34	0.22	
Control Delay				6.0	0.3	
Queue Delay				0.0	0.0	
Total Delay				6.0	0.3	
LOS				A	A	
Approach Delay				6.0	0.3	
Approach LOS				A	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 32.5			
Natural Cycle: 40			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 3.8		Intersection LOS: A	
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			
Description: 05-2391			

! Phase conflict between lane groups.

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)



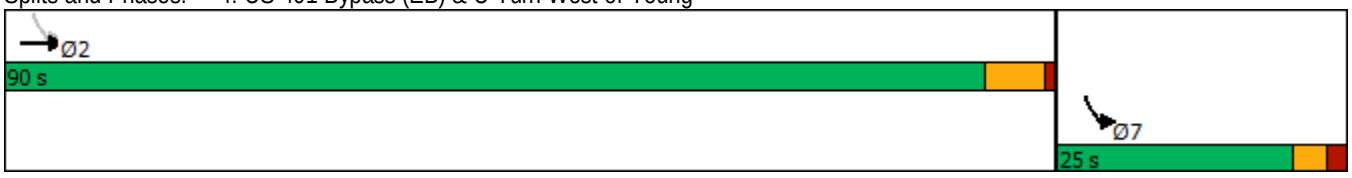


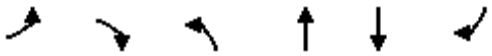
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1270	0	0	360	0
Future Volume (vph)	0	1270	0	0	360	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-1%		-1%	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3487	0	0	1761	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3487	0	0	1761	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	443		58	
Travel Time (s)		13.5	5.5		1.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	0	1351	0	0	383	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1351	0	0	383	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	0.99	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors		1			1	
Detector Template						
Leading Detector (ft)		426			40	
Trailing Detector (ft)		420			0	
Detector 1 Position(ft)		420			0	
Detector 1 Size(ft)		6			40	
Detector 1 Type		Cl+Ex			Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0			0.0	
Detector 1 Queue (s)		0.0			0.0	
Detector 1 Delay (s)		0.0			15.0	
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		90.0			25.0	
Total Split (%)		78.3%			21.7%	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Maximum Green (s)		83.8			20.2	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0			2.0	
Minimum Gap (s)		3.4			2.0	
Time Before Reduce (s)		15.0			0.0	
Time To Reduce (s)		45.0			0.0	
Recall Mode		Min			None	
Act Effct Green (s)		30.0			47.0	
Actuated g/C Ratio		0.64			1.00	
v/c Ratio		0.61			0.22	
Control Delay		6.2			0.3	
Queue Delay		0.0			0.0	
Total Delay		6.2			0.3	
LOS		A			A	
Approach Delay		6.2			0.3	
Approach LOS		A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 47	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 4.9	Intersection LOS: A
Intersection Capacity Utilization 62.6%	ICU Level of Service B
Analysis Period (min) 15	
Description: 05-2425	
! Phase conflict between lane groups.	

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	17	30	39	347	386	25
Future Volume (vph)	17	30	39	347	386	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914				0.992	
Flt Protected	0.982		0.950			
Satd. Flow (prot)	1594	0	1770	1863	1812	0
Flt Permitted	0.982		0.950			
Satd. Flow (perm)	1594	0	1770	1863	1812	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	7%	7%	2%	2%	4%	4%
Adj. Flow (vph)	19	33	43	381	424	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	43	381	451	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.5%		ICU Level of Service A	
Analysis Period (min) 15			

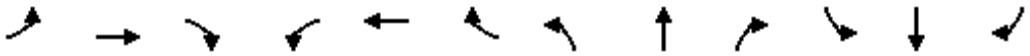
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	30	39	347	386	25
Future Vol, veh/h	17	30	39	347	386	25
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	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	2	2	4	4
Mvmt Flow	19	33	43	381	424	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	905	438	451	0	-	0
Stage 1	438	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	301	608	1109	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	289	608	1109	-	-	-
Mov Cap-2 Maneuver	289	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	621	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1109	-	435	-	-
HCM Lane V/C Ratio	0.039	-	0.119	-	-
HCM Control Delay (s)	8.4	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	42	4	5	34	4	4	4	7	4	4	4
Future Volume (vph)	4	42	4	5	34	4	4	4	7	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.990			0.988			0.932			0.955	
Flt Protected		0.996			0.995			0.988			0.984	
Satd. Flow (prot)	0	1735	0	0	1813	0	0	1434	0	0	1750	0
Flt Permitted		0.996			0.995			0.988			0.984	
Satd. Flow (perm)	0	1735	0	0	1813	0	0	1434	0	0	1750	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	22%	22%	22%	2%	2%	2%
Adj. Flow (vph)	4	46	4	5	37	4	4	4	8	4	4	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	46	0	0	16	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.0%		ICU Level of Service A	
Analysis Period (min) 15			

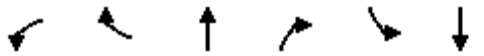
Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	4	42	4	5	34	4	4	4	7	4	4	4
Future Vol, veh/h	4	42	4	5	34	4	4	4	7	4	4	4
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	8	8	8	3	3	3	22	22	22	2	2	2
Mvmt Flow	4	46	4	5	37	4	4	4	8	4	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	52	0	0	111	109	50	111	109	39
Stage 1	-	-	-	-	-	-	58	58	-	49	49	-
Stage 2	-	-	-	-	-	-	53	51	-	62	60	-
Critical Hdwy	4.18	-	-	4.13	-	-	7.32	6.72	6.42	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Follow-up Hdwy	2.272	-	-	2.227	-	-	3.698	4.198	3.498	3.518	4.018	3.318
Pot Cap-1 Maneuver	1530	-	-	1548	-	-	822	745	964	867	781	1033
Stage 1	-	-	-	-	-	-	906	809	-	964	854	-
Stage 2	-	-	-	-	-	-	911	815	-	949	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1530	-	-	1545	-	-	810	739	962	852	775	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	810	739	-	852	775	-
Stage 1	-	-	-	-	-	-	901	805	-	961	851	-
Stage 2	-	-	-	-	-	-	900	813	-	933	841	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.9	9.3	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	851	1530	-	-	1545	-	-	874
HCM Lane V/C Ratio	0.019	0.003	-	-	0.004	-	-	0.015
HCM Control Delay (s)	9.3	7.4	0	-	7.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	4	471	4	8	677
Future Volume (vph)	4	4	471	4	8	677
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1719	1810
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	5%	5%
Adj. Flow (vph)	4	4	523	4	9	752
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	527	0	9	752
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	471	4	8	677
Future Vol, veh/h	4	4	471	4	8	677
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	4	4	523	4	9	752

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1295	525	0	0	527	0
Stage 1	525	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	179	552	-	-	1025	-
Stage 1	593	-	-	-	-	-
Stage 2	457	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	177	552	-	-	1025	-
Mov Cap-2 Maneuver	177	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	268	1025	-
HCM Lane V/C Ratio	-	-	0.033	0.009	-
HCM Control Delay (s)	-	-	18.9	8.5	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	88	385	27	135	551
Future Volume (vph)	43	88	385	27	135	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	250		0	525	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.991			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1719	1538	1810	0	1719	1810
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1719	1538	1810	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1124		1108			981
Travel Time (s)	17.0		16.8			14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	4%	4%	5%	5%
Adj. Flow (vph)	47	96	418	29	147	599
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	96	447	0	147	599
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			

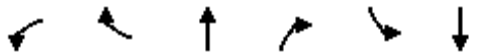
Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	88	385	27	135	551
Future Vol, veh/h	43	88	385	27	135	551
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	250	-	-	525	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	4	4	5	5
Mvmt Flow	47	96	418	29	147	599

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1326	433	0	0	447	0
Stage 1	433	-	-	-	-	-
Stage 2	893	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	169	616	-	-	1098	-
Stage 1	648	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	146	616	-	-	1098	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	395	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.4	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	146	616	1098	-
HCM Lane V/C Ratio	-	-	0.32	0.155	0.134	-
HCM Control Delay (s)	-	-	40.9	11.9	8.8	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0.5	0.5	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	81	379	13	80	455
Future Volume (vph)	20	81	379	13	80	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	255		350	350	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Link Speed (mph)	10		45			45
Link Distance (ft)	672		1734			1092
Travel Time (s)	45.8		26.3			16.5
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	86	403	14	85	484
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	86	403	14	85	484
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.7%		ICU Level of Service A	
Analysis Period (min) 15			

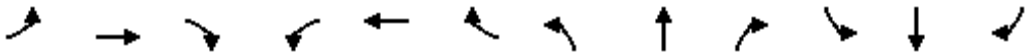
Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	81	379	13	80	455
Future Vol, veh/h	20	81	379	13	80	455
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Free	-	None
Storage Length	0	255	-	350	350	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	86	403	14	85	484

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1057	403	0	-	403	0
Stage 1	403	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	249	647	-	0	1156	-
Stage 1	675	-	-	0	-	-
Stage 2	517	-	-	0	-	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	231	647	-	-	1156	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	231	647	1156	-
HCM Lane V/C Ratio	-	0.092	0.133	0.074	-
HCM Control Delay (s)	-	22.2	11.4	8.4	-
HCM Lane LOS	-	C	B	A	-
HCM 95th %tile Q(veh)	-	0.3	0.5	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	116	8	15	44	17	8	259	46	15	256	36
Future Volume (vph)	53	116	8	15	44	17	8	259	46	15	256	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	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
Frt		0.994				0.850		0.980			0.984	
Flt Protected		0.985			0.987			0.999			0.998	
Satd. Flow (prot)	0	1806	0	0	1839	1583	0	1789	0	0	1794	0
Flt Permitted		0.985			0.987			0.999			0.998	
Satd. Flow (perm)	0	1806	0	0	1839	1583	0	1789	0	0	1794	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	59	129	9	17	49	19	9	288	51	17	284	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	197	0	0	66	19	0	348	0	0	341	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	53	116	8	15	44	17	8	259	46	15	256	36
Future Vol, veh/h	53	116	8	15	44	17	8	259	46	15	256	36
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	3	3	3	2	2	2	4	4	4	4	4	4
Mvmt Flow	59	129	9	17	49	19	9	288	51	17	284	40
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	12.2	10.2	13.8	13.7
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	30%	25%	0%	5%
Vol Thru, %	83%	66%	75%	0%	83%
Vol Right, %	15%	5%	0%	100%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	313	177	59	17	307
LT Vol	8	53	15	0	15
Through Vol	259	116	44	0	256
RT Vol	46	8	0	17	36
Lane Flow Rate	348	197	66	19	341
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.512	0.333	0.125	0.032	0.505
Departure Headway (Hd)	5.299	6.087	6.863	6.018	5.328
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	678	588	521	592	675
Service Time	3.349	4.147	4.632	3.787	3.38
HCM Lane V/C Ratio	0.513	0.335	0.127	0.032	0.505
HCM Control Delay	13.8	12.2	10.6	9	13.7
HCM Lane LOS	B	B	B	A	B
HCM 95th-tile Q	2.9	1.5	0.4	0.1	2.9

Appendix J:

Synchro Output:

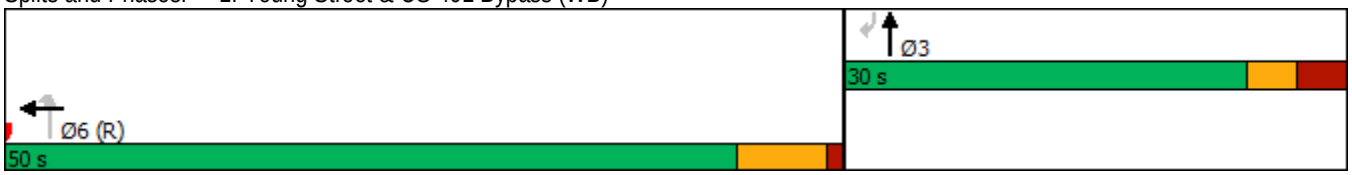
Approved PUD Build-out (2025)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1452	389	0	60	0	0	0	590
Future Volume (vph)	0	0	0	0	1452	389	0	60	0	0	0	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						432						46
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			477			1248	
Travel Time (s)		10.5			4.3			5.9			24.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1613	432	0	67	0	0	0	656
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					50.0	50.0		30.0				30.0
Total Split (%)					62.5%	62.5%		37.5%				37.5%
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					C-Max	C-Max		None				None
Act Effct Green (s)					48.0	48.0		80.0				22.0
Actuated g/C Ratio					0.60	0.60		1.00				0.28
v/c Ratio					0.76	0.39		0.04				0.81
Control Delay					12.4	1.6		0.0				33.4
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					12.4	1.6		0.0				33.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS					B	A		A				C
Approach Delay					10.1						33.4	
Approach LOS					B						C	
Queue Length 50th (ft)					283	14		0				158
Queue Length 95th (ft)					380	11		0				218
Internal Link Dist (ft)		767			269			397			1168	
Turn Bay Length (ft)						225						85
Base Capacity (vph)					2113	1118		1794				915
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					0.76	0.39		0.04				0.72

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 1 (1%), Referenced to phase 2: and 6:NBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-2236			
! Phase conflict between lane groups.			

Splits and Phases: 1: Young Street & US 401 Bypass (WB)

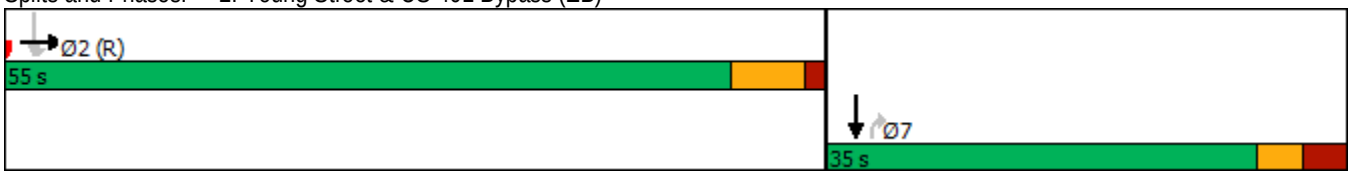


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	282	857	0	0	0	0	0	937	0	205	0
Future Volume (vph)	0	282	857	0	0	0	0	0	937	0	205	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		400	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	3436	1537	0	0	0	0	0	2641	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3436	1537	0	0	0	0	0	2586	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			816						931			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		448			839			450			381	
Travel Time (s)		5.6			10.4			6.8			4.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	6%	6%	6%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	313	952	0	0	0	0	0	1041	0	228	0
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		55.0	55.0						35.0		35.0	
Total Split (%)		61.1%	61.1%						38.9%		38.9%	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max						None		None	
Act Effct Green (s)		65.0	65.0						15.0		90.0	
Actuated g/C Ratio		0.72	0.72						0.17		1.00	
v/c Ratio		0.13	0.71						0.86		0.12	
Control Delay		4.6	5.0						12.4		0.1	
Queue Delay		0.0	0.0						0.0		0.0	
Total Delay		4.6	5.0						12.4		0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A	A						B		A	
Approach Delay		4.9						12.4			0.1	
Approach LOS		A						B			A	
Queue Length 50th (ft)		21	17						32		0	
Queue Length 95th (ft)		43	71						90		0	
Internal Link Dist (ft)		368			759			370			301	
Turn Bay Length (ft)			400						250			
Base Capacity (vph)		2482	1336						1482		1817	
Starvation Cap Reductn		0	11						0		0	
Spillback Cap Reductn		0	0						0		0	
Storage Cap Reductn		0	0						0		0	
Reduced v/c Ratio		0.13	0.72						0.70		0.13	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 88 (98%), Referenced to phase 2:EBSB and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 7.6		Intersection LOS: A	
Intersection Capacity Utilization 72.2%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-2390			
! Phase conflict between lane groups.			

Splits and Phases: 2: Young Street & US 401 Bypass (EB)

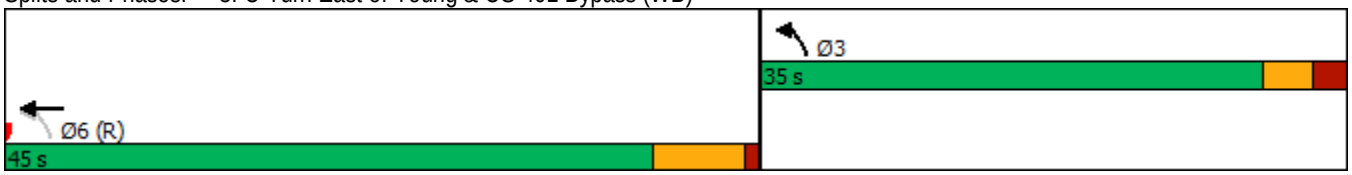


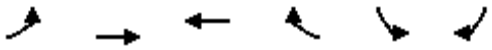
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1342	704	0
Future Volume (vph)	0	0	0	1342	704	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	2%			-2%	2%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	0	0	0	3540	1702	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3540	1702	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1459	765	0
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				45.0	35.0	
Total Split (%)				56.3%	43.8%	
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode				C-Max	None	
Act Effct Green (s)				60.6	80.0	
Actuated g/C Ratio				0.76	1.00	
v/c Ratio				0.54	0.45	
Control Delay				5.2	0.9	
Queue Delay				0.0	0.0	
Total Delay				5.2	0.9	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS				A	A	
Approach Delay				5.2	0.9	
Approach LOS				A	A	
Queue Length 50th (ft)				114	0	
Queue Length 95th (ft)				198	0	
Internal Link Dist (ft)	382			926	1	
Turn Bay Length (ft)						
Base Capacity (vph)				2682	1702	
Starvation Cap Reductn				0	0	
Spillback Cap Reductn				0	0	
Storage Cap Reductn				0	0	
Reduced v/c Ratio				0.54	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2: and 6:NBWB, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 3.7		Intersection LOS: A	
Intersection Capacity Utilization 84.4%		ICU Level of Service E	
Analysis Period (min) 15			
Description: 05-2391			
! Phase conflict between lane groups.			

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)



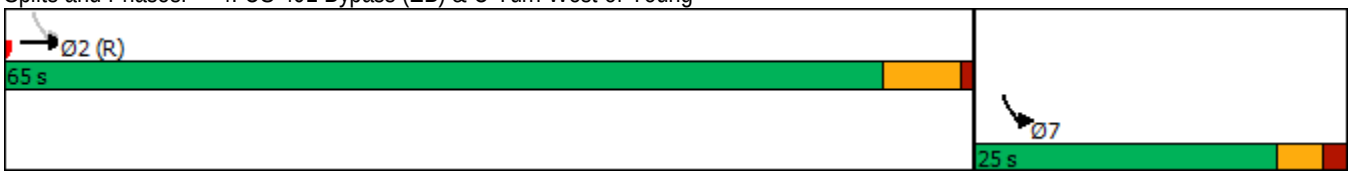


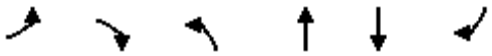
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	797	0	0	401	0
Future Volume (vph)	0	797	0	0	401	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		1%	-1%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	3421	0	0	1778	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3421	0	0	1778	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	376		58	
Travel Time (s)		13.5	4.7		1.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	886	0	0	446	0
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		65.0			25.0	
Total Split (%)		72.2%			27.8%	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		C-Max			None	
Act Effct Green (s)		73.2			90.0	
Actuated g/C Ratio		0.81			1.00	
v/c Ratio		0.32			0.25	
Control Delay		2.5			0.3	
Queue Delay		0.0			0.0	
Total Delay		2.5			0.3	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		A			A	
Approach Delay		2.5			0.3	
Approach LOS		A			A	
Queue Length 50th (ft)		47			0	
Queue Length 95th (ft)		62			0	
Internal Link Dist (ft)		1009	296		1	
Turn Bay Length (ft)						
Base Capacity (vph)		2781			1778	
Starvation Cap Reductn		0			0	
Spillback Cap Reductn		0			0	
Storage Cap Reductn		0			0	
Reduced v/c Ratio		0.32			0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBSB and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 1.7		Intersection LOS: A	
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			
Description: 05-2425			
! Phase conflict between lane groups.			

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	99	37	450	510	7
Future Volume (vph)	40	99	37	450	510	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1644	0	1736	1827	1859	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1644	0	1736	1827	1859	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Confl. Peds. (#/hr)			1			1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	0	41	500	575	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	99	37	450	510	7
Future Vol, veh/h	40	99	37	450	510	7
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	44	110	41	500	567	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1154	572	576	0	-	0
Stage 1	572	-	-	-	-	-
Stage 2	582	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	217	518	987	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	207	518	986	-	-	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	556	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.1	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	986	-	362	-	-
HCM Lane V/C Ratio	0.042	-	0.427	-	-
HCM Control Delay (s)	8.8	-	22.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	41	8	17	28	4	28	4	54	4	4	5
Future Volume (vph)	4	41	8	17	28	4	28	4	54	4	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1801	0	0	1778	0	0	1677	0	0	1730	0
Flt Permitted		0.997			0.983			0.984			0.986	
Satd. Flow (perm)	0	1801	0	0	1778	0	0	1677	0	0	1730	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	54	0	0	95	0	0	14	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	41	8	17	28	4	28	4	54	4	4	5
Future Vol, veh/h	4	41	8	17	28	4	28	4	54	4	4	5
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	4	4	4	2	2	2	2	2	2
Mvmt Flow	4	46	9	19	31	4	31	4	60	4	4	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	56	0	0	136	134	52	163	136	34
Stage 1	-	-	-	-	-	-	60	60	-	72	72	-
Stage 2	-	-	-	-	-	-	76	74	-	91	64	-
Critical Hdwy	4.13	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1536	-	-	835	757	1016	802	755	1039
Stage 1	-	-	-	-	-	-	951	845	-	938	835	-
Stage 2	-	-	-	-	-	-	933	833	-	916	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1535	-	-	816	743	1015	741	741	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	816	743	-	741	741	-
Stage 1	-	-	-	-	-	-	947	842	-	934	823	-
Stage 2	-	-	-	-	-	-	911	821	-	855	839	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.6	9.3	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	926	1567	-	-	1535	-	-	833
HCM Lane V/C Ratio	0.103	0.003	-	-	0.012	-	-	0.017
HCM Control Delay (s)	9.3	7.3	0	-	7.4	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	6	927	4	4	1054
Future Volume (vph)	4	6	927	4	4	1054
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	1672	0	1791	0	1719	1810
Flt Permitted	0.982				0.950	
Satd. Flow (perm)	1672	0	1791	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	6%	6%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	1034	0	4	1171
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	927	4	4	1054
Future Vol, veh/h	4	6	927	4	4	1054
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	5	5
Mvmt Flow	4	7	1030	4	4	1171

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2211	1032	0	0	1034	0
Stage 1	1032	-	-	-	-	-
Stage 2	1179	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	48	283	-	-	661	-
Stage 1	344	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	283	-	-	661	-
Mov Cap-2 Maneuver	48	-	-	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	292	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	47.3	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	96	661	-
HCM Lane V/C Ratio	-	-	0.116	0.007	-
HCM Control Delay (s)	-	-	47.3	10.5	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

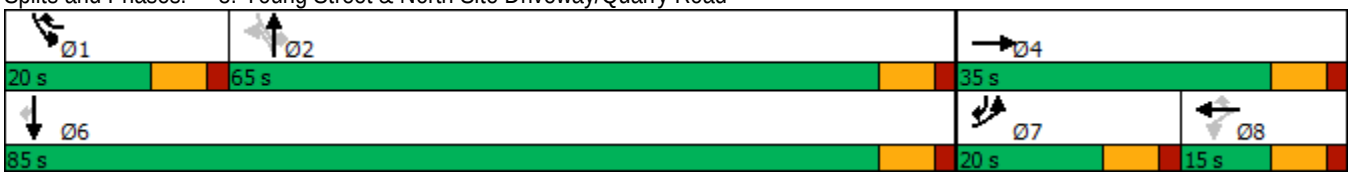
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	4	87	34	4	157	10	619	69	213	699	147
Future Volume (vph)	153	4	87	34	4	157	10	619	69	213	699	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	0		250	100		100	525		100
Storage Lanes	1		0	0		1	1		1	1		1
Taper Length (ft)	100			25			100			100		
Satd. Flow (prot)	1770	1595	0	0	1520	1335	1770	1827	1553	1719	1810	1583
Flt Permitted	0.950				0.672		0.223			0.074		
Satd. Flow (perm)	1770	1595	0	0	1069	1335	415	1827	1521	134	1810	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						131			164			155
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		742			1124			1108			981	
Travel Time (s)		20.2			17.0			16.8			14.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.74	0.90	0.74	0.90	0.74	0.74	0.74	0.74	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	21%	2%	21%	2%	4%	4%	5%	5%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	101	0	0	50	212	11	836	93	288	945	163
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases				8		8	2		2	2		6
Detector Phase	7	4		8	8	1	2	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0	12.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0	19.0	14.0	19.0	14.0
Total Split (s)	20.0	35.0		15.0	15.0	20.0	65.0	65.0	65.0	20.0	85.0	20.0
Total Split (%)	16.7%	29.2%		12.5%	12.5%	16.7%	54.2%	54.2%	54.2%	16.7%	70.8%	16.7%
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	None
Act Effct Green (s)	14.5	25.7			10.0	26.6	54.2	54.2	54.2	69.7	74.8	95.9
Actuated g/C Ratio	0.13	0.23			0.09	0.24	0.49	0.49	0.49	0.63	0.68	0.87
v/c Ratio	0.73	0.27			0.52	0.50	0.05	0.94	0.11	0.95	0.77	0.12
Control Delay	68.5	38.1			72.5	19.8	16.5	45.9	0.3	73.5	18.8	0.5
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.5	38.1			72.5	19.8	16.5	45.9	0.3	73.5	18.8	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	D			E	B	B	D	A	E	B	A
Approach Delay		57.2			29.9			41.1			27.9	
Approach LOS		E			C			D			C	
Queue Length 50th (ft)	129	63			38	50	4	579	0	~181	467	1
Queue Length 95th (ft)	#238	113			#94	82	15	549	0	#244	427	10
Internal Link Dist (ft)		662			1044			1028			901	
Turn Bay Length (ft)	275					250	100		100	525		100
Base Capacity (vph)	246	444			99	420	231	1018	920	304	1335	1384
Starvation Cap Reductn	0	0			0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0			0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0			0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.23			0.51	0.50	0.05	0.82	0.10	0.95	0.71	0.12

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 110.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 35.2 Intersection LOS: D
Intersection Capacity Utilization 74.4% 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.

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	9	91	4	195	4	454	213	299	507	10
Future Volume (vph)	13	4	9	91	4	195	4	454	213	299	507	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Satd. Flow (prot)	0	1731	0	0	1777	1583	1770	1845	1568	1770	1859	0
Flt Permitted		0.976			0.954		0.950			0.950		
Satd. Flow (perm)	0	1731	0	0	1777	1583	1770	1845	1568	1770	1859	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		682			672			1734			1092	
Travel Time (s)		18.6			45.8			26.3			16.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.68	0.90	0.68	0.90	0.68	0.68	0.68	0.68	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	0	138	287	4	668	313	440	757	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	305.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	4	9	91	4	195	4	454	213	299	507	10
Future Vol, veh/h	13	4	9	91	4	195	4	454	213	299	507	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	68	90	68	90	68	68	68	68	90
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	2	2
Mvmt Flow	14	4	10	134	4	287	4	668	313	440	746	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2454	2308	752	2315	2313	668	757	0	-	668	0	0
Stage 1	1632	1632	-	676	676	-	-	-	-	-	-	-
Stage 2	822	676	-	1639	1637	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	21	38	410	~ 27	38	458	854	-	0	922	-	-
Stage 1	128	159	-	443	453	-	-	-	0	-	-	-
Stage 2	368	453	-	~ 127	159	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	~ 4	20	410	~ 14	20	458	854	-	-	922	-	-
Mov Cap-2 Maneuver	~ 4	20	-	~ 14	20	-	-	-	-	-	-	-
Stage 1	127	83	-	441	451	-	-	-	-	-	-	-
Stage 2	136	451	-	~ 61	83	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 2427.1	$ 1488.8	0.1	4.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	854	-	7	14	458	922	-	-
HCM Lane V/C Ratio	0.005	-	4.127	9.876	0.626	0.477	-	-
HCM Control Delay (s)	9.2	-	$ 2427.1	$ 4524.6	25.1	12.4	-	-
HCM Lane LOS	A	-	F	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	4.9	18.4	4.2	2.6	-	-

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

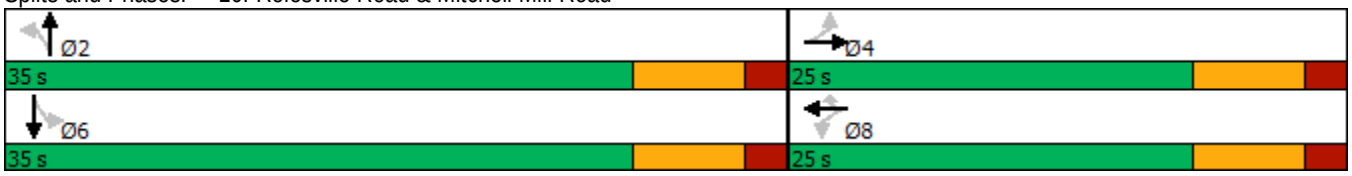
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	17	4	52	184	16	9	313	8	16	367	228
Future Volume (vph)	124	17	4	52	184	16	9	313	8	16	367	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1781	0	0	1842	1583	0	1802	0	0	1701	0
Flt Permitted		0.553			0.888			0.978			0.985	
Satd. Flow (perm)	0	1027	0	0	1654	1583	0	1764	0	0	1677	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	262	18	0	367	0	0	679	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0		25.0	25.0	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		5.0			5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		15.4			15.4	15.4		25.1			25.1	
Actuated g/C Ratio		0.30			0.30	0.30		0.49			0.49	
v/c Ratio		0.52			0.53	0.04		0.42			0.82	
Control Delay		22.8			20.0	13.9		10.5			22.2	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		22.8			20.0	13.9		10.5			22.2	

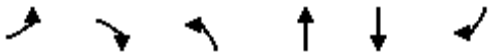
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			B	B		B			C	
Approach Delay		22.8			19.6			10.5			22.2	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		43			70	4		64			159	
Queue Length 95th (ft)		96			134	16		133			#382	
Internal Link Dist (ft)		1019			964			959			2438	
Turn Bay Length (ft)						285						
Base Capacity (vph)		420			676	648		1083			1029	
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		0.38			0.39	0.03		0.34			0.66	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 50.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 73.8%		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: 10: Rolesville Road & Mitchell Mill Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	100	24	625	770	51
Future Volume (vph)	74	100	24	625	770	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	125	0	100			100
Storage Lanes	1	1	1			1
Taper Length (ft)	100		100			
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Link Speed (mph)	25			45	45	
Link Distance (ft)	696			1092	1108	
Travel Time (s)	19.0			16.5	16.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	111	27	694	856	57
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.4%		ICU Level of Service A	
Analysis Period (min) 15			

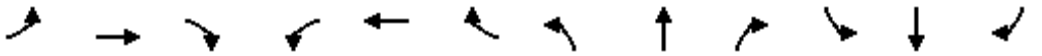
Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	74	100	24	625	770	51
Future Vol, veh/h	74	100	24	625	770	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	111	27	694	856	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1604	856	913	0	-	0
Stage 1	856	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	116	357	746	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	112	357	746	-	-	-
Mov Cap-2 Maneuver	112	-	-	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	468	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	52.3	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	746	-	112	357	-	-
HCM Lane V/C Ratio	0.036	-	0.734	0.311	-	-
HCM Control Delay (s)	10	-	96.5	19.6	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	4	1.3	-	-

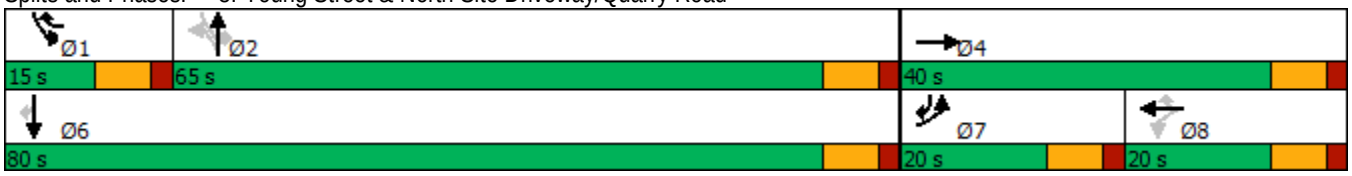


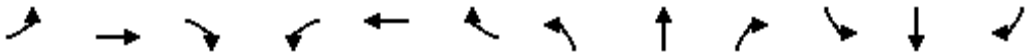
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	4	87	47	4	137	71	490	24	66	419	268
Future Volume (vph)	155	4	87	47	4	137	71	490	24	66	419	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		250	100		100	525		100
Storage Lanes	1		0	0		1	1		1	1		1
Taper Length (ft)	100			25			100			100		
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
Frt		0.856				0.850			0.850			0.850
Flt Protected	0.950				0.955		0.950			0.950		
Satd. Flow (prot)	1770	1595	0	0	1466	1292	1770	1863	1583	1671	1759	1583
Flt Permitted	0.950				0.665		0.414			0.102		
Satd. Flow (perm)	1770	1595	0	0	1021	1292	771	1863	1583	179	1759	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						163			164			298
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		602			1124			1108			981	
Travel Time (s)		16.4			17.0			16.8			14.9	
Peak Hour Factor	0.90	0.90	0.90	0.67	0.90	0.67	0.90	0.67	0.67	0.67	0.67	0.90
Heavy Vehicles (%)	2%	2%	2%	25%	2%	25%	2%	2%	2%	8%	8%	2%
Adj. Flow (vph)	172	4	97	70	4	204	79	731	36	99	625	298
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	101	0	0	74	204	79	731	36	99	625	298
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	0	1	1	0
Detector Template						Right						
Leading Detector (ft)	50	50		50	50	20	50	206	0	50	206	0
Trailing Detector (ft)	0	0		0	0	0	0	200	0	0	200	0
Detector 1 Position(ft)	0	0		0	0	0	0	200	0	0	200	0
Detector 1 Size(ft)	50	50		50	50	20	50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases				8		8	2		2	2		6
Detector Phase	7	4		8	8	1	2	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0	12.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0	19.0	14.0	19.0	14.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	20.0	40.0		20.0	20.0	15.0	65.0	65.0	65.0	15.0	80.0	20.0
Total Split (%)	16.7%	33.3%		16.7%	16.7%	12.5%	54.2%	54.2%	54.2%	12.5%	66.7%	16.7%
Maximum Green (s)	13.0	33.0		13.0	13.0	8.0	58.0	58.0	58.0	8.0	73.0	13.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	None
Act Effct Green (s)	14.8	28.8			13.5	24.3	44.4	44.4	44.4	54.7	60.1	82.0
Actuated g/C Ratio	0.15	0.29			0.14	0.24	0.45	0.45	0.45	0.55	0.60	0.82
v/c Ratio	0.66	0.22			0.54	0.47	0.23	0.88	0.05	0.39	0.59	0.22
Control Delay	58.6	30.8			62.0	13.3	19.7	38.8	0.1	15.2	15.8	0.7
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.6	30.8			62.0	13.3	19.7	38.8	0.1	15.2	15.8	0.7
LOS	E	C			E	B	B	D	A	B	B	A
Approach Delay		48.3			26.3			35.3			11.3	
Approach LOS		D			C			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 99.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 25.6		Intersection LOS: C	
Intersection Capacity Utilization 59.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	4	6	105	4	221	4	313	16	41	476	16
Future Volume (vph)	9	4	6	105	4	221	4	313	16	41	476	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frt		0.955				0.850			0.850		0.997	
Flt Protected		0.977			0.953		0.950			0.950		
Satd. Flow (prot)	0	1738	0	0	1775	1583	1770	1827	1553	1597	1680	0
Flt Permitted		0.977			0.953		0.950			0.950		
Satd. Flow (perm)	0	1738	0	0	1775	1583	1770	1827	1553	1597	1680	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		618			672			1734			1092	
Travel Time (s)		16.9			45.8			26.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.54	0.90	0.54	0.90	0.54	0.54	0.54	0.54	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	4%	13%	13%	2%
Adj. Flow (vph)	10	4	7	194	4	409	4	580	30	76	881	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	198	409	4	580	30	76	899	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	94.4

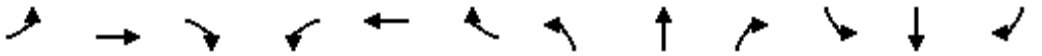
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	4	6	105	4	221	4	313	16	41	476	16
Future Vol, veh/h	9	4	6	105	4	221	4	313	16	41	476	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	54	90	54	90	54	54	54	54	90
Heavy Vehicles, %	2	2	2	2	2	2	2	4	4	13	13	2
Mvmt Flow	10	4	7	194	4	409	4	580	30	76	881	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1837	1630	890	1636	1639	580	899	0	-	580	0	0
Stage 1	1042	1042	-	588	588	-	-	-	-	-	-	-
Stage 2	795	588	-	1048	1051	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.23	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.317	-	-
Pot Cap-1 Maneuver	58	102	342	~ 81	100	514	756	-	0	942	-	-
Stage 1	277	307	-	495	496	-	-	-	0	-	-	-
Stage 2	381	496	-	275	304	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	11	93	342	~ 72	91	514	756	-	-	942	-	-
Mov Cap-2 Maneuver	11	93	-	~ 72	91	-	-	-	-	-	-	-
Stage 1	276	282	-	493	494	-	-	-	-	-	-	-
Stage 2	77	494	-	244	279	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 425.5	$ 323.8	0.1	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	756	-	22	72	514	942	-	-
HCM Lane V/C Ratio	0.006	-	0.96	2.762	0.796	0.081	-	-
HCM Control Delay (s)	9.8	-	$ 425.5	$ 919.9	34.1	9.2	-	-
HCM Lane LOS	A	-	F	F	D	A	-	-
HCM 95th %tile Q(veh)	0	-	2.8	19.7	7.5	0.3	-	-

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



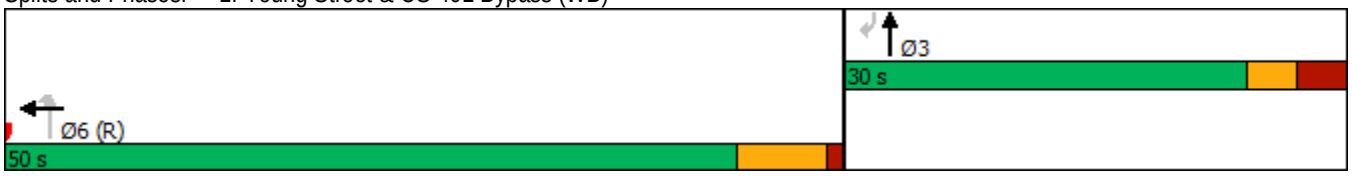
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	641	318	0	152	0	0	0	508
Future Volume (vph)	0	0	0	0	641	318	0	152	0	0	0	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						342						388
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			481			1248	
Travel Time (s)		10.5			4.3			6.0			24.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	0	0	0	0	689	342	0	163	0	0	0	546
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	689	342	0	163	0	0	0	546
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					1	0		1				1
Detector Template												
Leading Detector (ft)					426	0		40				40
Trailing Detector (ft)					420	0		0				0
Detector 1 Position(ft)					420	0		0				0
Detector 1 Size(ft)					6	20		40				40
Detector 1 Type					Cl+Ex	Cl+Ex		Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0	0.0		0.0				0.0
Detector 1 Queue (s)					0.0	0.0		0.0				0.0
Detector 1 Delay (s)					0.0	0.0		15.0				15.0
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					50.0	50.0		30.0				30.0
Total Split (%)					62.5%	62.5%		37.5%				37.5%
Maximum Green (s)					43.6	43.6		23.9				23.9
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					6.0	6.0		2.0				2.0
Minimum Gap (s)					3.4	3.4		2.0				2.0
Time Before Reduce (s)					15.0	15.0		0.0				0.0
Time To Reduce (s)					45.0	45.0		0.0				0.0
Recall Mode					C-Max	C-Max		None				None
Act Effct Green (s)					58.2	58.2		80.0				11.8
Actuated g/C Ratio					0.73	0.73		1.00				0.15
v/c Ratio					0.27	0.28		0.09				0.74
Control Delay					3.5	0.7		0.1				15.7
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					3.5	0.7		0.1				15.7
LOS					A	A		A				B
Approach Delay					2.6			0.1			15.7	
Approach LOS					A			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2: and 6:NBWB, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 6.5 Intersection LOS: A
Intersection Capacity Utilization 55.0% ICU Level of Service B
Analysis Period (min) 15
Description: 05-2236
! Phase conflict between lane groups.

Splits and Phases: 1: Young Street & US 401 Bypass (WB)



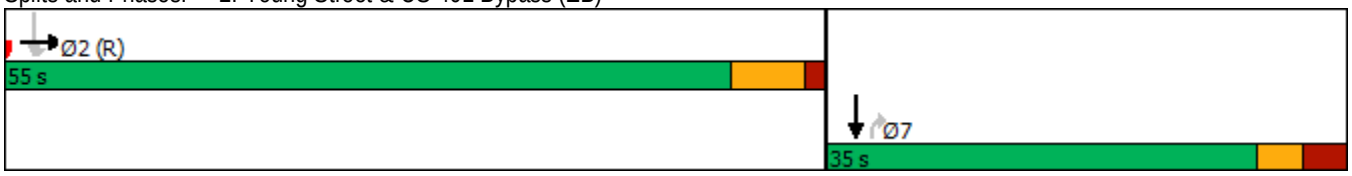
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	965	905	0	0	0	0	0	672	0	198	0
Future Volume (vph)	0	965	905	0	0	0	0	0	672	0	198	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		400	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected												
Satd. Flow (prot)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			832						161			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		454			839			450			381	
Travel Time (s)		5.6			10.4			6.8			4.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	0	1038	973	0	0	0	0	0	723	0	213	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1038	973	0	0	0	0	0	723	0	213	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	0						1		1	
Detector Template												
Leading Detector (ft)		426	0						40		40	
Trailing Detector (ft)		420	0						0		0	
Detector 1 Position(ft)		420	0						0		0	
Detector 1 Size(ft)		6	20						40		40	
Detector 1 Type		Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0						0.0		0.0	
Detector 1 Queue (s)		0.0	0.0						0.0		0.0	
Detector 1 Delay (s)		0.0	0.0						15.0		15.0	
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		55.0	55.0						35.0		35.0	
Total Split (%)		61.1%	61.1%						38.9%		38.9%	
Maximum Green (s)		48.6	48.6						28.9		28.9	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		6.0	6.0						2.0		2.0	
Minimum Gap (s)		3.4	3.4						2.0		2.0	
Time Before Reduce (s)		15.0	15.0						0.0		0.0	
Time To Reduce (s)		45.0	45.0						0.0		0.0	
Recall Mode		C-Max	C-Max						None		None	
Act Effct Green (s)		55.3	55.3						24.7		90.0	
Actuated g/C Ratio		0.61	0.61						0.27		1.00	
v/c Ratio		0.49	0.76						0.83		0.12	
Control Delay		9.0	5.2						32.3		0.1	
Queue Delay		0.0	0.4						0.0		0.0	
Total Delay		9.0	5.6						32.3		0.1	
LOS		A	A						C		A	
Approach Delay		7.4						32.3			0.1	
Approach LOS		A						C			A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 89 (99%), Referenced to phase 2:EBSB and 6:, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 13.0 Intersection LOS: B
Intersection Capacity Utilization 74.8% ICU Level of Service D
Analysis Period (min) 15
Description: 05-2390
! Phase conflict between lane groups.

Splits and Phases: 2: Young Street & US 401 Bypass (EB)

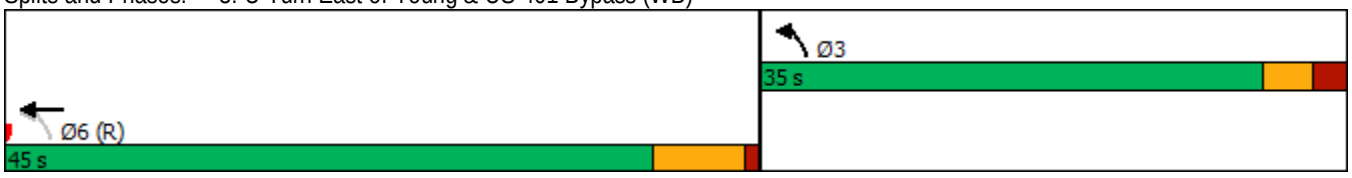


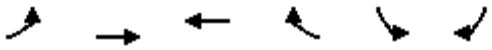
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	621	536	0
Future Volume (vph)	0	0	0	621	536	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3575	1752	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3575	1752	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	634	547	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	634	547	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	1.01	1.01
Turning Speed (mph)		9	15		15	9
Number of Detectors				1	1	
Detector Template						
Leading Detector (ft)				426	40	
Trailing Detector (ft)				420	0	
Detector 1 Position(ft)				420	0	
Detector 1 Size(ft)				6	40	
Detector 1 Type				Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)				0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	
Detector 1 Delay (s)				0.0	15.0	
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				45.0	35.0	
Total Split (%)				56.3%	43.8%	
Maximum Green (s)				38.6	29.9	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)				6.0	2.0	
Minimum Gap (s)				3.4	2.0	
Time Before Reduce (s)				15.0	0.0	
Time To Reduce (s)				45.0	0.0	
Recall Mode				C-Max	None	
Act Effct Green (s)				62.6	80.0	
Actuated g/C Ratio				0.78	1.00	
v/c Ratio				0.23	0.31	
Control Delay				2.5	0.5	
Queue Delay				0.0	0.0	
Total Delay				2.5	0.5	
LOS				A	A	
Approach Delay				2.5	0.5	
Approach LOS				A	A	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2: and 6:NBWB, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay: 1.6	Intersection LOS: A
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	
Description: 05-2391	
! Phase conflict between lane groups.	

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)





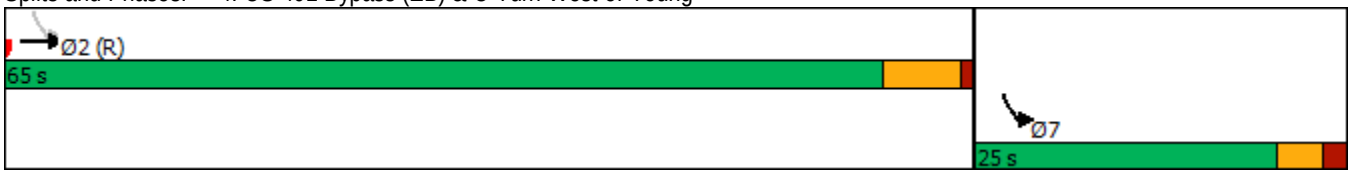
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1581	0	0	441	0
Future Volume (vph)	0	1581	0	0	441	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-1%		-1%	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3487	0	0	1761	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3487	0	0	1761	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	370		58	
Travel Time (s)		13.5	4.6		1.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	0	1682	0	0	469	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1682	0	0	469	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	0.99	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors		1			1	
Detector Template						
Leading Detector (ft)		426			40	
Trailing Detector (ft)		420			0	
Detector 1 Position(ft)		420			0	
Detector 1 Size(ft)		6			40	
Detector 1 Type		Cl+Ex			Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0			0.0	
Detector 1 Queue (s)		0.0			0.0	
Detector 1 Delay (s)		0.0			15.0	
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		65.0			25.0	
Total Split (%)		72.2%			27.8%	

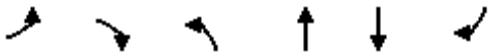
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Maximum Green (s)		58.8			20.2	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0			2.0	
Minimum Gap (s)		3.4			2.0	
Time Before Reduce (s)		15.0			0.0	
Time To Reduce (s)		45.0			0.0	
Recall Mode		C-Max			None	
Act Effct Green (s)		73.1			90.0	
Actuated g/C Ratio		0.81			1.00	
v/c Ratio		0.59			0.27	
Control Delay		4.1			0.4	
Queue Delay		0.0			0.0	
Total Delay		4.1			0.4	
LOS		A			A	
Approach Delay		4.1			0.4	
Approach LOS		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBSB and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 3.3		Intersection LOS: A	
Intersection Capacity Utilization 75.6%		ICU Level of Service D	
Analysis Period (min) 15			
Description: 05-2425			

! Phase conflict between lane groups.

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	49	71	400	459	39
Future Volume (vph)	25	49	71	400	459	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.910				0.989	
Flt Protected	0.984		0.950			
Satd. Flow (prot)	1590	0	1770	1863	1807	0
Flt Permitted	0.984		0.950			
Satd. Flow (perm)	1590	0	1770	1863	1807	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	7%	7%	2%	2%	4%	4%
Adj. Flow (vph)	27	54	78	440	504	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	0	78	440	547	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			

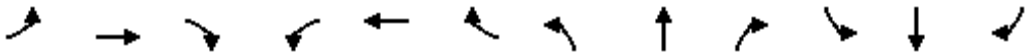
Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	49	71	400	459	39
Future Vol, veh/h	25	49	71	400	459	39
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	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	2	2	4	4
Mvmt Flow	27	54	78	440	504	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1122	526	547	0	-	0
Stage 1	526	-	-	-	-	-
Stage 2	596	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	223	542	1022	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	206	542	1022	-	-	-
Mov Cap-2 Maneuver	206	-	-	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.4	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1022	-	349	-	-
HCM Lane V/C Ratio	0.076	-	0.233	-	-
HCM Control Delay (s)	8.8	-	18.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	42	27	52	34	4	18	4	34	4	4	4
Future Volume (vph)	4	42	27	52	34	4	18	4	34	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.949			0.994			0.918			0.955	
Flt Protected		0.998			0.972			0.984			0.984	
Satd. Flow (prot)	0	1666	0	0	1782	0	0	1407	0	0	1750	0
Flt Permitted		0.998			0.972			0.984			0.984	
Satd. Flow (perm)	0	1666	0	0	1782	0	0	1407	0	0	1750	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	22%	22%	22%	2%	2%	2%
Adj. Flow (vph)	4	46	30	57	37	4	20	4	37	4	4	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	98	0	0	61	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.5%		ICU Level of Service A	
Analysis Period (min) 15			

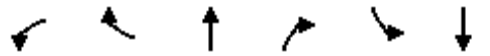
Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	42	27	52	34	4	18	4	34	4	4	4
Future Vol, veh/h	4	42	27	52	34	4	18	4	34	4	4	4
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	8	8	8	3	3	3	22	22	22	2	2	2
Mvmt Flow	4	46	30	57	37	4	20	4	37	4	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	78	0	0	228	226	63	243	239	39
Stage 1	-	-	-	-	-	-	71	71	-	153	153	-
Stage 2	-	-	-	-	-	-	157	155	-	90	86	-
Critical Hdwy	4.18	-	-	4.13	-	-	7.32	6.72	6.42	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Follow-up Hdwy	2.272	-	-	2.227	-	-	3.698	4.198	3.498	3.518	4.018	3.318
Pot Cap-1 Maneuver	1530	-	-	1514	-	-	687	640	948	711	662	1033
Stage 1	-	-	-	-	-	-	891	798	-	849	771	-
Stage 2	-	-	-	-	-	-	800	733	-	917	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1530	-	-	1511	-	-	657	612	946	658	633	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	657	612	-	658	633	-
Stage 1	-	-	-	-	-	-	887	794	-	846	741	-
Stage 2	-	-	-	-	-	-	761	704	-	873	820	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	4.3	9.9	10
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	801	1530	-	-	1511	-	-	738
HCM Lane V/C Ratio	0.077	0.003	-	-	0.038	-	-	0.018
HCM Control Delay (s)	9.9	7.4	0	-	7.5	0	-	10
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	4	674	4	8	1096
Future Volume (vph)	4	4	674	4	8	1096
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1719	1810
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	5%	5%
Adj. Flow (vph)	4	4	749	4	9	1218
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	753	0	9	1218
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	674	4	8	1096
Future Vol, veh/h	4	4	674	4	8	1096
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	4	4	749	4	9	1218

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1987	751	0	0	753	0
Stage 1	751	-	-	-	-	-
Stage 2	1236	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	67	411	-	-	844	-
Stage 1	466	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	66	411	-	-	844	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	274	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.2	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	114	844	-
HCM Lane V/C Ratio	-	-	0.078	0.011	-
HCM Control Delay (s)	-	-	39.2	9.3	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

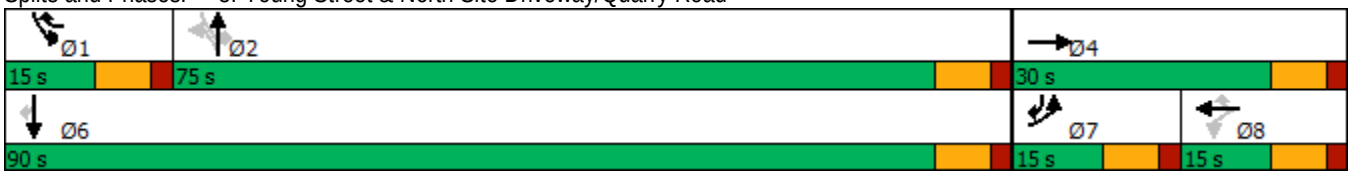
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	4	116	43	4	88	54	429	27	135	627	342
Future Volume (vph)	154	4	116	43	4	88	54	429	27	135	627	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	0		250	100		100	525		100
Storage Lanes	1		0	0		1	1		1	1		1
Taper Length (ft)	100			25			100			100		
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
Frt		0.855				0.850			0.850			0.850
Flt Protected	0.950				0.956		0.950			0.950		
Satd. Flow (prot)	1770	1593	0	0	1734	1538	1770	1827	1553	1719	1810	1583
Flt Permitted	0.950				0.650		0.406			0.260		
Satd. Flow (perm)	1770	1593	0	0	1179	1538	756	1827	1553	470	1810	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						100			164			380
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		703			1124			1108			981	
Travel Time (s)		19.2			17.0			16.8			14.9	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.92	0.92	0.92	0.92	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	5%	2%	4%	4%	5%	5%	2%
Adj. Flow (vph)	171	4	129	47	4	96	60	466	29	147	682	380
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	133	0	0	51	96	60	466	29	147	682	380
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	0	1	1	0
Detector Template						Right						
Leading Detector (ft)	50	50		50	50	20	50	206	0	50	206	0
Trailing Detector (ft)	0	0		0	0	0	0	200	0	0	200	0
Detector 1 Position(ft)	0	0		0	0	0	0	200	0	0	200	0
Detector 1 Size(ft)	50	50		50	50	20	50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases				8		8	2		2	2		6
Detector Phase	7	4		8	8	1	2	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0	12.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0	19.0	14.0	19.0	14.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	15.0	30.0		15.0	15.0	15.0	75.0	75.0	75.0	15.0	90.0	15.0
Total Split (%)	12.5%	25.0%		12.5%	12.5%	12.5%	62.5%	62.5%	62.5%	12.5%	75.0%	12.5%
Maximum Green (s)	8.0	23.0		8.0	8.0	8.0	68.0	68.0	68.0	8.0	83.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	7.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	None
Act Effct Green (s)	10.7	18.5			10.0	18.0	23.8	23.8	21.7	33.9	39.2	57.7
Actuated g/C Ratio	0.16	0.27			0.15	0.26	0.35	0.35	0.32	0.50	0.58	0.85
v/c Ratio	0.62	0.31			0.30	0.20	0.23	0.73	0.05	0.35	0.66	0.27
Control Delay	43.6	22.9			36.4	5.9	19.5	27.7	0.1	10.6	14.7	0.8
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	22.9			36.4	5.9	19.5	27.7	0.1	10.6	14.7	0.8
LOS	D	C			D	A	B	C	A	B	B	A
Approach Delay		34.5			16.5			25.4			9.8	
Approach LOS		C			B			C			A	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 68.1
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 70.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	4	7	20	4	81	4	454	13	80	612	20
Future Volume (vph)	11	4	7	20	4	81	4	454	13	80	612	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frt		0.955				0.850			0.850		0.995	
Flt Protected		0.976			0.960		0.950			0.950		
Satd. Flow (prot)	0	1736	0	0	1788	1583	1770	1863	1583	1770	1853	0
Flt Permitted		0.976			0.960		0.950			0.950		
Satd. Flow (perm)	0	1736	0	0	1788	1583	1770	1863	1583	1770	1853	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		435			672			1734			1092	
Travel Time (s)		11.9			45.8			26.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.94	0.90	0.94	0.90	0.94	0.94	0.94	0.94	0.90
Adj. Flow (vph)	12	4	8	21	4	86	4	483	14	85	651	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	25	86	4	483	14	85	673	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	4	7	20	4	81	4	454	13	80	612	20
Future Vol, veh/h	11	4	7	20	4	81	4	454	13	80	612	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	94	90	94	90	94	94	94	94	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	4	8	21	4	86	4	483	14	85	651	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1368	1323	662	1329	1334	483	673	0	-	483	0	0
Stage 1	832	832	-	491	491	-	-	-	-	-	-	-
Stage 2	536	491	-	838	843	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	124	156	462	132	154	584	918	-	0	1080	-	-
Stage 1	363	384	-	559	548	-	-	-	0	-	-	-
Stage 2	529	548	-	361	380	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	97	143	462	119	141	584	918	-	-	1080	-	-
Mov Cap-2 Maneuver	97	143	-	119	141	-	-	-	-	-	-	-
Stage 1	362	354	-	557	546	-	-	-	-	-	-	-
Stage 2	445	546	-	323	350	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35.8	19.1	0.1	1
HCM LOS	E	C		

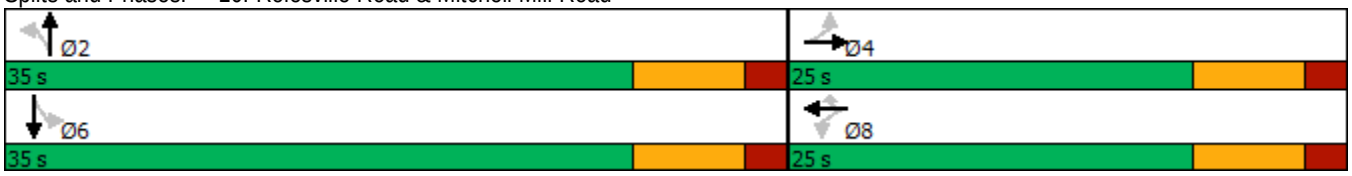
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	918	-	141	122	584	1080	-	-
HCM Lane V/C Ratio	0.005	-	0.173	0.211	0.148	0.079	-	-
HCM Control Delay (s)	8.9	-	35.8	42.2	12.2	8.6	-	-
HCM Lane LOS	A	-	E	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.6	0.8	0.5	0.3	-	-

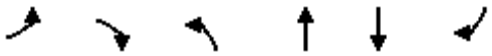
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	116	8	15	44	17	8	339	46	15	313	143
Future Volume (vph)	53	116	8	15	44	17	8	339	46	15	313	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	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
Frt		0.994				0.850		0.984			0.959	
Flt Protected		0.985			0.987			0.999			0.998	
Satd. Flow (prot)	0	1806	0	0	1839	1583	0	1796	0	0	1749	0
Flt Permitted		0.875			0.890			0.987			0.980	
Satd. Flow (perm)	0	1604	0	0	1658	1583	0	1774	0	0	1717	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	59	129	9	17	49	19	9	377	51	17	348	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	197	0	0	66	19	0	437	0	0	524	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	50		20	50	0	20	76		20	76	
Trailing Detector (ft)	0	0		0	0	0	0	70		0	70	
Detector 1 Position(ft)	0	0		0	0	0	0	70		0	70	
Detector 1 Size(ft)	20	50		20	50	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	28.0	28.0		28.0	28.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		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	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		13.0			13.0	13.0		25.0			25.0	
Actuated g/C Ratio		0.30			0.30	0.30		0.57			0.57	
v/c Ratio		0.41			0.13	0.04		0.43			0.53	
Control Delay		16.4			13.3	12.9		9.8			11.3	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		16.4			13.3	12.9		9.8			11.3	
LOS		B			B	B		A			B	
Approach Delay		16.4			13.2			9.8			11.3	
Approach LOS		B			B			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 43.5			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 11.7		Intersection LOS: B	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Rolesville Road & Mitchell Mill Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	61	82	49	450	689	102
Future Volume (vph)	61	82	49	450	689	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	100			100
Storage Lanes	1	1	1			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Link Speed (mph)	25			45	45	
Link Distance (ft)	532			1092	1108	
Travel Time (s)	14.5			16.5	16.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	68	91	54	500	766	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	91	54	500	766	113
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	61	82	49	450	689	102
Future Vol, veh/h	61	82	49	450	689	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	91	54	500	766	113

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1374	766	879	0	-	0
Stage 1	766	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	160	403	769	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	149	403	769	-	-	-
Mov Cap-2 Maneuver	149	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	543	-	-	-	-	-

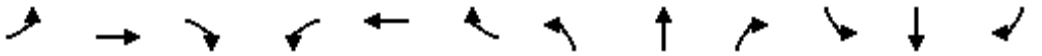
Approach	EB	NB	SB
HCM Control Delay, s	29.9	1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	769	-	149	403	-	-
HCM Lane V/C Ratio	0.071	-	0.455	0.226	-	-
HCM Control Delay (s)	10	-	47.9	16.5	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.1	0.9	-	-

Appendix K:

Synchro Output:

Residential Build-out (2025)

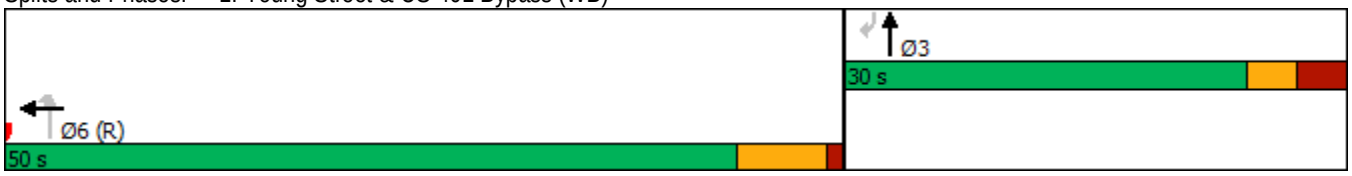


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1439	383	0	59	0	0	0	563
Future Volume (vph)	0	0	0	0	1439	383	0	59	0	0	0	563
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						426						46
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			412			1248	
Travel Time (s)		10.5			4.3			5.1			24.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	4%	4%	4%	2%	2%	2%
Adj. Flow (vph)	0	0	0	0	1599	426	0	66	0	0	0	626
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1599	426	0	66	0	0	0	626
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					1	0		1				1
Detector Template												
Leading Detector (ft)					426	0		40				40
Trailing Detector (ft)					420	0		0				0
Detector 1 Position(ft)					420	0		0				0
Detector 1 Size(ft)					6	20		40				40
Detector 1 Type					Cl+Ex	Cl+Ex		Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0	0.0		0.0				0.0
Detector 1 Queue (s)					0.0	0.0		0.0				0.0
Detector 1 Delay (s)					0.0	0.0		15.0				15.0
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					50.0	50.0		30.0				30.0
Total Split (%)					62.5%	62.5%		37.5%				37.5%
Maximum Green (s)					43.6	43.6		23.9				23.9
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					6.0	6.0		2.0				2.0
Minimum Gap (s)					3.4	3.4		2.0				2.0
Time Before Reduce (s)					15.0	15.0		0.0				0.0
Time To Reduce (s)					45.0	45.0		0.0				0.0
Recall Mode					C-Max	C-Max		None				None
Act Effct Green (s)					48.6	48.6		80.0				21.4
Actuated g/C Ratio					0.61	0.61		1.00				0.27
v/c Ratio					0.75	0.38		0.04				0.79
Control Delay					11.2	1.6		0.0				32.9
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					11.2	1.6		0.0				32.9
LOS					B	A		A				C
Approach Delay					9.2						32.9	
Approach LOS					A						C	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 51 (64%), Referenced to phase 6:NBWB, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	
Description: 05-2236	
! Phase conflict between lane groups.	

Splits and Phases: 1: Young Street & US 401 Bypass (WB)

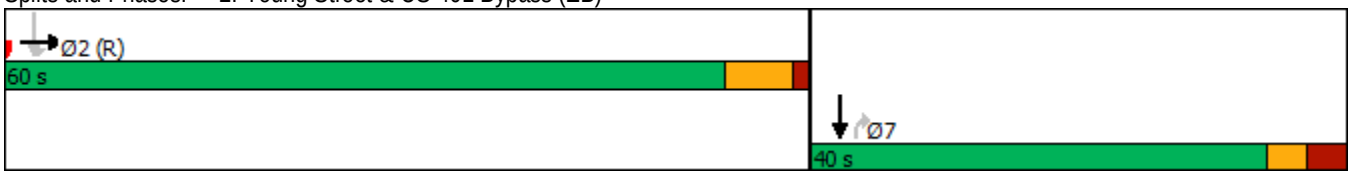


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	280	768	0	0	0	0	0	914	0	194	0
Future Volume (vph)	0	280	768	0	0	0	0	0	914	0	194	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		225	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Ped Bike Factor									0.98			
Frt			0.850						0.850			
Flt Protected												
Satd. Flow (prot)	0	3436	1537	0	0	0	0	0	2641	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3436	1537	0	0	0	0	0	2586	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			829						928			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		381			839			450			381	
Travel Time (s)		4.7			10.4			6.8			4.7	
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	6%	6%	6%	3%	3%	3%
Adj. Flow (vph)	0	311	853	0	0	0	0	0	1016	0	216	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	311	853	0	0	0	0	0	1016	0	216	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	0						1		1	
Detector Template												
Leading Detector (ft)		426	0						40		40	
Trailing Detector (ft)		420	0						0		0	
Detector 1 Position(ft)		420	0						0		0	
Detector 1 Size(ft)		6	20						40		40	
Detector 1 Type		Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0						0.0		0.0	
Detector 1 Queue (s)		0.0	0.0						0.0		0.0	
Detector 1 Delay (s)		0.0	0.0						15.0		15.0	
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		60.0	60.0						40.0		40.0	
Total Split (%)		60.0%	60.0%						40.0%		40.0%	
Maximum Green (s)		53.6	53.6						33.9		33.9	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		6.0	6.0						2.0		2.0	
Minimum Gap (s)		3.4	3.4						2.0		2.0	
Time Before Reduce (s)		15.0	15.0						0.0		0.0	
Time To Reduce (s)		45.0	45.0						0.0		0.0	
Recall Mode		C-Max	C-Max						None		None	
Act Effct Green (s)		75.2	75.2						14.8		100.0	
Actuated g/C Ratio		0.75	0.75						0.15		1.00	
v/c Ratio		0.12	0.63						0.87		0.12	
Control Delay		3.9	3.1						12.9		0.1	
Queue Delay		0.0	0.0						0.0		0.0	
Total Delay		3.9	3.1						12.9		0.1	
LOS		A	A						B		A	
Approach Delay		3.3						12.9			0.1	
Approach LOS		A						B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 95 (95%), Referenced to phase 2:EBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 7.1		Intersection LOS: A	
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-2390			
! Phase conflict between lane groups.			

Splits and Phases: 2: Young Street & US 401 Bypass (EB)



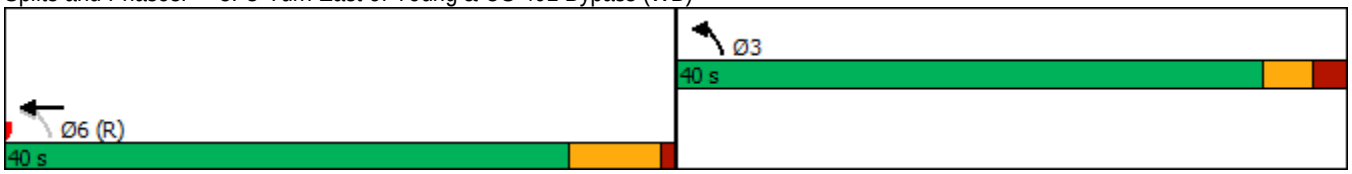
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1331	685	0
Future Volume (vph)	0	0	0	1331	685	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3540	1702	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3540	1702	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	3%	5%	5%
Adj. Flow (vph)	0	0	0	1447	745	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1447	745	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	1.01	1.01
Turning Speed (mph)		9	15		15	9
Number of Detectors				1	1	
Detector Template						
Leading Detector (ft)				426	40	
Trailing Detector (ft)				420	0	
Detector 1 Position(ft)				420	0	
Detector 1 Size(ft)				6	40	
Detector 1 Type				Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)				0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	
Detector 1 Delay (s)				0.0	15.0	
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				40.0	40.0	
Total Split (%)				50.0%	50.0%	

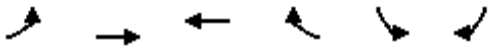
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Maximum Green (s)				33.6	34.9	
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)				6.0	2.0	
Minimum Gap (s)				3.4	2.0	
Time Before Reduce (s)				15.0	0.0	
Time To Reduce (s)				45.0	0.0	
Recall Mode				C-Max	None	
Act Effct Green (s)				59.8	80.0	
Actuated g/C Ratio				0.75	1.00	
v/c Ratio				0.55	0.44	
Control Delay				5.9	0.8	
Queue Delay				0.0	0.0	
Total Delay				5.9	0.8	
LOS				A	A	
Approach Delay				5.9	0.8	
Approach LOS				A	A	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 53 (66%), Referenced to phase 6:NBWB, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 4.2	Intersection LOS: A
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	
Description: 05-2391	

! Phase conflict between lane groups.

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)





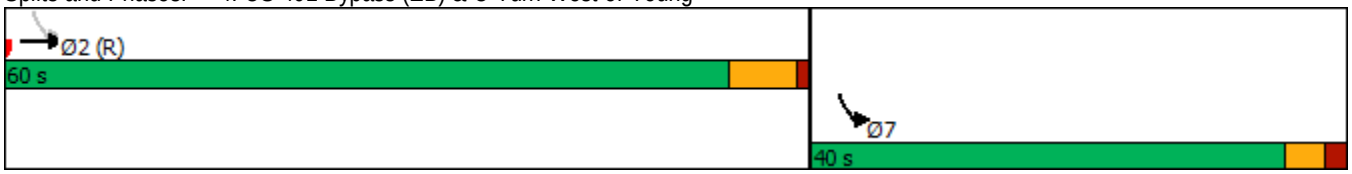
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	727	0	0	379	0
Future Volume (vph)	0	727	0	0	379	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-1%		-1%	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3421	0	0	1778	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3421	0	0	1778	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	443		58	
Travel Time (s)		13.5	5.5		1.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Adj. Flow (vph)	0	808	0	0	421	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	808	0	0	421	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	0.99	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors		1			1	
Detector Template						
Leading Detector (ft)		426			40	
Trailing Detector (ft)		420			0	
Detector 1 Position(ft)		420			0	
Detector 1 Size(ft)		6			40	
Detector 1 Type		Cl+Ex			Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0			0.0	
Detector 1 Queue (s)		0.0			0.0	
Detector 1 Delay (s)		0.0			15.0	
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		60.0			40.0	
Total Split (%)		60.0%			40.0%	

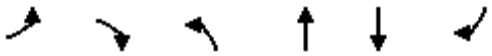
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Maximum Green (s)		53.8			35.2	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0			2.0	
Minimum Gap (s)		3.4			2.0	
Time Before Reduce (s)		15.0			0.0	
Time To Reduce (s)		45.0			0.0	
Recall Mode		C-Max			None	
Act Effct Green (s)		83.2			100.0	
Actuated g/C Ratio		0.83			1.00	
v/c Ratio		0.28			0.24	
Control Delay		2.1			0.3	
Queue Delay		0.0			0.0	
Total Delay		2.1			0.3	
LOS		A			A	
Approach Delay		2.1			0.3	
Approach LOS		A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBSB, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.28	
Intersection Signal Delay: 1.5	Intersection LOS: A
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	
Description: 05-2425	

! Phase conflict between lane groups.

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	36	90	35	444	492	7
Future Volume (vph)	36	90	35	444	492	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904				0.998	
Flt Protected	0.986		0.950			
Satd. Flow (prot)	1644	0	1736	1827	1859	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1644	0	1736	1827	1859	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	4%	4%	2%	2%
Adj. Flow (vph)	40	100	39	493	547	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	140	0	39	493	555	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			

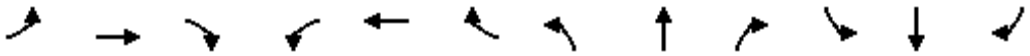
Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	36	90	35	444	492	7
Future Vol, veh/h	36	90	35	444	492	7
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	40	100	39	493	547	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1123	552	556	0	-	0
Stage 1	552	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	226	531	1005	-	-	-
Stage 1	575	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	217	530	1004	-	-	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	562	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.2	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1004	-	375	-	-
HCM Lane V/C Ratio	0.039	-	0.373	-	-
HCM Control Delay (s)	8.7	-	20.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.7	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	41	6	15	28	4	21	4	41	4	4	5
Future Volume (vph)	4	41	6	15	28	4	21	4	41	4	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.983			0.990			0.915			0.942	
Flt Protected		0.997			0.984			0.984			0.986	
Satd. Flow (prot)	0	1808	0	0	1780	0	0	1677	0	0	1730	0
Flt Permitted		0.997			0.984			0.984			0.986	
Satd. Flow (perm)	0	1808	0	0	1780	0	0	1677	0	0	1730	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)	1		1	1		1						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	4	46	7	17	31	4	23	4	46	4	4	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	52	0	0	73	0	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	41	6	15	28	4	21	4	41	4	4	5
Future Vol, veh/h	4	41	6	15	28	4	21	4	41	4	4	5
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	4	4	4	2	2	2	2	2	2
Mvmt Flow	4	46	7	17	31	4	23	4	46	4	4	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	54	0	0	131	129	51	151	130	34
Stage 1	-	-	-	-	-	-	59	59	-	68	68	-
Stage 2	-	-	-	-	-	-	72	70	-	83	62	-
Critical Hdwy	4.13	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1539	-	-	841	762	1017	816	761	1039
Stage 1	-	-	-	-	-	-	953	846	-	942	838	-
Stage 2	-	-	-	-	-	-	938	837	-	925	843	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1538	-	-	823	750	1016	767	749	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	823	750	-	767	749	-
Stage 1	-	-	-	-	-	-	949	843	-	938	828	-
Stage 2	-	-	-	-	-	-	918	827	-	876	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.4	9.2	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	927	1567	-	-	1538	-	-	846
HCM Lane V/C Ratio	0.079	0.003	-	-	0.011	-	-	0.017
HCM Control Delay (s)	9.2	7.3	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	6	904	4	4	954
Future Volume (vph)	4	6	904	4	4	954
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.914		0.999			
Flt Protected	0.982				0.950	
Satd. Flow (prot)	1672	0	1791	0	1719	1810
Flt Permitted	0.982				0.950	
Satd. Flow (perm)	1672	0	1791	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	6%	6%	5%	5%
Adj. Flow (vph)	4	7	1004	4	4	1060
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	1008	0	4	1060
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	904	4	4	954
Future Vol, veh/h	4	6	904	4	4	954
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	5	5
Mvmt Flow	4	7	1004	4	4	1060

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2074	1006	0	0	1008	0
Stage 1	1006	-	-	-	-	-
Stage 2	1068	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	59	293	-	-	676	-
Stage 1	353	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	59	293	-	-	676	-
Mov Cap-2 Maneuver	59	-	-	-	-	-
Stage 1	351	-	-	-	-	-
Stage 2	330	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.3	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	113	676	-
HCM Lane V/C Ratio	-	-	0.098	0.007	-
HCM Control Delay (s)	-	-	40.3	10.4	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

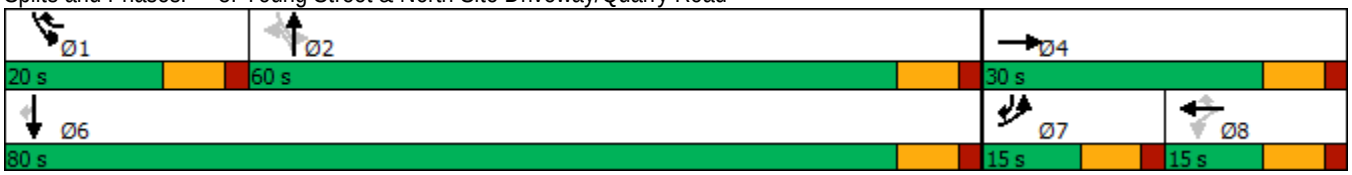
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	4	79	34	4	157	5	611	69	213	668	77
Future Volume (vph)	139	4	79	34	4	157	5	611	69	213	668	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	0		250	100		0	525		100
Storage Lanes	1		0	0		1	1		0	1		1
Taper Length (ft)	100			25			100			100		
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				
Frt		0.857				0.850		0.985				0.850
Flt Protected	0.950				0.956		0.950			0.950		
Satd. Flow (prot)	1770	1596	0	0	1520	1335	1770	1796	0	1719	1810	1583
Flt Permitted	0.950				0.678		0.280			0.072		
Satd. Flow (perm)	1770	1596	0	0	1078	1335	522	1796	0	130	1810	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						122		7				86
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		742			1124			1108			981	
Travel Time (s)		20.2			17.0			16.8			14.9	
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.74	0.90	0.74	0.90	0.74	0.74	0.74	0.74	0.90
Heavy Vehicles (%)	2%	2%	2%	21%	2%	21%	2%	4%	4%	5%	5%	2%
Adj. Flow (vph)	154	4	88	46	4	212	6	826	93	288	903	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	92	0	0	50	212	6	919	0	288	903	86
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	0
Detector Template						Right						
Leading Detector (ft)	50	50		50	50	20	50	206		50	206	0
Trailing Detector (ft)	0	0		0	0	0	0	200		0	200	0
Detector 1 Position(ft)	0	0		0	0	0	0	200		0	200	0
Detector 1 Size(ft)	50	50		50	50	20	50	6		50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA		D.P+P	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases				8		8	2			2		6
Detector Phase	7	4		8	8	1	2	2		1	6	7
Switch Phase												

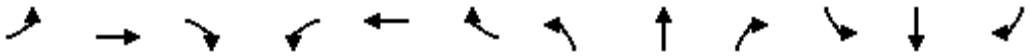
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0		14.0	19.0	14.0
Total Split (s)	15.0	30.0		15.0	15.0	20.0	60.0	60.0		20.0	80.0	15.0
Total Split (%)	13.6%	27.3%		13.6%	13.6%	18.2%	54.5%	54.5%		18.2%	72.7%	13.6%
Maximum Green (s)	8.0	23.0		8.0	8.0	13.0	53.0	53.0		13.0	73.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag		Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min		None	Min	None
Act Effct Green (s)	10.0	21.7			9.8	26.7	55.2	55.2		70.2	75.3	91.4
Actuated g/C Ratio	0.09	0.20			0.09	0.25	0.52	0.52		0.66	0.70	0.85
v/c Ratio	0.93	0.28			0.51	0.50	0.02	0.99		0.94	0.71	0.06
Control Delay	104.5	37.9			66.2	18.8	14.4	54.4		68.7	14.3	0.5
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	104.5	37.9			66.2	18.8	14.4	54.4		68.7	14.3	0.5
LOS	F	D			E	B	B	D		E	B	A
Approach Delay		79.6			27.9			54.2			25.6	
Approach LOS		E			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 107
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 40.5 Intersection LOS: D
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	4	8	91	4	195	4	438	213	299	487	5
Future Volume (vph)	12	4	8	91	4	195	4	438	213	299	487	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frt		0.953				0.850			0.850		0.999	
Flt Protected		0.976			0.954		0.950			0.950		
Satd. Flow (prot)	0	1733	0	0	1777	1583	1770	1845	1568	1770	1861	0
Flt Permitted		0.976			0.954		0.950			0.950		
Satd. Flow (perm)	0	1733	0	0	1777	1583	1770	1845	1568	1770	1861	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		682			672			1734			1092	
Travel Time (s)		18.6			45.8			26.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.68	0.90	0.68	0.90	0.68	0.68	0.68	0.68	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	3%	2%	2%	2%
Adj. Flow (vph)	13	4	9	134	4	287	4	644	313	440	716	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	138	287	4	644	313	440	722	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	281.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	4	8	91	4	195	4	438	213	299	487	5
Future Vol, veh/h	12	4	8	91	4	195	4	438	213	299	487	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	68	90	68	90	68	68	68	68	90
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	2	2
Mvmt Flow	13	4	9	134	4	287	4	644	313	440	716	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2397	2251	719	2258	2254	644	722	0	-	644	0	0
Stage 1	1599	1599	-	652	652	-	-	-	-	-	-	-
Stage 2	798	652	-	1606	1602	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	23	42	428	~ 29	41	473	880	-	0	941	-	-
Stage 1	133	166	-	457	464	-	-	-	0	-	-	-
Stage 2	380	464	-	~ 132	165	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	~ 5	22	428	~ 15	22	473	880	-	-	941	-	-
Mov Cap-2 Maneuver	~ 5	22	-	~ 15	22	-	-	-	-	-	-	-
Stage 1	132	88	-	455	462	-	-	-	-	-	-	-
Stage 2	148	462	-	~ 65	88	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 1700.1	$ 1380.6	0.1	4.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	880	-	9	15	473	941	-	-
HCM Lane V/C Ratio	0.005	-	2.963	9.218	0.606	0.467	-	-
HCM Control Delay (s)	9.1	$	1700.1	$ 4195.1	23.6	12.1	-	-
HCM Lane LOS	A	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0	-	4.5	18.2	3.9	2.5	-	-

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

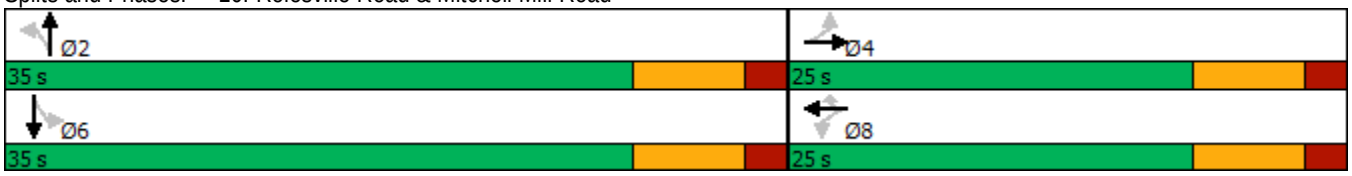
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	17	4	52	184	16	9	295	8	16	359	215
Future Volume (vph)	124	17	4	52	184	16	9	295	8	16	359	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	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
Frt		0.997				0.850		0.996			0.951	
Flt Protected		0.959			0.989			0.999			0.999	
Satd. Flow (prot)	0	1781	0	0	1842	1583	0	1800	0	0	1703	0
Flt Permitted		0.558			0.888			0.977			0.985	
Satd. Flow (perm)	0	1036	0	0	1654	1583	0	1761	0	0	1679	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	6%	6%	6%
Adj. Flow (vph)	138	19	4	58	204	18	10	328	9	18	399	239
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	262	18	0	347	0	0	656	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	50		20	50	0	20	76		20	76	
Trailing Detector (ft)	0	0		0	0	0	0	70		0	70	
Detector 1 Position(ft)	0	0		0	0	0	0	70		0	70	
Detector 1 Size(ft)	20	50		20	50	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0		25.0	25.0	

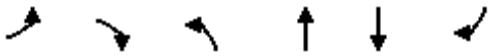
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	28.0	28.0		28.0	28.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		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	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		15.3			15.3	15.3		24.3			24.3	
Actuated g/C Ratio		0.31			0.31	0.31		0.49			0.49	
v/c Ratio		0.51			0.52	0.04		0.41			0.80	
Control Delay		22.2			19.6	13.8		10.4			21.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		22.2			19.6	13.8		10.4			21.0	
LOS		C			B	B		B			C	
Approach Delay		22.2			19.2			10.4			21.0	
Approach LOS		C			B			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 50.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 18.2 Intersection LOS: B
Intersection Capacity Utilization 72.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Rolesville Road & Mitchell Mill Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	67	91	13	619	755	27
Future Volume (vph)	67	91	13	619	755	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	100			100
Storage Lanes	1	1	1			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Link Speed (mph)	25			45	45	
Link Distance (ft)	696			1092	1108	
Travel Time (s)	19.0			16.5	16.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	74	101	14	688	839	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	101	14	688	839	30
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			

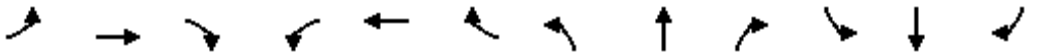
Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	67	91	13	619	755	27
Future Vol, veh/h	67	91	13	619	755	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	101	14	688	839	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1555	839	869	0	-	0
Stage 1	839	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	124	366	775	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	122	366	775	-	-	-
Mov Cap-2 Maneuver	122	-	-	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	484	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	41.4	0.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	775	-	122	366	-	-
HCM Lane V/C Ratio	0.019	-	0.61	0.276	-	-
HCM Control Delay (s)	9.7	-	72.5	18.5	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	3.1	1.1	-	-



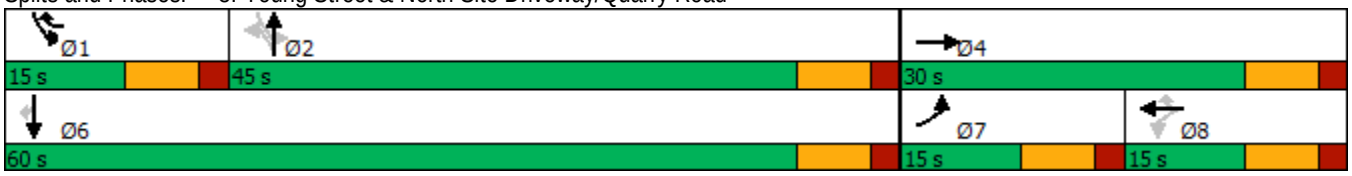
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	4	38	47	4	137	13	522	24	66	429	194
Future Volume (vph)	66	4	38	47	4	137	13	522	24	66	429	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	0		250	100		0	525		100
Storage Lanes	1		0	0		1	1		0	1		1
Taper Length (ft)	100			25			100			100		
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
Frt		0.863				0.850		0.993				0.850
Flt Protected	0.950				0.955		0.950			0.950		
Satd. Flow (prot)	1770	1608	0	0	1466	1292	1770	1850	0	1671	1759	1583
Flt Permitted	0.950				0.704		0.422			0.101		
Satd. Flow (perm)	1770	1608	0	0	1081	1292	786	1850	0	178	1759	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						170		3				174
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		602			1124			1108			981	
Travel Time (s)		16.4			17.0			16.8			14.9	
Peak Hour Factor	0.90	0.90	0.90	0.67	0.90	0.67	0.90	0.67	0.67	0.67	0.67	0.90
Heavy Vehicles (%)	2%	2%	2%	25%	2%	25%	2%	2%	2%	8%	8%	2%
Adj. Flow (vph)	73	4	42	70	4	204	14	779	36	99	640	216
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	46	0	0	74	204	14	815	0	99	640	216
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	0
Detector Template						Right						
Leading Detector (ft)	50	50		50	50	20	50	206		50	206	0
Trailing Detector (ft)	0	0		0	0	0	0	200		0	200	0
Detector 1 Position(ft)	0	0		0	0	0	0	200		0	200	0
Detector 1 Size(ft)	50	50		50	50	20	50	6		50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA		D.P+P	NA	Perm
Protected Phases	7	4			8	1		2		1	6	
Permitted Phases				8		8	2			2		6
Detector Phase	7	4		8	8	1	2	2		1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		7.0	12.0	12.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0		14.0	19.0	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	15.0	30.0		15.0	15.0	15.0	45.0	45.0		15.0	60.0	60.0
Total Split (%)	16.7%	33.3%		16.7%	16.7%	16.7%	50.0%	50.0%		16.7%	66.7%	66.7%
Maximum Green (s)	8.0	23.0		8.0	8.0	8.0	38.0	38.0		8.0	53.0	53.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min		None	Min	Min
Act Effct Green (s)	10.1	21.1			10.2	20.9	39.5	39.5		49.4	56.3	56.3
Actuated g/C Ratio	0.12	0.26			0.12	0.26	0.48	0.48		0.60	0.69	0.69
v/c Ratio	0.33	0.11			0.55	0.45	0.04	0.91		0.34	0.53	0.19
Control Delay	41.8	25.1			55.4	10.2	14.6	39.5		12.7	11.8	2.5
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	41.8	25.1			55.4	10.2	14.6	39.5		12.7	11.8	2.5
LOS	D	C			E	B	B	D		B	B	A
Approach Delay		35.3			22.3			39.1			9.8	
Approach LOS		D			C			D			A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 81.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	4	4	105	4	221	4	302	16	41	428	13
Future Volume (vph)	6	4	4	105	4	221	4	302	16	41	428	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frt		0.964				0.850			0.850		0.997	
Flt Protected		0.977			0.953		0.950			0.950		
Satd. Flow (prot)	0	1754	0	0	1775	1583	1770	1827	1553	1597	1679	0
Flt Permitted		0.977			0.953		0.950			0.950		
Satd. Flow (perm)	0	1754	0	0	1775	1583	1770	1827	1553	1597	1679	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		618			672			1734			1092	
Travel Time (s)		16.9			45.8			26.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.54	0.90	0.54	0.90	0.54	0.54	0.54	0.54	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	4%	13%	13%	2%
Adj. Flow (vph)	7	4	4	194	4	409	4	559	30	76	793	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	198	409	4	559	30	76	807	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	74.7

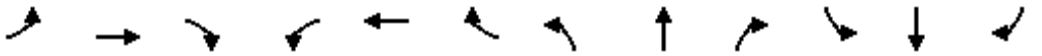
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	4	4	105	4	221	4	302	16	41	428	13
Future Vol, veh/h	6	4	4	105	4	221	4	302	16	41	428	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	54	90	54	90	54	54	54	54	90
Heavy Vehicles, %	2	2	2	2	2	2	2	4	4	13	13	2
Mvmt Flow	7	4	4	194	4	409	4	559	30	76	793	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1726	1519	800	1523	1526	559	807	0	-	559	0	0
Stage 1	952	952	-	567	567	-	-	-	-	-	-	-
Stage 2	774	567	-	956	959	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.23	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.317	-	-
Pot Cap-1 Maneuver	70	119	385	~ 97	118	529	818	-	0	959	-	-
Stage 1	312	338	-	508	507	-	-	-	0	-	-	-
Stage 2	391	507	-	310	335	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	14	109	385	~ 87	108	529	818	-	-	959	-	-
Mov Cap-2 Maneuver	14	109	-	~ 87	108	-	-	-	-	-	-	-
Stage 1	310	311	-	505	504	-	-	-	-	-	-	-
Stage 2	87	504	-	278	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	226.9	247.1	0.1	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	818	-	29	87	529	959	-	-
HCM Lane V/C Ratio	0.005	-	0.536	2.286	0.774	0.079	-	-
HCM Control Delay (s)	9.4	-	226.9	$ 691.1	31.3	9.1	-	-
HCM Lane LOS	A	-	F	F	D	A	-	-
HCM 95th %tile Q(veh)	0	-	1.7	18.1	7	0.3	-	-

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



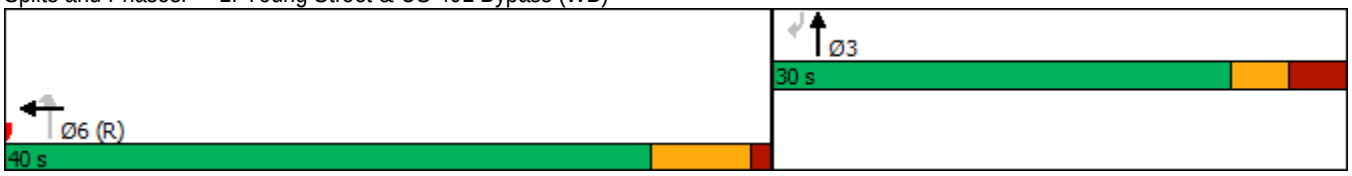
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	608	300	0	150	0	0	0	495
Future Volume (vph)	0	0	0	0	608	300	0	150	0	0	0	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						323						346
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			412			1248	
Travel Time (s)		10.5			4.3			5.1			24.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	0	0	0	0	654	323	0	161	0	0	0	532
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	654	323	0	161	0	0	0	532
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					1	0		1				1
Detector Template												
Leading Detector (ft)					426	0		40				40
Trailing Detector (ft)					420	0		0				0
Detector 1 Position(ft)					420	0		0				0
Detector 1 Size(ft)					6	20		40				40
Detector 1 Type					Cl+Ex	Cl+Ex		Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0	0.0		0.0				0.0
Detector 1 Queue (s)					0.0	0.0		0.0				0.0
Detector 1 Delay (s)					0.0	0.0		15.0				15.0
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0

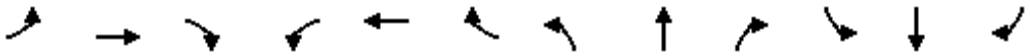
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					40.0	40.0		30.0				30.0
Total Split (%)					57.1%	57.1%		42.9%				42.9%
Maximum Green (s)					33.6	33.6		23.9				23.9
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					6.0	6.0		2.0				2.0
Minimum Gap (s)					3.4	3.4		2.0				2.0
Time Before Reduce (s)					15.0	15.0		0.0				0.0
Time To Reduce (s)					45.0	45.0		0.0				0.0
Recall Mode					C-Max	C-Max		None				None
Act Effct Green (s)					48.3	48.3		70.0				11.7
Actuated g/C Ratio					0.69	0.69		1.00				0.17
v/c Ratio					0.27	0.27		0.09				0.71
Control Delay					3.9	0.8		0.1				14.6
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					3.9	0.8		0.1				14.6
LOS					A	A		A				B
Approach Delay					2.8			0.1			14.6	
Approach LOS					A			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 69 (99%), Referenced to phase 2: and 6:NBWB, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 6.3 Intersection LOS: A
Intersection Capacity Utilization 53.6% ICU Level of Service A
Analysis Period (min) 15
Description: 05-2236
! Phase conflict between lane groups.

Splits and Phases: 1: Young Street & US 401 Bypass (WB)





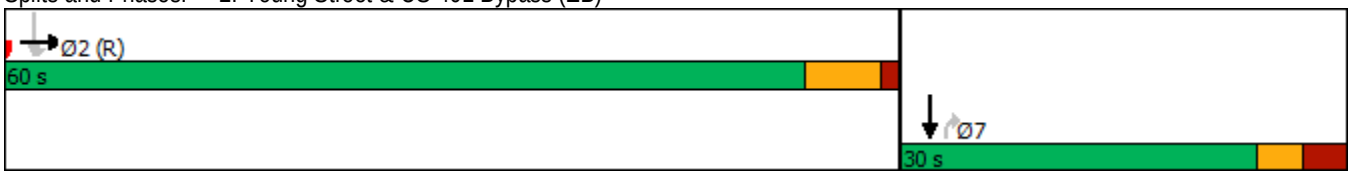
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	965	853	0	0	0	0	0	610	0	191	0
Future Volume (vph)	0	965	853	0	0	0	0	0	610	0	191	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		225	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected												
Satd. Flow (prot)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			841						203			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		381			839			450			381	
Travel Time (s)		4.7			10.4			6.8			4.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	0	1038	917	0	0	0	0	0	656	0	205	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1038	917	0	0	0	0	0	656	0	205	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	0						1		1	
Detector Template												
Leading Detector (ft)		426	0						40		40	
Trailing Detector (ft)		420	0						0		0	
Detector 1 Position(ft)		420	0						0		0	
Detector 1 Size(ft)		6	20						40		40	
Detector 1 Type		Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0						0.0		0.0	
Detector 1 Queue (s)		0.0	0.0						0.0		0.0	
Detector 1 Delay (s)		0.0	0.0						15.0		15.0	
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		60.0	60.0						30.0		30.0	
Total Split (%)		66.7%	66.7%						33.3%		33.3%	
Maximum Green (s)		53.6	53.6						23.9		23.9	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		6.0	6.0						2.0		2.0	
Minimum Gap (s)		3.4	3.4						2.0		2.0	
Time Before Reduce (s)		15.0	15.0						0.0		0.0	
Time To Reduce (s)		45.0	45.0						0.0		0.0	
Recall Mode		C-Max	C-Max						None		None	
Act Effct Green (s)		59.2	59.2						20.8		90.0	
Actuated g/C Ratio		0.66	0.66						0.23		1.00	
v/c Ratio		0.46	0.70						0.83		0.11	
Control Delay		6.7	3.6						31.8		0.1	
Queue Delay		0.0	0.3						0.0		0.0	
Total Delay		6.7	3.9						31.8		0.1	
LOS		A	A						C		A	
Approach Delay		5.4						31.8			0.1	
Approach LOS		A						C			A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 89 (99%), Referenced to phase 2:EBSB and 6:, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 11.2 Intersection LOS: B
Intersection Capacity Utilization 71.2% ICU Level of Service C
Analysis Period (min) 15
Description: 05-2390
! Phase conflict between lane groups.

Splits and Phases: 2: Young Street & US 401 Bypass (EB)

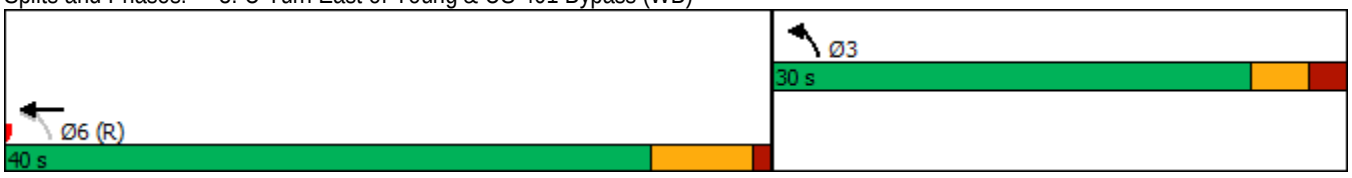


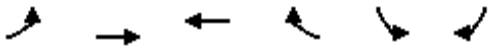
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	613	486	0
Future Volume (vph)	0	0	0	613	486	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3575	1752	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3575	1752	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	626	496	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	626	496	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	1.01	1.01
Turning Speed (mph)		9	15		15	9
Number of Detectors				1	1	
Detector Template						
Leading Detector (ft)				426	40	
Trailing Detector (ft)				420	0	
Detector 1 Position(ft)				420	0	
Detector 1 Size(ft)				6	40	
Detector 1 Type				Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)				0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	
Detector 1 Delay (s)				0.0	15.0	
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				40.0	30.0	
Total Split (%)				57.1%	42.9%	
Maximum Green (s)				33.6	24.9	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)				6.0	2.0	
Minimum Gap (s)				3.4	2.0	
Time Before Reduce (s)				15.0	0.0	
Time To Reduce (s)				45.0	0.0	
Recall Mode				C-Max	None	
Act Effct Green (s)				52.7	70.0	
Actuated g/C Ratio				0.75	1.00	
v/c Ratio				0.23	0.28	
Control Delay				2.8	0.4	
Queue Delay				0.0	0.0	
Total Delay				2.8	0.4	
LOS				A	A	
Approach Delay				2.8	0.4	
Approach LOS				A	A	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 64 (91%), Referenced to phase 2: and 6:NBWB, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.28	
Intersection Signal Delay: 1.8	Intersection LOS: A
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	
Description: 05-2391	
! Phase conflict between lane groups.	

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)





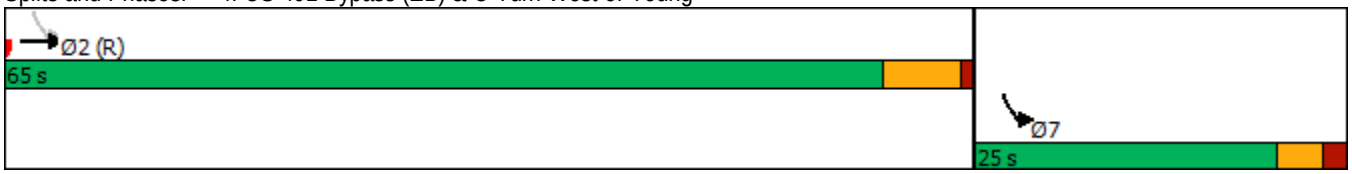
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1537	0	0	430	0
Future Volume (vph)	0	1537	0	0	430	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-1%		-1%	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3487	0	0	1761	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3487	0	0	1761	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	443		58	
Travel Time (s)		13.5	5.5		1.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	0	1635	0	0	457	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1635	0	0	457	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	0.99	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors		1			1	
Detector Template						
Leading Detector (ft)		426			40	
Trailing Detector (ft)		420			0	
Detector 1 Position(ft)		420			0	
Detector 1 Size(ft)		6			40	
Detector 1 Type		Cl+Ex			Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0			0.0	
Detector 1 Queue (s)		0.0			0.0	
Detector 1 Delay (s)		0.0			15.0	
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		65.0			25.0	
Total Split (%)		72.2%			27.8%	

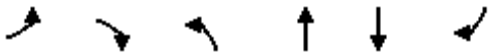
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Maximum Green (s)		58.8			20.2	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0			2.0	
Minimum Gap (s)		3.4			2.0	
Time Before Reduce (s)		15.0			0.0	
Time To Reduce (s)		45.0			0.0	
Recall Mode		C-Max			None	
Act Effct Green (s)		73.2			90.0	
Actuated g/C Ratio		0.81			1.00	
v/c Ratio		0.58			0.26	
Control Delay		3.9			0.4	
Queue Delay		0.0			0.0	
Total Delay		3.9			0.4	
LOS		A			A	
Approach Delay		3.9			0.4	
Approach LOS		A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBSB and 6:, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 3.1	Intersection LOS: A
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	
Description: 05-2425	

! Phase conflict between lane groups.

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	46	67	384	449	37
Future Volume (vph)	24	46	67	384	449	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.911				0.990	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1590	0	1770	1863	1809	0
Flt Permitted	0.983		0.950			
Satd. Flow (perm)	1590	0	1770	1863	1809	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	7%	7%	2%	2%	4%	4%
Adj. Flow (vph)	26	51	74	422	493	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	74	422	534	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	46	67	384	449	37
Future Vol, veh/h	24	46	67	384	449	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	2	2	4	4
Mvmt Flow	26	51	74	422	493	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1084	514	534	0	-	0
Stage 1	514	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	235	551	1034	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	218	551	1034	-	-	-
Mov Cap-2 Maneuver	218	-	-	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	556	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.6	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1034	-	362	-	-
HCM Lane V/C Ratio	0.071	-	0.212	-	-
HCM Control Delay (s)	8.7	-	17.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	42	24	45	34	4	16	4	30	4	4	4
Future Volume (vph)	4	42	24	45	34	4	16	4	30	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.954			0.994			0.919			0.955	
Flt Protected		0.997			0.973			0.984			0.984	
Satd. Flow (prot)	0	1673	0	0	1784	0	0	1408	0	0	1750	0
Flt Permitted		0.997			0.973			0.984			0.984	
Satd. Flow (perm)	0	1673	0	0	1784	0	0	1408	0	0	1750	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	22%	22%	22%	2%	2%	2%
Adj. Flow (vph)	4	46	26	49	37	4	18	4	33	4	4	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	90	0	0	55	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.7%		ICU Level of Service A	
Analysis Period (min) 15			

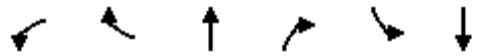
Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	42	24	45	34	4	16	4	30	4	4	4
Future Vol, veh/h	4	42	24	45	34	4	16	4	30	4	4	4
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	8	8	8	3	3	3	22	22	22	2	2	2
Mvmt Flow	4	46	26	49	37	4	18	4	33	4	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	74	0	0	210	208	61	223	219	39
Stage 1	-	-	-	-	-	-	69	69	-	137	137	-
Stage 2	-	-	-	-	-	-	141	139	-	86	82	-
Critical Hdwy	4.18	-	-	4.13	-	-	7.32	6.72	6.42	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Follow-up Hdwy	2.272	-	-	2.227	-	-	3.698	4.198	3.498	3.518	4.018	3.318
Pot Cap-1 Maneuver	1530	-	-	1519	-	-	706	655	951	733	679	1033
Stage 1	-	-	-	-	-	-	893	800	-	866	783	-
Stage 2	-	-	-	-	-	-	816	745	-	922	827	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1530	-	-	1516	-	-	679	630	949	685	653	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	630	-	685	653	-
Stage 1	-	-	-	-	-	-	889	796	-	863	757	-
Stage 2	-	-	-	-	-	-	781	720	-	882	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	4	9.7	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	813	1530	-	-	1516	-	-	758
HCM Lane V/C Ratio	0.068	0.003	-	-	0.033	-	-	0.017
HCM Control Delay (s)	9.7	7.4	0	-	7.5	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	4	612	4	8	1037
Future Volume (vph)	4	4	612	4	8	1037
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1719	1810
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	5%	5%
Adj. Flow (vph)	4	4	680	4	9	1152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	684	0	9	1152
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.6%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	612	4	8	1037
Future Vol, veh/h	4	4	612	4	8	1037
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	4	4	680	4	9	1152

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1852	682	0	0	684	0
Stage 1	682	-	-	-	-	-
Stage 2	1170	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	81	450	-	-	895	-
Stage 1	502	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	80	450	-	-	895	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	497	-	-	-	-	-
Stage 2	295	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.3	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	136	895	-
HCM Lane V/C Ratio	-	-	0.065	0.01	-
HCM Control Delay (s)	-	-	33.3	9.1	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

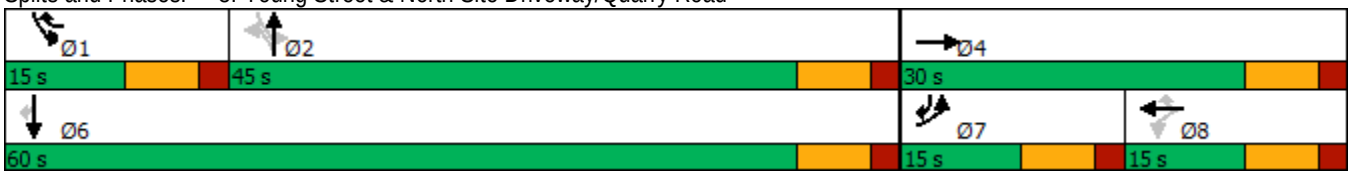
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	4	49	43	4	88	17	440	27	135	660	250
Future Volume (vph)	85	4	49	43	4	88	17	440	27	135	660	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	0		250	100		0	525		100
Storage Lanes	1		0	0		1	1		0	1		1
Taper Length (ft)	100			25			100			100		
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
Frt		0.860				0.850		0.991				0.850
Flt Protected	0.950				0.956		0.950			0.950		
Satd. Flow (prot)	1770	1602	0	0	1734	1538	1770	1810	0	1719	1810	1583
Flt Permitted	0.950				0.701		0.383			0.230		
Satd. Flow (perm)	1770	1602	0	0	1271	1538	713	1810	0	416	1810	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						133		4				278
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		703			1124			1108			981	
Travel Time (s)		19.2			17.0			16.8			14.9	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.92	0.92	0.92	0.92	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	5%	2%	4%	4%	5%	5%	2%
Adj. Flow (vph)	94	4	54	47	4	96	19	478	29	147	717	278
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	58	0	0	51	96	19	507	0	147	717	278
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	0
Detector Template						Right						
Leading Detector (ft)	50	50		50	50	20	50	206		50	206	0
Trailing Detector (ft)	0	0		0	0	0	0	200		0	200	0
Detector 1 Position(ft)	0	0		0	0	0	0	200		0	200	0
Detector 1 Size(ft)	50	50		50	50	20	50	6		50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA		D.P+P	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases				8		8	2			2		6
Detector Phase	7	4		8	8	1	2	2		1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0		14.0	19.0	14.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	15.0	30.0		15.0	15.0	15.0	45.0	45.0		15.0	60.0	15.0
Total Split (%)	16.7%	33.3%		16.7%	16.7%	16.7%	50.0%	50.0%		16.7%	66.7%	16.7%
Maximum Green (s)	8.0	23.0		8.0	8.0	8.0	38.0	38.0		8.0	53.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag		Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min		None	Min	None
Act Effct Green (s)	10.2	17.8			10.1	17.7	24.9	24.9		35.0	40.3	58.7
Actuated g/C Ratio	0.15	0.26			0.15	0.26	0.36	0.36		0.51	0.59	0.85
v/c Ratio	0.36	0.14			0.27	0.19	0.07	0.77		0.36	0.68	0.20
Control Delay	37.0	22.3			37.2	3.1	16.4	28.7		10.5	14.7	0.7
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	37.0	22.3			37.2	3.1	16.4	28.7		10.5	14.7	0.7
LOS	D	C			D	A	B	C		B	B	A
Approach Delay		31.3			15.0			28.3			10.8	
Approach LOS		C			B			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 68.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 68.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	4	5	20	4	81	4	444	13	80	565	17
Future Volume (vph)	7	4	5	20	4	81	4	444	13	80	565	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frt		0.955				0.850			0.850		0.995	
Flt Protected		0.978			0.960		0.950			0.950		
Satd. Flow (prot)	0	1740	0	0	1788	1583	1770	1863	1583	1770	1853	0
Flt Permitted		0.978			0.960		0.950			0.950		
Satd. Flow (perm)	0	1740	0	0	1788	1583	1770	1863	1583	1770	1853	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		435			672			1734			1092	
Travel Time (s)		11.9			45.8			26.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.94	0.90	0.94	0.90	0.94	0.94	0.94	0.94	0.90
Adj. Flow (vph)	8	4	6	21	4	86	4	472	14	85	601	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	25	86	4	472	14	85	620	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	4	5	20	4	81	4	444	13	80	565	17
Future Vol, veh/h	7	4	5	20	4	81	4	444	13	80	565	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	94	90	94	90	94	94	94	94	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	4	6	21	4	86	4	472	14	85	601	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1306	1261	611	1266	1270	472	620	0	-	472	0	0
Stage 1	781	781	-	480	480	-	-	-	-	-	-	-
Stage 2	525	480	-	786	790	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	137	170	494	146	168	592	960	-	0	1090	-	-
Stage 1	388	405	-	567	554	-	-	-	0	-	-	-
Stage 2	536	554	-	385	402	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	107	156	494	132	154	592	960	-	-	1090	-	-
Mov Cap-2 Maneuver	107	156	-	132	154	-	-	-	-	-	-	-
Stage 1	386	373	-	565	552	-	-	-	-	-	-	-
Stage 2	452	552	-	347	371	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.7	18	0.1	1
HCM LOS	D	C		

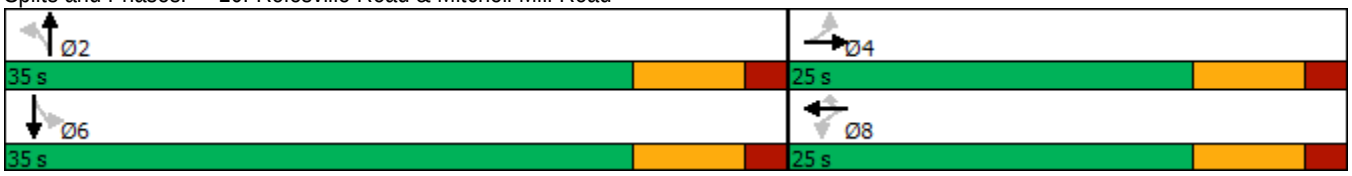
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	960	-	158	135	592	1090	-	-
HCM Lane V/C Ratio	0.005	-	0.113	0.191	0.146	0.078	-	-
HCM Control Delay (s)	8.8	-	30.7	37.8	12.1	8.6	-	-
HCM Lane LOS	A	-	D	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	0.7	0.5	0.3	-	-

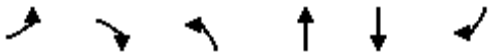
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	116	8	15	44	17	8	328	46	15	297	110
Future Volume (vph)	53	116	8	15	44	17	8	328	46	15	297	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	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
Frt		0.994				0.850		0.984			0.965	
Flt Protected		0.985			0.987			0.999			0.998	
Satd. Flow (prot)	0	1806	0	0	1839	1583	0	1796	0	0	1759	0
Flt Permitted		0.875			0.886			0.988			0.978	
Satd. Flow (perm)	0	1604	0	0	1650	1583	0	1776	0	0	1724	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	59	129	9	17	49	19	9	364	51	17	330	122
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	197	0	0	66	19	0	424	0	0	469	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	50		20	50	0	20	76		20	76	
Trailing Detector (ft)	0	0		0	0	0	0	70		0	70	
Detector 1 Position(ft)	0	0		0	0	0	0	70		0	70	
Detector 1 Size(ft)	20	50		20	50	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	28.0	28.0		28.0	28.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		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	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		12.7			12.7	12.7		23.4			23.4	
Actuated g/C Ratio		0.30			0.30	0.30		0.56			0.56	
v/c Ratio		0.40			0.13	0.04		0.43			0.49	
Control Delay		15.4			12.5	12.1		9.9			10.8	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		15.4			12.5	12.1		9.9			10.8	
LOS		B			B	B		A			B	
Approach Delay		15.4			12.4			9.9			10.8	
Approach LOS		B			B			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 41.8			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Rolesville Road & Mitchell Mill Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	42	57	42	443	664	88
Future Volume (vph)	42	57	42	443	664	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	100			100
Storage Lanes	1	1	1			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Link Speed (mph)	25			45	45	
Link Distance (ft)	532			1092	1108	
Travel Time (s)	14.5			16.5	16.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	63	47	492	738	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	63	47	492	738	98
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	42	57	42	443	664	88
Future Vol, veh/h	42	57	42	443	664	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	63	47	492	738	98

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1324	738	836	0	-	0
Stage 1	738	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	172	418	798	-	-	-
Stage 1	473	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	162	418	798	-	-	-
Mov Cap-2 Maneuver	162	-	-	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	556	-	-	-	-	-

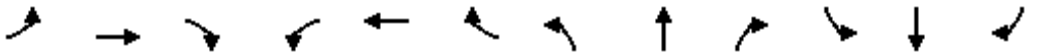
Approach	EB	NB	SB
HCM Control Delay, s	24	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	798	-	162	418	-	-
HCM Lane V/C Ratio	0.058	-	0.288	0.152	-	-
HCM Control Delay (s)	9.8	-	36	15.1	-	-
HCM Lane LOS	A	-	E	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	0.5	-	-

Appendix L:

Synchro Output:

Commercial Build-out (2025)

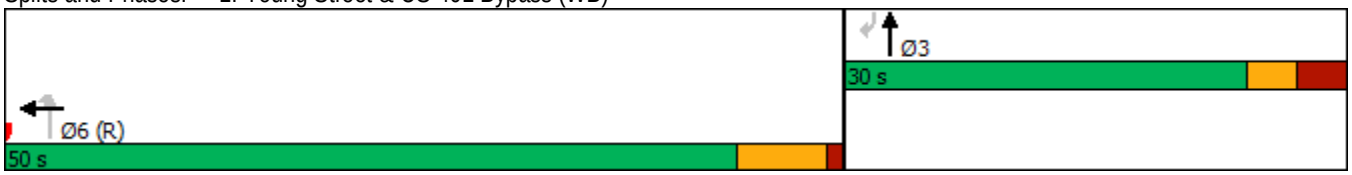


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1461	394	0	59	0	0	0	582
Future Volume (vph)	0	0	0	0	1461	394	0	59	0	0	0	582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1809	0	0	0	2828
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						438						46
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			477			1248	
Travel Time (s)		10.5			4.3			5.9			24.3	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	4%	4%	4%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1623	438	0	66	0	0	0	647
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					50.0	50.0		30.0				30.0
Total Split (%)					62.5%	62.5%		37.5%				37.5%
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode					C-Max	C-Max		None				None
Act Effct Green (s)					48.2	48.2		80.0				21.8
Actuated g/C Ratio					0.60	0.60		1.00				0.27
v/c Ratio					0.77	0.39		0.04				0.80
Control Delay					12.3	1.5		0.0				33.2
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					12.3	1.5		0.0				33.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS					B	A		A				C
Approach Delay					10.0						33.2	
Approach LOS					B						C	
Queue Length 50th (ft)					283	12		0				156
Queue Length 95th (ft)					387	10		0				214
Internal Link Dist (ft)		767			269			397			1168	
Turn Bay Length (ft)						225						85
Base Capacity (vph)					2120	1123		1774				915
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					0.77	0.39		0.04				0.71

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 1 (1%), Referenced to phase 2: and 6:NBWB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 69.1%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-2236			
! Phase conflict between lane groups.			

Splits and Phases: 1: Young Street & US 401 Bypass (WB)

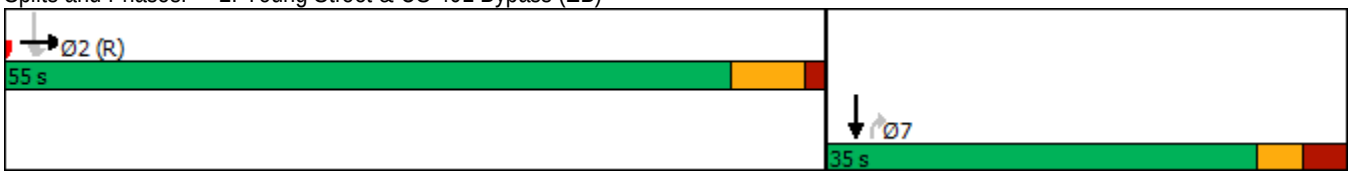


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	280	862	0	0	0	0	0	954	0	206	0
Future Volume (vph)	0	280	862	0	0	0	0	0	954	0	206	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		400	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	3436	1537	0	0	0	0	0	2641	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3436	1537	0	0	0	0	0	2586	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			815						936			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		448			839			450			381	
Travel Time (s)		5.6			10.4			6.8			4.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	6%	6%	6%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	311	958	0	0	0	0	0	1060	0	229	0
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		55.0	55.0						35.0		35.0	
Total Split (%)		61.1%	61.1%						38.9%		38.9%	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		C-Max	C-Max						None		None	
Act Effct Green (s)		64.5	64.5						15.5		90.0	
Actuated g/C Ratio		0.72	0.72						0.17		1.00	
v/c Ratio		0.13	0.72						0.87		0.13	
Control Delay		4.8	5.2						13.0		0.1	
Queue Delay		0.0	0.0						0.0		0.0	
Total Delay		4.8	5.2						13.0		0.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A	A						B		A	
Approach Delay		5.1						13.0			0.1	
Approach LOS		A						B			A	
Queue Length 50th (ft)		21	18						36		0	
Queue Length 95th (ft)		44	72						96		0	
Internal Link Dist (ft)		368			759			370			301	
Turn Bay Length (ft)			400						250			
Base Capacity (vph)		2463	1332						1486		1814	
Starvation Cap Reductn		0	13						0		0	
Spillback Cap Reductn		0	0						0		0	
Storage Cap Reductn		0	0						0		0	
Reduced v/c Ratio		0.13	0.73						0.71		0.13	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 88 (98%), Referenced to phase 2:EBSB and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 72.6%		ICU Level of Service C	
Analysis Period (min) 15			
Description: 05-2390			
! Phase conflict between lane groups.			

Splits and Phases: 2: Young Street & US 401 Bypass (EB)

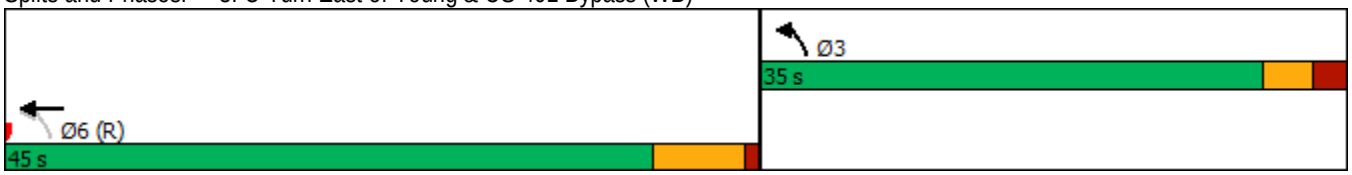


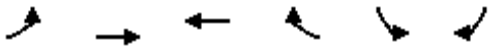
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1343	719	0
Future Volume (vph)	0	0	0	1343	719	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	2%			-2%	2%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	0	0	0	3540	1702	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3540	1702	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	3%	3%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1460	782	0
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				45.0	35.0	
Total Split (%)				56.3%	43.8%	
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode				C-Max	None	
Act Effct Green (s)				60.4	80.0	
Actuated g/C Ratio				0.76	1.00	
v/c Ratio				0.55	0.46	
Control Delay				5.3	0.9	
Queue Delay				0.0	0.0	
Total Delay				5.3	0.9	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS				A	A	
Approach Delay				5.3	0.9	
Approach LOS				A	A	
Queue Length 50th (ft)				116	0	
Queue Length 95th (ft)				203	0	
Internal Link Dist (ft)	382			926	1	
Turn Bay Length (ft)						
Base Capacity (vph)				2674	1702	
Starvation Cap Reductn				0	0	
Spillback Cap Reductn				0	0	
Storage Cap Reductn				0	0	
Reduced v/c Ratio				0.55	0.46	

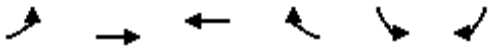
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2: and 6:NBWB, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 3.8		Intersection LOS: A	
Intersection Capacity Utilization 85.3%		ICU Level of Service E	
Analysis Period (min) 15			
Description: 05-2391			
! Phase conflict between lane groups.			

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)





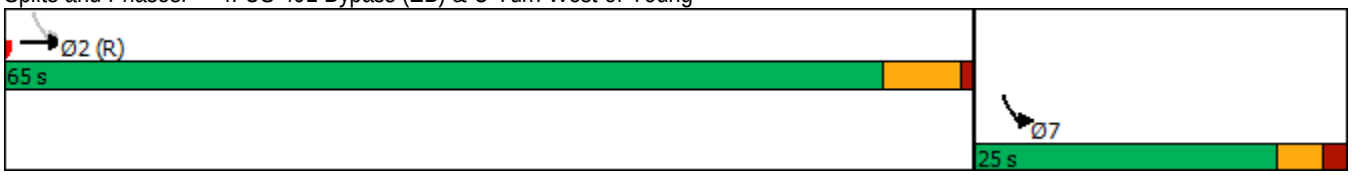
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	802	0	0	398	0
Future Volume (vph)	0	802	0	0	398	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		1%	-1%		-1%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Satd. Flow (prot)	0	3421	0	0	1778	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3421	0	0	1778	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	376		58	
Travel Time (s)		13.5	4.7		1.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	891	0	0	442	0
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		65.0			25.0	
Total Split (%)		72.2%			27.8%	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		C-Max			None	
Act Effct Green (s)		73.2			90.0	
Actuated g/C Ratio		0.81			1.00	
v/c Ratio		0.32			0.25	
Control Delay		2.5			0.3	
Queue Delay		0.0			0.0	
Total Delay		2.5			0.3	

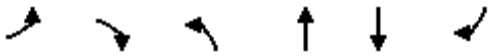


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
LOS		A			A	
Approach Delay		2.5			0.3	
Approach LOS		A			A	
Queue Length 50th (ft)		47			0	
Queue Length 95th (ft)		63			0	
Internal Link Dist (ft)		1009	296		1	
Turn Bay Length (ft)						
Base Capacity (vph)		2781			1778	
Starvation Cap Reductn		0			0	
Spillback Cap Reductn		0			0	
Storage Cap Reductn		0			0	
Reduced v/c Ratio		0.32			0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBSB and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 1.8		Intersection LOS: A	
Intersection Capacity Utilization 75.1%		ICU Level of Service D	
Analysis Period (min) 15			
Description: 05-2425			
! Phase conflict between lane groups.			

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	36	90	35	455	511	7
Future Volume (vph)	36	90	35	455	511	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1644	0	1736	1827	1859	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1644	0	1736	1827	1859	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Confl. Peds. (#/hr)			1			1
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	4%	4%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	140	0	39	506	576	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	36	90	35	455	511	7
Future Vol, veh/h	36	90	35	455	511	7
Conflicting Peds, #/hr	0	0	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	4	4	2	2
Mvmt Flow	40	100	39	506	568	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1157	573	577	0	-	0
Stage 1	573	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.14	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.236	-	-	-
Pot Cap-1 Maneuver	216	517	987	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	207	517	986	-	-	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	554	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	986	-	362	-	-
HCM Lane V/C Ratio	0.039	-	0.387	-	-
HCM Control Delay (s)	8.8	-	21.1	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.8	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	41	6	15	28	4	21	4	41	4	4	5
Future Volume (vph)	4	41	6	15	28	4	21	4	41	4	4	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1808	0	0	1780	0	0	1677	0	0	1730	0
Flt Permitted		0.997			0.984			0.984			0.986	
Satd. Flow (perm)	0	1808	0	0	1780	0	0	1677	0	0	1730	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)	1		1	1		1						
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	52	0	0	73	0	0	14	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	41	6	15	28	4	21	4	41	4	4	5
Future Vol, veh/h	4	41	6	15	28	4	21	4	41	4	4	5
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	4	4	4	2	2	2	2	2	2
Mvmt Flow	4	46	7	17	31	4	23	4	46	4	4	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	54	0	0	131	129	51	151	130	34
Stage 1	-	-	-	-	-	-	59	59	-	68	68	-
Stage 2	-	-	-	-	-	-	72	70	-	83	62	-
Critical Hdwy	4.13	-	-	4.14	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.236	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1568	-	-	1539	-	-	841	762	1017	816	761	1039
Stage 1	-	-	-	-	-	-	953	846	-	942	838	-
Stage 2	-	-	-	-	-	-	938	837	-	925	843	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1538	-	-	823	750	1016	767	749	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	823	750	-	767	749	-
Stage 1	-	-	-	-	-	-	949	843	-	938	828	-
Stage 2	-	-	-	-	-	-	918	827	-	876	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	2.4	9.2	9.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	927	1567	-	-	1538	-	-	846
HCM Lane V/C Ratio	0.079	0.003	-	-	0.011	-	-	0.017
HCM Control Delay (s)	9.2	7.3	0	-	7.4	0	-	9.3
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	6	944	4	4	1060
Future Volume (vph)	4	6	944	4	4	1060
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Satd. Flow (prot)	1672	0	1791	0	1719	1810
Flt Permitted	0.982				0.950	
Satd. Flow (perm)	1672	0	1791	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	6%	6%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	1053	0	4	1178
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 65.8%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	6	944	4	4	1060
Future Vol, veh/h	4	6	944	4	4	1060
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	5	5
Mvmt Flow	4	7	1049	4	4	1178

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2237	1051	0	0	1053	0
Stage 1	1051	-	-	-	-	-
Stage 2	1186	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	47	276	-	-	650	-
Stage 1	336	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	47	276	-	-	650	-
Mov Cap-2 Maneuver	47	-	-	-	-	-
Stage 1	334	-	-	-	-	-
Stage 2	290	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48.4	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	94	650	-
HCM Lane V/C Ratio	-	-	0.118	0.007	-
HCM Control Delay (s)	-	-	48.4	10.6	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

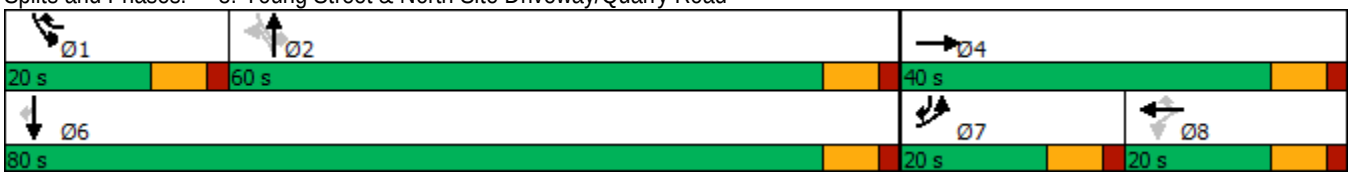
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	4	94	34	4	157	10	626	69	213	699	152
Future Volume (vph)	163	4	94	34	4	157	10	626	69	213	699	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	275		0	0		250	100		100	525		100
Storage Lanes	1		0	0		1	1		1	1		1
Taper Length (ft)	100			25			100			100		
Satd. Flow (prot)	1770	1595	0	0	1520	1335	1770	1827	1553	1719	1810	1583
Flt Permitted	0.950				0.667		0.204			0.072		
Satd. Flow (perm)	1770	1595	0	0	1061	1335	380	1827	1521	130	1810	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						107			164			129
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		742			1124			1108			981	
Travel Time (s)		20.2			17.0			16.8			14.9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.74	0.90	0.74	0.90	0.74	0.74	0.74	0.74	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	21%	2%	21%	2%	4%	4%	5%	5%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	108	0	0	50	212	11	846	93	288	945	169
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases				8		8	2		2	2		6
Detector Phase	7	4		8	8	1	2	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0	12.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0	19.0	14.0	19.0	14.0
Total Split (s)	20.0	40.0		20.0	20.0	20.0	60.0	60.0	60.0	20.0	80.0	20.0
Total Split (%)	16.7%	33.3%		16.7%	16.7%	16.7%	50.0%	50.0%	50.0%	16.7%	66.7%	16.7%
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	None
Act Effct Green (s)	14.7	28.9			12.4	29.3	55.3	55.3	55.3	70.4	75.5	96.3
Actuated g/C Ratio	0.13	0.25			0.11	0.26	0.48	0.48	0.48	0.62	0.66	0.84
v/c Ratio	0.80	0.27			0.43	0.50	0.06	0.96	0.11	1.00	0.79	0.12
Control Delay	75.0	35.1			61.3	21.5	19.3	52.2	0.3	87.0	22.0	1.0
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.0	35.1			61.3	21.5	19.3	52.2	0.3	87.0	22.0	1.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	D			E	C	B	D	A	F	C	A
Approach Delay		60.1			29.1			46.7			32.8	
Approach LOS		E			C			D			C	
Queue Length 50th (ft)	136	64			36	63	5	623	0	~185	507	5
Queue Length 95th (ft)	#260	113			78	94	17	610	0	#256	489	18
Internal Link Dist (ft)		662			1044			1028			901	
Turn Bay Length (ft)	275					250	100		100	525		100
Base Capacity (vph)	233	490			139	421	183	883	820	289	1193	1343
Starvation Cap Reductn	0	0			0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0			0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0			0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.22			0.36	0.50	0.06	0.96	0.11	1.00	0.79	0.13

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 114.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 39.7 Intersection LOS: D
Intersection Capacity Utilization 75.0% 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.

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	4	9	91	4	195	4	455	213	299	519	10
Future Volume (vph)	14	4	9	91	4	195	4	455	213	299	519	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
Satd. Flow (prot)	0	1733	0	0	1777	1583	1770	1845	1568	1770	1859	0
Flt Permitted		0.974			0.954		0.950			0.950		
Satd. Flow (perm)	0	1733	0	0	1777	1583	1770	1845	1568	1770	1859	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		682			672			1734			1092	
Travel Time (s)		18.6			45.8			26.3			16.5	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.68	0.90	0.68	0.90	0.68	0.68	0.68	0.68	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	138	287	4	669	313	440	774	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.3%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	326.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	4	9	91	4	195	4	455	213	299	519	10
Future Vol, veh/h	14	4	9	91	4	195	4	455	213	299	519	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	68	90	68	90	68	68	68	68	90
Heavy Vehicles, %	2	2	2	2	2	2	2	3	3	2	2	2
Mvmt Flow	16	4	10	134	4	287	4	669	313	440	763	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2472	2326	769	2333	2331	669	774	0	-	669	0	0
Stage 1	1649	1649	-	677	677	-	-	-	-	-	-	-
Stage 2	823	677	-	1656	1654	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	20	37	401	~ 26	37	458	842	-	0	921	-	-
Stage 1	125	156	-	443	452	-	-	-	0	-	-	-
Stage 2	368	452	-	~ 124	155	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	~ 4	19	401	~ 13	19	458	842	-	-	921	-	-
Mov Cap-2 Maneuver	~ 4	19	-	~ 13	19	-	-	-	-	-	-	-
Stage 1	124	81	-	441	450	-	-	-	-	-	-	-
Stage 2	136	450	-	~ 60	81	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 2498.9	$ 1612.5	0.1	4.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	842	-	7	13	458	921	-	-
HCM Lane V/C Ratio	0.005	-	4.286	10.636	0.626	0.477	-	-
HCM Control Delay (s)	9.3	$	2498.9	$ 4904.8	25.1	12.4	-	-
HCM Lane LOS	A	-	F	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	5.1	18.5	4.2	2.6	-	-

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

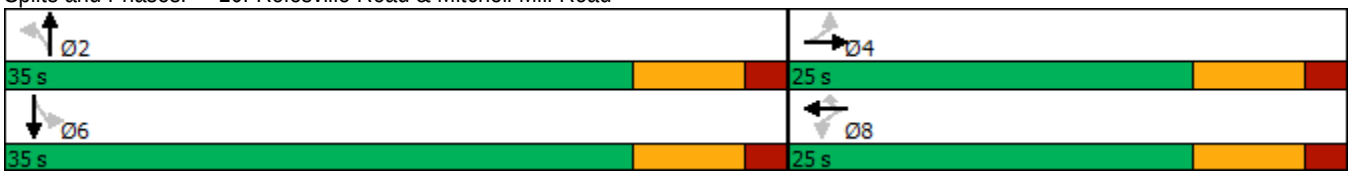
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	17	4	52	184	16	9	314	8	16	370	237
Future Volume (vph)	124	17	4	52	184	16	9	314	8	16	370	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1781	0	0	1842	1583	0	1802	0	0	1699	0
Flt Permitted		0.550			0.889			0.978			0.986	
Satd. Flow (perm)	0	1021	0	0	1656	1583	0	1764	0	0	1677	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	6%	6%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	262	18	0	368	0	0	692	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0		25.0	25.0	
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		5.0			5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		15.4			15.4	15.4		25.6			25.6	
Actuated g/C Ratio		0.30			0.30	0.30		0.50			0.50	
v/c Ratio		0.53			0.53	0.04		0.42			0.83	
Control Delay		23.3			20.2	14.0		10.4			22.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		23.3			20.2	14.0		10.4			22.7	

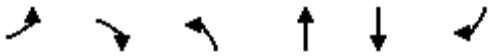
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C			C	B		B			C	
Approach Delay		23.3			19.8			10.4			22.7	
Approach LOS		C			B			B			C	
Queue Length 50th (ft)		44			73	4		65			164	
Queue Length 95th (ft)		96			134	16		134			#393	
Internal Link Dist (ft)		1019			964			959			2438	
Turn Bay Length (ft)						285						
Base Capacity (vph)		412			669	640		1070			1017	
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		0.39			0.39	0.03		0.34			0.68	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 51.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 19.2 Intersection LOS: B
Intersection Capacity Utilization 74.6% 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.

Splits and Phases: 10: Rolesville Road & Mitchell Mill Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	108	25	626	775	53
Future Volume (vph)	80	108	25	626	775	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	125	0	100			100
Storage Lanes	1	1	1			1
Taper Length (ft)	100		100			
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Link Speed (mph)	25			45	45	
Link Distance (ft)	696			1092	1108	
Travel Time (s)	19.0			16.5	16.8	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	120	28	696	861	59
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.1%		ICU Level of Service A	
Analysis Period (min) 15			

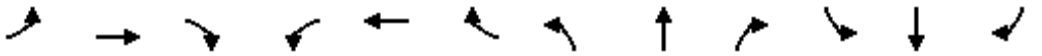
Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	108	25	626	775	53
Future Vol, veh/h	80	108	25	626	775	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	120	28	696	861	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1613	861	920	0	-	0
Stage 1	861	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	115	355	742	-	-	-
Stage 1	414	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	111	355	742	-	-	-
Mov Cap-2 Maneuver	111	-	-	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	466	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	58.2	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	742	-	111	355	-	-
HCM Lane V/C Ratio	0.037	-	0.801	0.338	-	-
HCM Control Delay (s)	10	-	109.6	20.2	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	4.6	1.5	-	-



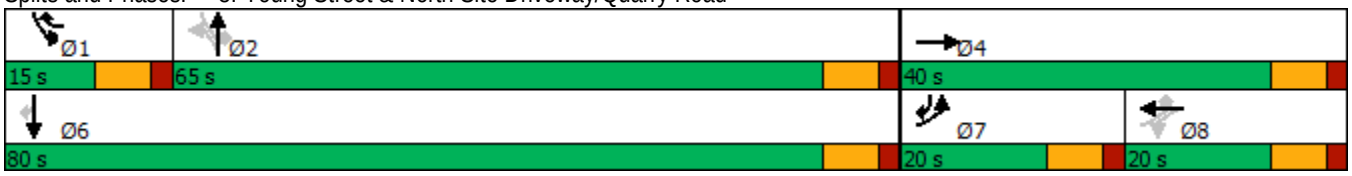
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	4	93	47	4	137	77	488	24	66	419	284
Future Volume (vph)	166	4	93	47	4	137	77	488	24	66	419	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	0		250	100		100	525		100
Storage Lanes	1		0	0		1	1		1	1		1
Taper Length (ft)	100			25			100			100		
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
Frt		0.856				0.850			0.850			0.850
Flt Protected	0.950				0.955		0.950			0.950		
Satd. Flow (prot)	1770	1595	0	0	1466	1292	1770	1863	1583	1671	1759	1583
Flt Permitted	0.709				0.661		0.417			0.102		
Satd. Flow (perm)	1321	1595	0	0	1015	1292	777	1863	1583	179	1759	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						198			164			316
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		602			1124			1108			981	
Travel Time (s)		16.4			17.0			16.8			14.9	
Peak Hour Factor	0.90	0.90	0.90	0.67	0.90	0.67	0.90	0.67	0.67	0.67	0.67	0.90
Heavy Vehicles (%)	2%	2%	2%	25%	2%	25%	2%	2%	2%	8%	8%	2%
Adj. Flow (vph)	184	4	103	70	4	204	86	728	36	99	625	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	107	0	0	74	204	86	728	36	99	625	316
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	0	1	1	0
Detector Template						Right						
Leading Detector (ft)	50	50		50	50	20	50	206	0	50	206	0
Trailing Detector (ft)	0	0		0	0	0	0	200	0	0	200	0
Detector 1 Position(ft)	0	0		0	0	0	0	200	0	0	200	0
Detector 1 Size(ft)	50	50		50	50	20	50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	D.P+P	NA		Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases	8			8		8	2		2	2		6
Detector Phase	7	4		8	8	1	2	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0	12.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0	19.0	14.0	19.0	14.0

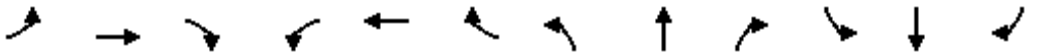
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	20.0	40.0		20.0	20.0	15.0	65.0	65.0	65.0	15.0	80.0	20.0
Total Split (%)	16.7%	33.3%		16.7%	16.7%	12.5%	54.2%	54.2%	54.2%	12.5%	66.7%	16.7%
Maximum Green (s)	13.0	33.0		13.0	13.0	8.0	58.0	58.0	58.0	8.0	73.0	13.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	None
Act Effct Green (s)	24.6	28.2			13.5	24.3	43.7	43.7	43.7	54.0	59.4	80.9
Actuated g/C Ratio	0.25	0.29			0.14	0.25	0.44	0.44	0.44	0.55	0.60	0.82
v/c Ratio	0.47	0.23			0.53	0.44	0.25	0.88	0.05	0.39	0.59	0.23
Control Delay	34.3	31.0			61.5	8.9	20.1	38.7	0.1	15.0	15.7	0.7
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.3	31.0			61.5	8.9	20.1	38.7	0.1	15.0	15.7	0.7
LOS	C	C			E	A	C	D	A	B	B	A
Approach Delay		33.1			22.9			35.2			11.1	
Approach LOS		C			C			D			B	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 98.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 23.4 Intersection LOS: C
Intersection Capacity Utilization 60.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	4	6	105	4	221	4	316	16	41	483	17
Future Volume (vph)	10	4	6	105	4	221	4	316	16	41	483	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frt		0.957				0.850			0.850		0.997	
Flt Protected		0.976			0.953		0.950			0.950		
Satd. Flow (prot)	0	1740	0	0	1775	1583	1770	1827	1553	1597	1680	0
Flt Permitted		0.976			0.953		0.950			0.950		
Satd. Flow (perm)	0	1740	0	0	1775	1583	1770	1827	1553	1597	1680	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		618			672			1734			1092	
Travel Time (s)		16.9			45.8			26.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.54	0.90	0.54	0.90	0.54	0.54	0.54	0.54	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	4%	13%	13%	2%
Adj. Flow (vph)	11	4	7	194	4	409	4	585	30	76	894	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	198	409	4	585	30	76	913	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	100.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	4	6	105	4	221	4	316	16	41	483	17
Future Vol, veh/h	10	4	6	105	4	221	4	316	16	41	483	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	54	90	54	90	54	54	54	54	90
Heavy Vehicles, %	2	2	2	2	2	2	2	4	4	13	13	2
Mvmt Flow	11	4	7	194	4	409	4	585	30	76	894	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1856	1649	904	1654	1658	585	913	0	-	585	0	0
Stage 1	1056	1056	-	593	593	-	-	-	-	-	-	-
Stage 2	800	593	-	1061	1065	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.23	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.317	-	-
Pot Cap-1 Maneuver	56	99	335	~ 78	98	511	746	-	0	938	-	-
Stage 1	272	302	-	492	493	-	-	-	0	-	-	-
Stage 2	379	493	-	271	299	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	~ 10	90	335	~ 69	90	511	746	-	-	938	-	-
Mov Cap-2 Maneuver	~ 10	90	-	~ 69	90	-	-	-	-	-	-	-
Stage 1	271	278	-	490	491	-	-	-	-	-	-	-
Stage 2	74	491	-	240	275	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 550.7	$ 343.1	0.1	0.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	746	-	19	69	511	938	-	-
HCM Lane V/C Ratio	0.006	-	1.17	2.882	0.801	0.081	-	-
HCM Control Delay (s)	9.9	-	$ 550.7	$ 977.8	34.7	9.2	-	-
HCM Lane LOS	A	-	F	F	D	A	-	-
HCM 95th %tile Q(veh)	0	-	3.1	20	7.6	0.3	-	-

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

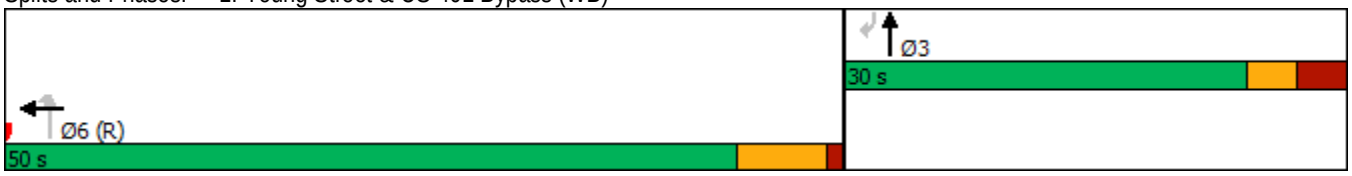
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	647	319	0	150	0	0	0	509
Future Volume (vph)	0	0	0	0	647	319	0	150	0	0	0	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			2%			-3%	
Storage Length (ft)	0		0	0		225	0		0	0		85
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt						0.850						0.850
Flt Protected												
Satd. Flow (prot)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Flt Permitted												
Satd. Flow (perm)	0	0	0	0	3522	1576	0	1826	0	0	0	2774
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Satd. Flow (RTOR)						343						381
Link Speed (mph)		55			55			55			35	
Link Distance (ft)		847			349			481			1248	
Travel Time (s)		10.5			4.3			6.0			24.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	0	0	0	0	696	343	0	161	0	0	0	547
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	696	343	0	161	0	0	0	547
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					1	0		1				1
Detector Template												
Leading Detector (ft)					426	0		40				40
Trailing Detector (ft)					420	0		0				0
Detector 1 Position(ft)					420	0		0				0
Detector 1 Size(ft)					6	20		40				40
Detector 1 Type					Cl+Ex	Cl+Ex		Cl+Ex				Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)					0.0	0.0		0.0				0.0
Detector 1 Queue (s)					0.0	0.0		0.0				0.0
Detector 1 Delay (s)					0.0	0.0		15.0				15.0
Turn Type					NA	Perm		NA				Perm
Protected Phases					6!			3				
Permitted Phases						6		6!				3
Detector Phase					6	6		3				3
Switch Phase												
Minimum Initial (s)					14.0	14.0		7.0				7.0

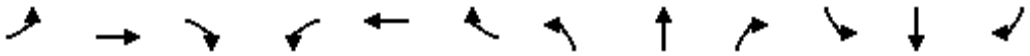
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					20.4	20.4		13.1				13.1
Total Split (s)					50.0	50.0		30.0				30.0
Total Split (%)					62.5%	62.5%		37.5%				37.5%
Maximum Green (s)					43.6	43.6		23.9				23.9
Yellow Time (s)					5.3	5.3		3.0				3.0
All-Red Time (s)					1.1	1.1		3.1				3.1
Lost Time Adjust (s)					-1.4	-1.4		-1.1				-1.1
Total Lost Time (s)					5.0	5.0		5.0				5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					6.0	6.0		2.0				2.0
Minimum Gap (s)					3.4	3.4		2.0				2.0
Time Before Reduce (s)					15.0	15.0		0.0				0.0
Time To Reduce (s)					45.0	45.0		0.0				0.0
Recall Mode					C-Max	C-Max		None				None
Act Effct Green (s)					58.0	58.0		80.0				12.0
Actuated g/C Ratio					0.72	0.72		1.00				0.15
v/c Ratio					0.27	0.28		0.09				0.74
Control Delay					3.6	0.7		0.1				16.1
Queue Delay					0.0	0.0		0.0				0.0
Total Delay					3.6	0.7		0.1				16.1
LOS					A	A		A				B
Approach Delay					2.7			0.1			16.1	
Approach LOS					A			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2: and 6:NBWB, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 6.6 Intersection LOS: A
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15
Description: 05-2236
! Phase conflict between lane groups.

Splits and Phases: 1: Young Street & US 401 Bypass (WB)





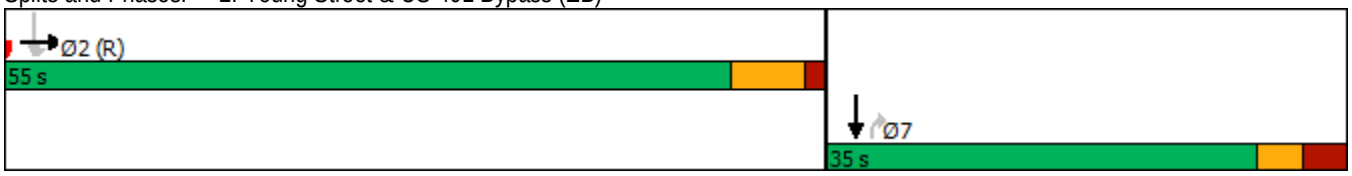
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	965	925	0	0	0	0	0	682	0	200	0
Future Volume (vph)	0	965	925	0	0	0	0	0	682	0	200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-1%			3%			2%	
Storage Length (ft)	0		400	0		0	0		250	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected												
Satd. Flow (prot)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Flt Permitted												
Satd. Flow (perm)	0	3470	1552	0	0	0	0	0	2745	0	1826	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			830						161			
Link Speed (mph)		55			55			45			55	
Link Distance (ft)		454			839			450			381	
Travel Time (s)		5.6			10.4			6.8			4.7	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	0	1038	995	0	0	0	0	0	733	0	215	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1038	995	0	0	0	0	0	733	0	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.02	1.02	1.02	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		1	0						1		1	
Detector Template												
Leading Detector (ft)		426	0						40		40	
Trailing Detector (ft)		420	0						0		0	
Detector 1 Position(ft)		420	0						0		0	
Detector 1 Size(ft)		6	20						40		40	
Detector 1 Type		Cl+Ex	Cl+Ex						Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0						0.0		0.0	
Detector 1 Queue (s)		0.0	0.0						0.0		0.0	
Detector 1 Delay (s)		0.0	0.0						15.0		15.0	
Turn Type		NA	Perm						Perm		NA	
Protected Phases		2!									7	
Permitted Phases			2						7		2!	
Detector Phase		2	2						7		7	
Switch Phase												
Minimum Initial (s)		14.0	14.0						7.0		7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		20.4	20.4						13.1		13.1	
Total Split (s)		55.0	55.0						35.0		35.0	
Total Split (%)		61.1%	61.1%						38.9%		38.9%	
Maximum Green (s)		48.6	48.6						28.9		28.9	
Yellow Time (s)		5.0	5.0						3.0		3.0	
All-Red Time (s)		1.4	1.4						3.1		3.1	
Lost Time Adjust (s)		-1.4	-1.4						-1.1		-1.1	
Total Lost Time (s)		5.0	5.0						5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		6.0	6.0						2.0		2.0	
Minimum Gap (s)		3.4	3.4						2.0		2.0	
Time Before Reduce (s)		15.0	15.0						0.0		0.0	
Time To Reduce (s)		45.0	45.0						0.0		0.0	
Recall Mode		C-Max	C-Max						None		None	
Act Effct Green (s)		55.0	55.0						25.0		90.0	
Actuated g/C Ratio		0.61	0.61						0.28		1.00	
v/c Ratio		0.49	0.78						0.84		0.12	
Control Delay		9.1	5.8						32.5		0.1	
Queue Delay		0.0	0.5						0.0		0.0	
Total Delay		9.1	6.4						32.5		0.1	
LOS		A	A						C		A	
Approach Delay		7.8						32.5			0.1	
Approach LOS		A						C			A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 89 (99%), Referenced to phase 2:EBSB and 6:, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 76.1% ICU Level of Service D
Analysis Period (min) 15
Description: 05-2390
! Phase conflict between lane groups.

Splits and Phases: 2: Young Street & US 401 Bypass (EB)

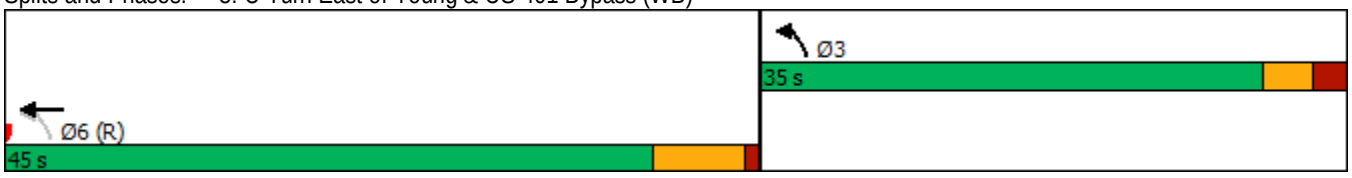


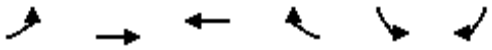
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	622	544	0
Future Volume (vph)	0	0	0	622	544	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			-2%	2%	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	3575	1752	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	3575	1752	0
Right Turn on Red		Yes			Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)	55			55	30	
Link Distance (ft)	462			1006	77	
Travel Time (s)	5.7			12.5	1.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	0	0	635	555	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	635	555	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	1.01	1.01
Turning Speed (mph)		9	15		15	9
Number of Detectors				1	1	
Detector Template						
Leading Detector (ft)				426	40	
Trailing Detector (ft)				420	0	
Detector 1 Position(ft)				420	0	
Detector 1 Size(ft)				6	40	
Detector 1 Type				Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)				0.0	0.0	
Detector 1 Queue (s)				0.0	0.0	
Detector 1 Delay (s)				0.0	15.0	
Turn Type				NA	pm+pt	
Protected Phases				6!	3	
Permitted Phases					6!	
Detector Phase				6	3	
Switch Phase						
Minimum Initial (s)				14.0	7.0	
Minimum Split (s)				20.4	12.1	
Total Split (s)				45.0	35.0	
Total Split (%)				56.3%	43.8%	
Maximum Green (s)				38.6	29.9	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Yellow Time (s)				5.4	3.0	
All-Red Time (s)				1.0	2.1	
Lost Time Adjust (s)				-1.4	-0.1	
Total Lost Time (s)				5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)				6.0	2.0	
Minimum Gap (s)				3.4	2.0	
Time Before Reduce (s)				15.0	0.0	
Time To Reduce (s)				45.0	0.0	
Recall Mode				C-Max	None	
Act Effct Green (s)				62.6	80.0	
Actuated g/C Ratio				0.78	1.00	
v/c Ratio				0.23	0.32	
Control Delay				2.6	0.5	
Queue Delay				0.0	0.0	
Total Delay				2.6	0.5	
LOS				A	A	
Approach Delay				2.6	0.5	
Approach LOS				A	A	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2: and 6:NBWB, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 1.6	Intersection LOS: A
Intersection Capacity Utilization 55.7%	ICU Level of Service B
Analysis Period (min) 15	
Description: 05-2391	
! Phase conflict between lane groups.	

Splits and Phases: 3: U-Turn East of Young & US 401 Bypass (WB)





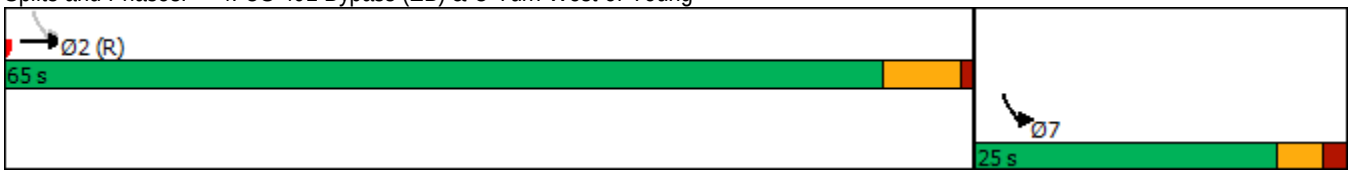
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1594	0	0	444	0
Future Volume (vph)	0	1594	0	0	444	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		1%	-1%		-1%	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	3487	0	0	1761	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3487	0	0	1761	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)						
Link Speed (mph)		55	55		30	
Link Distance (ft)		1089	370		58	
Travel Time (s)		13.5	4.6		1.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Adj. Flow (vph)	0	1696	0	0	472	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1696	0	0	472	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.99	0.99	0.99	0.99
Turning Speed (mph)	15			9	15	9
Number of Detectors		1			1	
Detector Template						
Leading Detector (ft)		426			40	
Trailing Detector (ft)		420			0	
Detector 1 Position(ft)		420			0	
Detector 1 Size(ft)		6			40	
Detector 1 Type		Cl+Ex			Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0			0.0	
Detector 1 Queue (s)		0.0			0.0	
Detector 1 Delay (s)		0.0			15.0	
Turn Type		NA			pm+pt	
Protected Phases		2!			7	
Permitted Phases					2!	
Detector Phase		2			7	
Switch Phase						
Minimum Initial (s)		14.0			7.0	
Minimum Split (s)		20.2			22.5	
Total Split (s)		65.0			25.0	
Total Split (%)		72.2%			27.8%	

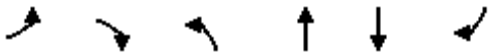
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Maximum Green (s)		58.8			20.2	
Yellow Time (s)		5.2			3.0	
All-Red Time (s)		1.0			1.8	
Lost Time Adjust (s)		-1.2			0.2	
Total Lost Time (s)		5.0			5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		6.0			2.0	
Minimum Gap (s)		3.4			2.0	
Time Before Reduce (s)		15.0			0.0	
Time To Reduce (s)		45.0			0.0	
Recall Mode		C-Max			None	
Act Effct Green (s)		73.1			90.0	
Actuated g/C Ratio		0.81			1.00	
v/c Ratio		0.60			0.27	
Control Delay		4.1			0.4	
Queue Delay		0.0			0.0	
Total Delay		4.1			0.4	
LOS		A			A	
Approach Delay		4.1			0.4	
Approach LOS		A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBSB and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 3.3		Intersection LOS: A	
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			
Description: 05-2425			

! Phase conflict between lane groups.

Splits and Phases: 4: US 401 Bypass (EB) & U-Turn West of Young





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	46	67	403	463	37
Future Volume (vph)	24	46	67	403	463	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	180			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.911				0.990	
Flt Protected	0.983		0.950			
Satd. Flow (prot)	1590	0	1770	1863	1809	0
Flt Permitted	0.983		0.950			
Satd. Flow (perm)	1590	0	1770	1863	1809	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	2356			1248	955	
Travel Time (s)	64.3			24.3	18.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	7%	7%	2%	2%	4%	4%
Adj. Flow (vph)	26	51	74	443	509	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	74	443	550	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	46	67	403	463	37
Future Vol, veh/h	24	46	67	403	463	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	180	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	7	7	2	2	4	4
Mvmt Flow	26	51	74	443	509	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1121	530	550	0	-	0
Stage 1	530	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.218	-	-	-
Pot Cap-1 Maneuver	223	539	1020	-	-	-
Stage 1	580	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	207	539	1020	-	-	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	544	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.3	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1020	-	348	-	-
HCM Lane V/C Ratio	0.072	-	0.221	-	-
HCM Control Delay (s)	8.8	-	18.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	42	24	45	34	4	16	4	30	4	4	4
Future Volume (vph)	4	42	24	45	34	4	16	4	30	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.954			0.994			0.919			0.955	
Flt Protected		0.997			0.973			0.984			0.984	
Satd. Flow (prot)	0	1673	0	0	1784	0	0	1408	0	0	1750	0
Flt Permitted		0.997			0.973			0.984			0.984	
Satd. Flow (perm)	0	1673	0	0	1784	0	0	1408	0	0	1750	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		679			2356			627			224	
Travel Time (s)		18.5			64.3			17.1			5.1	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	22%	22%	22%	2%	2%	2%
Adj. Flow (vph)	4	46	26	49	37	4	18	4	33	4	4	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	90	0	0	55	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	42	24	45	34	4	16	4	30	4	4	4
Future Vol, veh/h	4	42	24	45	34	4	16	4	30	4	4	4
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	8	8	8	3	3	3	22	22	22	2	2	2
Mvmt Flow	4	46	26	49	37	4	18	4	33	4	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	41	0	0	74	0	0	210	208	61	223	219	39
Stage 1	-	-	-	-	-	-	69	69	-	137	137	-
Stage 2	-	-	-	-	-	-	141	139	-	86	82	-
Critical Hdwy	4.18	-	-	4.13	-	-	7.32	6.72	6.42	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.32	5.72	-	6.12	5.52	-
Follow-up Hdwy	2.272	-	-	2.227	-	-	3.698	4.198	3.498	3.518	4.018	3.318
Pot Cap-1 Maneuver	1530	-	-	1519	-	-	706	655	951	733	679	1033
Stage 1	-	-	-	-	-	-	893	800	-	866	783	-
Stage 2	-	-	-	-	-	-	816	745	-	922	827	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1530	-	-	1516	-	-	679	630	949	685	653	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	630	-	685	653	-
Stage 1	-	-	-	-	-	-	889	796	-	863	757	-
Stage 2	-	-	-	-	-	-	781	720	-	882	823	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	4	9.7	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	813	1530	-	-	1516	-	-	758
HCM Lane V/C Ratio	0.068	0.003	-	-	0.033	-	-	0.017
HCM Control Delay (s)	9.7	7.4	0	-	7.5	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	4	684	4	8	1118
Future Volume (vph)	4	4	684	4	8	1118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	90	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932		0.999			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1694	0	1861	0	1719	1810
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1694	0	1861	0	1719	1810
Link Speed (mph)	45		45			45
Link Distance (ft)	1019		981			450
Travel Time (s)	15.4		14.9			6.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	5%	5%
Adj. Flow (vph)	4	4	760	4	9	1242
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	764	0	9	1242
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.8%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	684	4	8	1118
Future Vol, veh/h	4	4	684	4	8	1118
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	-	-	-	90	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	5	5
Mvmt Flow	4	4	760	4	9	1242

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2022	762	0	0	764	0
Stage 1	762	-	-	-	-	-
Stage 2	1260	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.15	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.245	-
Pot Cap-1 Maneuver	64	405	-	-	836	-
Stage 1	461	-	-	-	-	-
Stage 2	267	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	63	405	-	-	836	-
Mov Cap-2 Maneuver	63	-	-	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	267	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.9	0	0.1
HCM LOS	E		

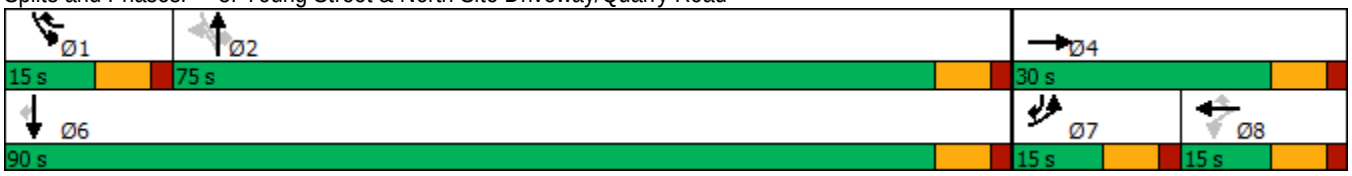
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	109	836	-
HCM Lane V/C Ratio	-	-	0.082	0.011	-
HCM Control Delay (s)	-	-	40.9	9.4	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	4	125	43	4	88	58	429	27	135	628	364
Future Volume (vph)	165	4	125	43	4	88	58	429	27	135	628	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	275		0	0		250	100		100	525		100
Storage Lanes	1		0	0		1	1		1	1		1
Taper Length (ft)	100			25			100			100		
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
Frt		0.854				0.850			0.850			0.850
Flt Protected	0.950				0.956		0.950			0.950		
Satd. Flow (prot)	1770	1591	0	0	1734	1538	1770	1827	1553	1719	1810	1583
Flt Permitted	0.950				0.644		0.405			0.260		
Satd. Flow (perm)	1770	1591	0	0	1168	1538	754	1827	1553	470	1810	1583
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)						100			164			404
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		703			1124			1108			981	
Travel Time (s)		19.2			17.0			16.8			14.9	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.92	0.92	0.92	0.92	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	2%	5%	2%	4%	4%	5%	5%	2%
Adj. Flow (vph)	183	4	139	47	4	96	64	466	29	147	683	404
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	143	0	0	51	96	64	466	29	147	683	404
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1	0	1	1	0
Detector Template						Right						
Leading Detector (ft)	50	50		50	50	20	50	206	0	50	206	0
Trailing Detector (ft)	0	0		0	0	0	0	200	0	0	200	0
Detector 1 Position(ft)	0	0		0	0	0	0	200	0	0	200	0
Detector 1 Size(ft)	50	50		50	50	20	50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm	D.P+P	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases				8		8	2		2	2		6
Detector Phase	7	4		8	8	1	2	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0	12.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0		14.0	14.0	14.0	19.0	19.0	19.0	14.0	19.0	14.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	15.0	30.0		15.0	15.0	15.0	75.0	75.0	75.0	15.0	90.0	15.0
Total Split (%)	12.5%	25.0%		12.5%	12.5%	12.5%	62.5%	62.5%	62.5%	12.5%	75.0%	12.5%
Maximum Green (s)	8.0	23.0		8.0	8.0	8.0	68.0	68.0	68.0	8.0	83.0	8.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0	7.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	None	Min	None
Act Effct Green (s)	10.7	18.5			10.0	18.0	23.8	23.8	21.7	33.9	39.1	57.7
Actuated g/C Ratio	0.16	0.27			0.15	0.26	0.35	0.35	0.32	0.50	0.57	0.85
v/c Ratio	0.66	0.33			0.30	0.20	0.24	0.73	0.05	0.35	0.66	0.29
Control Delay	45.6	23.2			36.5	5.9	19.8	27.8	0.1	10.6	14.7	0.9
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	23.2			36.5	5.9	19.8	27.8	0.1	10.6	14.7	0.9
LOS	D	C			D	A	B	C	A	B	B	A
Approach Delay		35.8			16.5			25.4			9.7	
Approach LOS		D			B			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 68.1			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 17.8		Intersection LOS: B	
Intersection Capacity Utilization 74.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Young Street & North Site Driveway/Quarry Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	4	8	20	4	81	4	457	13	80	621	21
Future Volume (vph)	11	4	8	20	4	81	4	457	13	80	621	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		255	50		350	350		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frt		0.951				0.850			0.850		0.995	
Flt Protected		0.977			0.960		0.950			0.950		
Satd. Flow (prot)	0	1731	0	0	1788	1583	1770	1863	1583	1770	1853	0
Flt Permitted		0.977			0.960		0.950			0.950		
Satd. Flow (perm)	0	1731	0	0	1788	1583	1770	1863	1583	1770	1853	0
Link Speed (mph)		25			10			45			45	
Link Distance (ft)		435			672			1734			1092	
Travel Time (s)		11.9			45.8			26.3			16.5	
Peak Hour Factor	0.90	0.90	0.90	0.94	0.90	0.94	0.90	0.94	0.94	0.94	0.94	0.90
Adj. Flow (vph)	12	4	9	21	4	86	4	486	14	85	661	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	25	86	4	486	14	85	684	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.3%		ICU Level of Service B	
Analysis Period (min) 15			

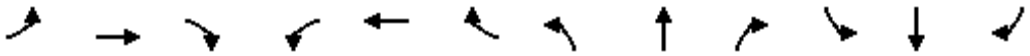
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	4	8	20	4	81	4	457	13	80	621	21
Future Vol, veh/h	11	4	8	20	4	81	4	457	13	80	621	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	-	-	-	255	50	-	350	350	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	94	90	94	90	94	94	94	94	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	4	9	21	4	86	4	486	14	85	661	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1382	1337	673	1343	1348	486	684	0	-	486	0	0
Stage 1	843	843	-	494	494	-	-	-	-	-	-	-
Stage 2	539	494	-	849	854	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	121	153	455	129	151	581	909	-	0	1077	-	-
Stage 1	358	380	-	557	546	-	-	-	0	-	-	-
Stage 2	527	546	-	356	375	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	94	140	455	116	138	581	909	-	-	1077	-	-
Mov Cap-2 Maneuver	94	140	-	116	138	-	-	-	-	-	-	-
Stage 1	357	350	-	555	544	-	-	-	-	-	-	-
Stage 2	443	544	-	317	345	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.1	19.4	0.1	1
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	909	-	141	119	581	1077	-	-
HCM Lane V/C Ratio	0.005	-	0.181	0.216	0.148	0.079	-	-
HCM Control Delay (s)	9	-	36.1	43.4	12.3	8.6	-	-
HCM Lane LOS	A	-	E	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.6	0.8	0.5	0.3	-	-

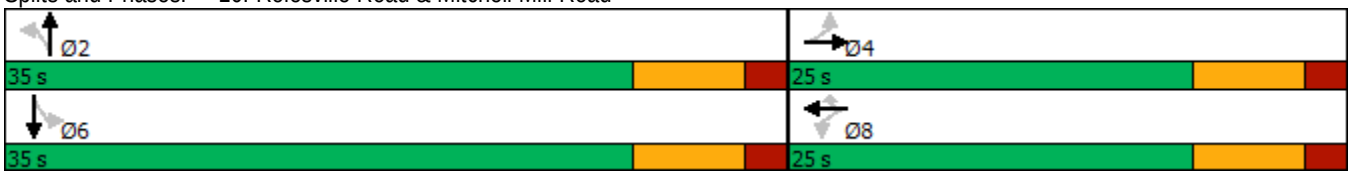


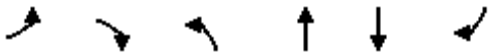
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	116	8	15	44	17	8	342	46	15	316	149
Future Volume (vph)	53	116	8	15	44	17	8	342	46	15	316	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		285	0		0	0		0
Storage Lanes	0		0	0		1	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
Frt		0.994				0.850		0.984			0.958	
Flt Protected		0.984			0.987			0.999			0.998	
Satd. Flow (prot)	0	1804	0	0	1839	1583	0	1796	0	0	1747	0
Flt Permitted		0.869			0.883			0.987			0.980	
Satd. Flow (perm)	0	1593	0	0	1645	1583	0	1774	0	0	1715	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1099			1044			1039			2518	
Travel Time (s)		16.7			15.8			15.7			38.2	
Peak Hour Factor	0.80	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	66	129	9	17	49	19	9	380	51	17	351	166
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	204	0	0	66	19	0	440	0	0	534	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	0	1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	50		20	50	0	20	76		20	76	
Trailing Detector (ft)	0	0		0	0	0	0	70		0	70	
Detector 1 Position(ft)	0	0		0	0	0	0	70		0	70	
Detector 1 Size(ft)	20	50		20	50	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	25.0	25.0		25.0	25.0	25.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	25.0	25.0		25.0	25.0	25.0	35.0	35.0		35.0	35.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%	41.7%	58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	18.0	18.0		18.0	18.0	18.0	28.0	28.0		28.0	28.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	-2.0		-2.0			-2.0	
Total Lost Time (s)		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	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Act Effct Green (s)		13.4			13.4	13.4		23.3			23.3	
Actuated g/C Ratio		0.29			0.29	0.29		0.50			0.50	
v/c Ratio		0.45			0.14	0.04		0.50			0.63	
Control Delay		17.3			13.5	12.9		11.0			13.4	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		17.3			13.5	12.9		11.0			13.4	
LOS		B			B	B		B			B	
Approach Delay		17.3			13.3			11.0			13.4	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 47			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Rolesville Road & Mitchell Mill Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	86	51	450	694	108
Future Volume (vph)	64	86	51	450	694	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125	0	100			100
Storage Lanes	1	1	1			1
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Link Speed (mph)	25			45	45	
Link Distance (ft)	532			1092	1108	
Travel Time (s)	14.5			16.5	16.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	71	96	57	500	771	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	96	57	500	771	120
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	64	86	51	450	694	108
Future Vol, veh/h	64	86	51	450	694	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	125	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	96	57	500	771	120

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1385	771	891	0	-	0
Stage 1	771	-	-	-	-	-
Stage 2	614	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	158	400	761	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	146	400	761	-	-	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	422	-	-	-	-	-
Stage 2	540	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.4	1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	761	-	146	400	-	-
HCM Lane V/C Ratio	0.074	-	0.487	0.239	-	-
HCM Control Delay (s)	10.1	-	51.1	16.8	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.3	0.9	-	-

Appendix M:
SimTraffic Queuing Reports

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	R	R
Maximum Queue (ft)	355	374	256	53	162	109
Average Queue (ft)	121	139	23	19	81	41
95th Queue (ft)	228	247	137	48	126	82
Link Distance (ft)	256	256		309	1163	
Upstream Blk Time (%)	1	2	0			
Queuing Penalty (veh)	10	17	0			
Storage Bay Dist (ft)			225			85
Storage Blk Time (%)		4			5	1
Queuing Penalty (veh)		10			12	2

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	94	83	177	115	55	140
Average Queue (ft)	33	31	33	71	35	57
95th Queue (ft)	68	64	132	109	52	106
Link Distance (ft)	279	279		372		275
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			225		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	180	138	107
Average Queue (ft)	73	50	81
95th Queue (ft)	137	108	104
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			47
Queuing Penalty (veh)			173
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	101	53	93
Average Queue (ft)	10	10	49
95th Queue (ft)	49	40	91
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			15
Queuing Penalty (veh)			47
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	94	31
Average Queue (ft)	36	11
95th Queue (ft)	67	35
Link Distance (ft)	2277	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		180
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	29
Average Queue (ft)	7	9
95th Queue (ft)	28	31
Link Distance (ft)	597	188
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Young Street & Century Farm Road

Movement	WB
Directions Served	LR
Maximum Queue (ft)	27
Average Queue (ft)	8
95th Queue (ft)	27
Link Distance (ft)	982
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Young Street & Quarry Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	331	74	22	79
Average Queue (ft)	83	21	1	41
95th Queue (ft)	275	53	10	79
Link Distance (ft)	1063		1024	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		250		525
Storage Blk Time (%)	13			
Queuing Penalty (veh)	22			

Intersection: 9: Young Street & Rolesville High School Driveway

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	268	140	116
Average Queue (ft)	68	62	43
95th Queue (ft)	172	116	93
Link Distance (ft)	637		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		255	350
Storage Blk Time (%)	1		
Queuing Penalty (veh)	2		

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	94	136	188	218
Average Queue (ft)	45	53	32	79
95th Queue (ft)	75	109	99	166
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	213
Average Queue (ft)	59
95th Queue (ft)	164
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	86
Average Queue (ft)	16
95th Queue (ft)	53
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement	WB	WB
Directions Served	T	T
Maximum Queue (ft)	64	66
Average Queue (ft)	2	2
95th Queue (ft)	22	22
Link Distance (ft)	411	411
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	1	

Network Summary

Network wide Queuing Penalty: 295

Intersection: 8: Young Street & Quarry Road

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	58	87	72
Average Queue (ft)	10	20	17
95th Queue (ft)	31	54	48
Link Distance (ft)	1063		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		250	525
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Young Street & Rolesville High School Driveway

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	182	231	53
Average Queue (ft)	56	66	8
95th Queue (ft)	117	140	36
Link Distance (ft)	637		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		255	350
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	NB	SB	SB
Directions Served	T	T	T	R	R
Maximum Queue (ft)	92	77	97	118	68
Average Queue (ft)	48	45	51	64	26
95th Queue (ft)	76	81	91	98	61
Link Distance (ft)	256	256	309	1163	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					85
Storage Blk Time (%)				2	0
Queuing Penalty (veh)				3	0

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	T
Maximum Queue (ft)	206	185	120	53	96
Average Queue (ft)	71	81	68	27	31
95th Queue (ft)	129	143	107	52	69
Link Distance (ft)	279	279	372		275
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				250	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	28	53	88
Average Queue (ft)	3	5	51
95th Queue (ft)	17	29	91
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			10
Queuing Penalty (veh)			27
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	91	130	88
Average Queue (ft)	43	32	58
95th Queue (ft)	90	84	84
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			32
Queuing Penalty (veh)			93
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	69	55
Average Queue (ft)	24	12
95th Queue (ft)	53	40
Link Distance (ft)	2277	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		180
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	28	49	29
Average Queue (ft)	1	11	12
95th Queue (ft)	9	38	36
Link Distance (ft)	2277	597	188
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Young Street & Century Farm Road

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	27	30
Average Queue (ft)	6	1
95th Queue (ft)	24	10
Link Distance (ft)	982	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		90
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Young Street & Quarry Road

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	38	38	55
Average Queue (ft)	9	7	19
95th Queue (ft)	23	22	50
Link Distance (ft)	1063		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		250	525
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Young Street & Rolesville High School Driveway

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	31	101	31
Average Queue (ft)	12	41	13
95th Queue (ft)	37	74	37
Link Distance (ft)	637		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		255	350
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	76	45	67	97
Average Queue (ft)	38	19	18	43
95th Queue (ft)	58	33	50	73
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	67
Average Queue (ft)	5
95th Queue (ft)	28
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	103
Average Queue (ft)	21
95th Queue (ft)	61
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 123

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	R	R
Maximum Queue (ft)	379	374	256	53	159	113
Average Queue (ft)	178	205	62	21	90	47
95th Queue (ft)	332	351	242	51	138	81
Link Distance (ft)	256	256		309	1163	
Upstream Blk Time (%)	7	8	1			
Queuing Penalty (veh)	55	66	0			
Storage Bay Dist (ft)			225			85
Storage Blk Time (%)		12	0		6	1
Queuing Penalty (veh)		36	0		16	2

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	96	76	176	157	87	139
Average Queue (ft)	36	48	19	88	45	63
95th Queue (ft)	69	75	101	133	71	118
Link Distance (ft)	279	279		372		275
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			225		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	255	184	107
Average Queue (ft)	140	115	91
95th Queue (ft)	229	192	104
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			54
Queuing Penalty (veh)			275
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	58	90	88
Average Queue (ft)	7	18	58
95th Queue (ft)	26	61	80
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			18
Queuing Penalty (veh)			62
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	72	31
Average Queue (ft)	35	5
95th Queue (ft)	60	24
Link Distance (ft)	2277	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		180
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	25	53	29
Average Queue (ft)	1	7	6
95th Queue (ft)	8	30	26
Link Distance (ft)	644	597	188
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Young Street & Century Farm Road

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	29	31
Average Queue (ft)	5	3
95th Queue (ft)	22	18
Link Distance (ft)	982	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		90
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Young Street & Quarry Road

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	L
Maximum Queue (ft)	150	131	56	140
Average Queue (ft)	42	35	8	68
95th Queue (ft)	134	91	36	117
Link Distance (ft)	1063		1024	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		250		525
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Young Street & Rolesville High School Driveway

Movement	WB	WB	NB	SB
Directions Served	L	R	T	L
Maximum Queue (ft)	652	355	22	178
Average Queue (ft)	154	120	1	51
95th Queue (ft)	485	323	7	110
Link Distance (ft)	637		1700	
Upstream Blk Time (%)	6			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		255		350
Storage Blk Time (%)	21			
Queuing Penalty (veh)	53			

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	140	231	132	500
Average Queue (ft)	56	73	55	186
95th Queue (ft)	103	164	115	388
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	266
Average Queue (ft)	113
95th Queue (ft)	229
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	65
Average Queue (ft)	17
95th Queue (ft)	51
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement	WB	WB
Directions Served	T	T
Maximum Queue (ft)	113	159
Average Queue (ft)	11	12
95th Queue (ft)	57	74
Link Distance (ft)	411	411
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	3	

Network Summary

Network wide Queuing Penalty: 570

Intersection: 8: Young Street & Quarry Road

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	119	151	74
Average Queue (ft)	22	41	24
95th Queue (ft)	62	107	60
Link Distance (ft)	1063		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		250	525
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Young Street & Rolesville High School Driveway

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	209	158	71
Average Queue (ft)	56	68	14
95th Queue (ft)	133	131	53
Link Distance (ft)	637		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		255	350
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	R	R
Maximum Queue (ft)	107	96	111	164	135	68
Average Queue (ft)	45	58	4	51	72	27
95th Queue (ft)	83	92	37	99	115	57
Link Distance (ft)	256	256		309	1163	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			225			85
Storage Blk Time (%)					4	0
Queuing Penalty (veh)					9	0

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	222	246	225	118	72	96
Average Queue (ft)	100	109	21	82	34	52
95th Queue (ft)	168	175	124	124	61	93
Link Distance (ft)	279	279		372		275
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			225		250	
Storage Blk Time (%)		1	0			
Queuing Penalty (veh)		4	0			

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	76	52	108
Average Queue (ft)	24	12	63
95th Queue (ft)	66	41	100
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			20
Queuing Penalty (veh)			74
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	140	153	88
Average Queue (ft)	65	55	66
95th Queue (ft)	135	122	85
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			41
Queuing Penalty (veh)			146
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	76	31
Average Queue (ft)	25	7
95th Queue (ft)	56	29
Link Distance (ft)	2277	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		180
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	25	67	29
Average Queue (ft)	1	16	8
95th Queue (ft)	9	50	29
Link Distance (ft)	644	597	188
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Young Street & Century Farm Road

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	52	31
Average Queue (ft)	5	5
95th Queue (ft)	25	23
Link Distance (ft)	982	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		90
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Young Street & Quarry Road

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	79	29	53
Average Queue (ft)	20	8	27
95th Queue (ft)	57	25	53
Link Distance (ft)	1063		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		250	525
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Young Street & Rolesville High School Driveway

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	52	71	54
Average Queue (ft)	12	37	19
95th Queue (ft)	38	62	52
Link Distance (ft)	637		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		255	350
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	76	44	145	162
Average Queue (ft)	47	21	43	57
95th Queue (ft)	72	34	97	106
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	70
Average Queue (ft)	13
95th Queue (ft)	46
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	207
Average Queue (ft)	59
95th Queue (ft)	143
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 234

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	R	R
Maximum Queue (ft)	255	266	256	95	266	231
Average Queue (ft)	132	182	35	33	160	97
95th Queue (ft)	206	257	177	78	225	198
Link Distance (ft)	256	256		369	1163	
Upstream Blk Time (%)	0	0	0			
Queuing Penalty (veh)	0	2	0			
Storage Bay Dist (ft)			225			85
Storage Blk Time (%)		2			36	5
Queuing Penalty (veh)		8			106	15

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	94	120	312	386	373	182
Average Queue (ft)	51	60	170	317	201	81
95th Queue (ft)	93	111	317	451	441	158
Link Distance (ft)	341	341		373		275
Upstream Blk Time (%)				5	0	
Queuing Penalty (veh)				43	0	
Storage Bay Dist (ft)			400		250	
Storage Blk Time (%)				39	0	
Queuing Penalty (veh)				180	0	

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	321	271	107
Average Queue (ft)	211	197	92
95th Queue (ft)	290	263	103
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			57
Queuing Penalty (veh)			404
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	29	152	70
Average Queue (ft)	7	13	67
95th Queue (ft)	27	66	79
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			32
Queuing Penalty (veh)			128
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	93	52
Average Queue (ft)	41	10
95th Queue (ft)	68	36
Link Distance (ft)	2277	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		180
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	29	56	29
Average Queue (ft)	1	30	11
95th Queue (ft)	10	51	34
Link Distance (ft)	2277	597	188
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Young Street & Century Farm Road

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	52	689	31
Average Queue (ft)	16	151	2
95th Queue (ft)	43	488	15
Link Distance (ft)	982	895	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			90
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	265	122	101	168	14	496	200	254	458	200
Average Queue (ft)	110	51	29	67	4	300	82	114	170	43
95th Queue (ft)	214	105	77	127	14	483	221	211	342	147
Link Distance (ft)		680	1053			1013			895	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			250	100		100	525		100
Storage Blk Time (%)	0					37			12	
Queuing Penalty (veh)	0					29			45	

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	76	653	355	27	124
Average Queue (ft)	29	243	123	2	43
95th Queue (ft)	65	675	323	13	85
Link Distance (ft)	648	638			
Upstream Blk Time (%)		23			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			255	50	350
Storage Blk Time (%)		30	0		
Queuing Penalty (veh)		67	0		

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	196	185	428	372
Average Queue (ft)	61	80	87	247
95th Queue (ft)	121	136	257	352
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Young Street & Central Site Driveway

Movement	EB	EB	NB
Directions Served	L	R	L
Maximum Queue (ft)	110	115	72
Average Queue (ft)	45	28	11
95th Queue (ft)	84	72	41
Link Distance (ft)		647	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		100
Storage Blk Time (%)	1	0	
Queuing Penalty (veh)	1	0	

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	456
Average Queue (ft)	270
95th Queue (ft)	408
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	133
Average Queue (ft)	59
95th Queue (ft)	121
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 1030

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	200	190	141	154	199	404	28	118	309	200
Average Queue (ft)	80	40	37	37	41	165	9	25	115	48
95th Queue (ft)	152	104	97	96	119	320	30	64	246	136
Link Distance (ft)		535	1053			1021			923	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	200			250	100		100	525		100
Storage Blk Time (%)	0	0			4	20			8	
Queuing Penalty (veh)	0	0			33	20			28	

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	52	690	355	30	45
Average Queue (ft)	15	182	132	4	9
95th Queue (ft)	44	579	340	20	34
Link Distance (ft)	583	638			
Upstream Blk Time (%)		13			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			255	50	350
Storage Blk Time (%)		23	1	0	
Queuing Penalty (veh)		70	1	0	

Network Summary

Network wide Queuing Penalty: 153

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	NB	SB	SB
Directions Served	T	T	T	R	R
Maximum Queue (ft)	119	147	160	289	235
Average Queue (ft)	56	76	75	162	82
95th Queue (ft)	115	138	130	269	214
Link Distance (ft)	256	256	372	1163	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					85
Storage Blk Time (%)				28	0
Queuing Penalty (veh)				72	0

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	187	376	342	376	179	182
Average Queue (ft)	108	146	189	219	68	83
95th Queue (ft)	183	280	373	339	128	165
Link Distance (ft)	348	348		372		275
Upstream Blk Time (%)		0	0	0		
Queuing Penalty (veh)		3	0	3		
Storage Bay Dist (ft)			400		250	
Storage Blk Time (%)		0	0	10		
Queuing Penalty (veh)		3	1	34		

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	161	50	96
Average Queue (ft)	23	3	81
95th Queue (ft)	83	21	106
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			30
Queuing Penalty (veh)			163
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	250	300	106
Average Queue (ft)	109	149	75
95th Queue (ft)	208	285	91
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			61
Queuing Penalty (veh)			270
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	96	53
Average Queue (ft)	42	21
95th Queue (ft)	77	48
Link Distance (ft)	2277	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		180
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	25	50	77	29
Average Queue (ft)	1	4	39	9
95th Queue (ft)	9	23	72	31
Link Distance (ft)	644	2277	597	188
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Young Street & Century Farm Road

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	71	179	31
Average Queue (ft)	9	6	5
95th Queue (ft)	35	60	23
Link Distance (ft)	982	895	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			90
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	291	314	75	88	87	235	40	103	267	200
Average Queue (ft)	114	56	19	23	24	129	15	44	146	60
95th Queue (ft)	237	149	51	55	59	207	37	76	234	155
Link Distance (ft)		640	1053			1012			895	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			250	100		100	525		100
Storage Blk Time (%)	1	0			0	14			13	0
Queuing Penalty (veh)	2	0			0	11			61	0

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	SB
Directions Served	LTR	LT	R	L
Maximum Queue (ft)	30	50	82	50
Average Queue (ft)	16	17	41	17
95th Queue (ft)	40	42	69	42
Link Distance (ft)	399	638		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			255	350
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	114	44	155	281
Average Queue (ft)	60	20	61	121
95th Queue (ft)	97	43	117	200
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Young Street & Central Site Driveway

Movement	EB	EB	NB	NB
Directions Served	L	R	L	T
Maximum Queue (ft)	73	67	76	91
Average Queue (ft)	34	27	20	3
95th Queue (ft)	62	52	52	30
Link Distance (ft)		482		1018
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	125		100	
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	156
Average Queue (ft)	56
95th Queue (ft)	137
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	298
Average Queue (ft)	134
95th Queue (ft)	241
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 625

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	R	R
Maximum Queue (ft)	205	292	256	74	247	235
Average Queue (ft)	134	166	17	34	169	93
95th Queue (ft)	201	242	123	69	240	186
Link Distance (ft)	256	256		309	1163	
Upstream Blk Time (%)		0	0			
Queuing Penalty (veh)		2	0			
Storage Bay Dist (ft)			225			85
Storage Blk Time (%)		1			35	4
Queuing Penalty (veh)		4			99	10

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	116	372	279	386	372	184
Average Queue (ft)	42	80	78	225	75	87
95th Queue (ft)	95	224	251	371	215	169
Link Distance (ft)	279	279		372		275
Upstream Blk Time (%)		1	1	1	0	
Queuing Penalty (veh)		3	0	10	0	
Storage Bay Dist (ft)			225		250	
Storage Blk Time (%)		0	2	11		
Queuing Penalty (veh)		1	4	51		

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	470	386	115
Average Queue (ft)	224	182	93
95th Queue (ft)	361	320	107
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			55
Queuing Penalty (veh)			376
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	29	73	88
Average Queue (ft)	2	6	64
95th Queue (ft)	13	33	90
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			24
Queuing Penalty (veh)			95
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	73	54
Average Queue (ft)	44	20
95th Queue (ft)	68	50
Link Distance (ft)	2277	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		180
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	53	29
Average Queue (ft)	1	28	9
95th Queue (ft)	10	43	30
Link Distance (ft)	2277	597	188
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Young Street & Century Farm Road

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	50	288	31
Average Queue (ft)	7	25	6
95th Queue (ft)	27	138	25
Link Distance (ft)	982	896	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			90
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	T	R
Maximum Queue (ft)	251	138	115	180	199	440	195	258	200
Average Queue (ft)	154	42	26	46	15	305	90	140	30
95th Queue (ft)	257	96	74	114	98	426	170	235	126
Link Distance (ft)		680	1064			1011		896	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	275			250	100		525		100
Storage Blk Time (%)						43		10	
Queuing Penalty (veh)						2		29	

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	74	653	355	28	174
Average Queue (ft)	26	272	147	1	50
95th Queue (ft)	64	699	364	9	111
Link Distance (ft)	648	638			
Upstream Blk Time (%)		25			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			255	50	350
Storage Blk Time (%)		34			
Queuing Penalty (veh)		76			

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	160	128	486	445
Average Queue (ft)	66	65	89	196
95th Queue (ft)	125	113	284	333
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Young Street & Central Site Driveway

Movement	EB	EB	NB
Directions Served	L	R	L
Maximum Queue (ft)	67	79	28
Average Queue (ft)	28	28	8
95th Queue (ft)	61	54	28
Link Distance (ft)		647	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		100
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	384
Average Queue (ft)	226
95th Queue (ft)	366
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	166
Average Queue (ft)	56
95th Queue (ft)	129
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 762

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	T	R
Maximum Queue (ft)	151	56	131	126	199	992	87	186	61
Average Queue (ft)	46	14	26	30	11	247	34	72	27
95th Queue (ft)	104	39	77	88	72	645	79	142	51
Link Distance (ft)		535	1064			1019		924	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	275			250	100		525		100
Storage Blk Time (%)						22		2	
Queuing Penalty (veh)						3		8	

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	52	653	355	28	46
Average Queue (ft)	10	161	131	1	8
95th Queue (ft)	35	524	344	9	31
Link Distance (ft)	583	638			
Upstream Blk Time (%)		10			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			255	50	350
Storage Blk Time (%)		15	12		
Queuing Penalty (veh)		44	24		

Network Summary

Network wide Queuing Penalty: 78

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	NB	SB	SB
Directions Served	T	T	T	R	R
Maximum Queue (ft)	92	158	200	227	82
Average Queue (ft)	52	73	74	113	38
95th Queue (ft)	93	125	151	185	69
Link Distance (ft)	256	256	309	1163	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					85
Storage Blk Time (%)				15	0
Queuing Penalty (veh)				37	0

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	170	252	272	372	364	203
Average Queue (ft)	95	115	145	221	61	100
95th Queue (ft)	150	186	291	339	162	165
Link Distance (ft)	279	279		372		275
Upstream Blk Time (%)			0	0	0	
Queuing Penalty (veh)			0	1	0	
Storage Bay Dist (ft)			225		250	
Storage Blk Time (%)		1	2	9		
Queuing Penalty (veh)		5	8	27		

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	76	88	93
Average Queue (ft)	20	7	83
95th Queue (ft)	59	27	100
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			29
Queuing Penalty (veh)			142
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	173	301	106
Average Queue (ft)	69	104	74
95th Queue (ft)	155	254	89
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			63
Queuing Penalty (veh)			272
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	66	52	41
Average Queue (ft)	34	21	1
95th Queue (ft)	57	50	14
Link Distance (ft)	2277		926
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		180	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	53	67	29
Average Queue (ft)	6	26	13
95th Queue (ft)	28	57	37
Link Distance (ft)	2277	597	188
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Young Street & Century Farm Road

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	52	56	31
Average Queue (ft)	10	2	4
95th Queue (ft)	36	19	21
Link Distance (ft)	982	896	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			90
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	T	R
Maximum Queue (ft)	105	101	53	40	200	318	91	262	200
Average Queue (ft)	41	23	8	4	21	138	42	125	55
95th Queue (ft)	77	61	29	22	103	257	75	217	153
Link Distance (ft)		640	1064			1010		896	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	275			250	100		525		100
Storage Blk Time (%)						13		9	
Queuing Penalty (veh)						2		32	

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	30	52	56	24	46
Average Queue (ft)	13	23	36	1	19
95th Queue (ft)	36	49	60	8	36
Link Distance (ft)	399	638			
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			255	50	350
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	138	45	221	240
Average Queue (ft)	65	20	56	111
95th Queue (ft)	112	38	132	192
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Young Street & Central Site Driveway

Movement	EB	EB	NB
Directions Served	L	R	L
Maximum Queue (ft)	48	59	47
Average Queue (ft)	27	21	14
95th Queue (ft)	51	42	37
Link Distance (ft)		482	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		100
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	153
Average Queue (ft)	47
95th Queue (ft)	105
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	252
Average Queue (ft)	115
95th Queue (ft)	220
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 527

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	WB	NB	SB	SB
Directions Served	T	T	R	T	R	R
Maximum Queue (ft)	211	240	250	74	379	235
Average Queue (ft)	117	171	17	26	215	144
95th Queue (ft)	195	242	121	61	329	258
Link Distance (ft)	256	256		369	1163	
Upstream Blk Time (%)		0	0			
Queuing Penalty (veh)		0	0			
Storage Bay Dist (ft)			225			85
Storage Blk Time (%)		1			49	7
Queuing Penalty (veh)		2			142	19

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	107	450	341	391	372	180
Average Queue (ft)	37	64	149	300	130	73
95th Queue (ft)	81	193	317	438	328	135
Link Distance (ft)	341	341		373		275
Upstream Blk Time (%)		1	1	2	0	
Queuing Penalty (veh)		4	0	23	0	
Storage Bay Dist (ft)			400		250	
Storage Blk Time (%)		1	1	31		
Queuing Penalty (veh)		7	2	148		

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	390	409	125
Average Queue (ft)	201	171	95
95th Queue (ft)	306	297	112
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			58
Queuing Penalty (veh)			419
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	89	146	88
Average Queue (ft)	4	16	69
95th Queue (ft)	31	66	84
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			34
Queuing Penalty (veh)			136
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	94	51
Average Queue (ft)	46	19
95th Queue (ft)	78	46
Link Distance (ft)	2277	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		180
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	53	29
Average Queue (ft)	24	8
95th Queue (ft)	46	30
Link Distance (ft)	597	188
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Young Street & Century Farm Road

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	30	330	27
Average Queue (ft)	7	59	1
95th Queue (ft)	26	192	9
Link Distance (ft)	982	895	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			90
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	358	79	109	146	200	423	200	295	364	200
Average Queue (ft)	122	35	26	59	13	274	104	98	149	29
95th Queue (ft)	252	72	74	131	73	374	257	211	279	106
Link Distance (ft)		680	1053			1013			895	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			250	100		100	525		100
Storage Blk Time (%)	3					40			12	
Queuing Penalty (veh)	3					32			48	

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	T	L
Maximum Queue (ft)	74	657	355	22	223
Average Queue (ft)	21	300	150	0	63
95th Queue (ft)	54	764	370	0	133
Link Distance (ft)	648	638		1705	
Upstream Blk Time (%)		29			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			255		350
Storage Blk Time (%)		39	8		
Queuing Penalty (veh)		87	7		

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	115	194	664	310
Average Queue (ft)	65	70	162	216
95th Queue (ft)	105	131	460	301
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Young Street & Central Site Driveway

Movement	EB	EB	NB
Directions Served	L	R	L
Maximum Queue (ft)	140	63	51
Average Queue (ft)	51	27	12
95th Queue (ft)	106	50	37
Link Distance (ft)		647	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		100
Storage Blk Time (%)	1		
Queuing Penalty (veh)	1		

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement	EB
Directions Served	T
Maximum Queue (ft)	48
Average Queue (ft)	2
95th Queue (ft)	16
Link Distance (ft)	325
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	610
Average Queue (ft)	324
95th Queue (ft)	546
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	3
Queuing Penalty (veh)	8

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	188
Average Queue (ft)	85
95th Queue (ft)	170
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 1088

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	163	90	160	132	191	389	51	201	258	200
Average Queue (ft)	73	38	37	39	46	163	11	38	94	47
95th Queue (ft)	135	80	100	105	121	286	38	104	198	135
Link Distance (ft)		535	1053			1021			923	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			250	100		100	525		100
Storage Blk Time (%)					3	18			6	
Queuing Penalty (veh)					23	19			21	

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	52	653	355	29	45
Average Queue (ft)	12	211	141	4	12
95th Queue (ft)	40	621	365	19	35
Link Distance (ft)	583	638			
Upstream Blk Time (%)		18			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			255	50	350
Storage Blk Time (%)		30	0		
Queuing Penalty (veh)		96	1		

Network Summary

Network wide Queuing Penalty: 160

Intersection: 1: Young Street & US 401 Bypass (WB)

Movement	WB	WB	NB	SB	SB
Directions Served	T	T	T	R	R
Maximum Queue (ft)	122	190	206	283	235
Average Queue (ft)	48	76	87	137	58
95th Queue (ft)	94	132	151	225	157
Link Distance (ft)	256	256	372	1163	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					85
Storage Blk Time (%)				27	0
Queuing Penalty (veh)				70	0

Intersection: 2: Young Street & US 401 Bypass (EB)

Movement	EB	EB	EB	NB	NB	SB
Directions Served	T	T	R	R	R	T
Maximum Queue (ft)	164	372	347	388	371	160
Average Queue (ft)	96	158	228	233	75	97
95th Queue (ft)	144	288	397	375	216	162
Link Distance (ft)	348	348		372		275
Upstream Blk Time (%)		0	1	4	0	
Queuing Penalty (veh)		3	0	30	0	
Storage Bay Dist (ft)			400		250	
Storage Blk Time (%)		0	1	15		
Queuing Penalty (veh)		3	4	53		

Intersection: 3: U-Turn East of Young & US 401 Bypass (WB)

Movement	WB	WB	NB
Directions Served	T	T	L
Maximum Queue (ft)	146	149	125
Average Queue (ft)	32	22	85
95th Queue (ft)	102	87	110
Link Distance (ft)	982	982	37
Upstream Blk Time (%)			33
Queuing Penalty (veh)			178
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: US 401 Bypass (EB) & U-Turn West of Young

Movement	EB	EB	SB
Directions Served	T	T	L
Maximum Queue (ft)	212	361	106
Average Queue (ft)	98	147	71
95th Queue (ft)	160	243	84
Link Distance (ft)	1066	1066	16
Upstream Blk Time (%)			66
Queuing Penalty (veh)			291
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Young Street & Virginia Water Drive

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	112	53	56
Average Queue (ft)	38	23	2
95th Queue (ft)	77	54	19
Link Distance (ft)	2277		926
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		180	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Genovesa Drive & Virginia Water Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	23	30	115	29
Average Queue (ft)	1	3	34	11
95th Queue (ft)	8	18	70	34
Link Distance (ft)	644	2277	597	188
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Young Street & Century Farm Road

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	25	486	31
Average Queue (ft)	6	42	3
95th Queue (ft)	22	212	18
Link Distance (ft)	982	895	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			90
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Young Street & North Site Driveway/Quarry Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	211	166	57	69	199	321	28	87	289	200
Average Queue (ft)	90	51	24	16	29	141	9	41	138	67
95th Queue (ft)	166	109	49	47	90	256	29	79	228	170
Link Distance (ft)		640	1053			1012			895	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275			250	100		100	525		100
Storage Blk Time (%)						15			11	
Queuing Penalty (veh)						13			56	

Intersection: 9: Young Street & South Site Driveway/Rolesville High School Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	LTR	LT	R	L	L
Maximum Queue (ft)	51	52	82	25	106
Average Queue (ft)	18	24	42	1	24
95th Queue (ft)	44	48	71	8	62
Link Distance (ft)	399	638			
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			255	50	350
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 10: Rolesville Road & Mitchell Mill Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LT	LTR	LTR
Maximum Queue (ft)	116	68	216	204
Average Queue (ft)	59	22	81	123
95th Queue (ft)	103	50	178	192
Link Distance (ft)	1036	976	960	2462
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: Young Street & Central Site Driveway

Movement	EB	EB	NB
Directions Served	L	R	L
Maximum Queue (ft)	88	83	70
Average Queue (ft)	31	25	27
95th Queue (ft)	67	53	56
Link Distance (ft)		482	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	125		100
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 22: US 401 Bypass (EB) & Young Street

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: US 401 Bypass (EB) & U-Turn East of Young

Movement	EB
Directions Served	L
Maximum Queue (ft)	180
Average Queue (ft)	64
95th Queue (ft)	155
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 44: U-Turn West of Young & US 401 Bypass (WB)

Movement	WB
Directions Served	L
Maximum Queue (ft)	279
Average Queue (ft)	141
95th Queue (ft)	247
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	375
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 111: Young Street & US 401 Bypass (WB)

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

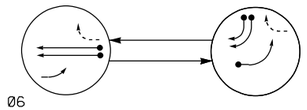
Network Summary

Network wide Queuing Penalty: 700

Appendix N:
Signal Plans and Timing Data

PROJECT REFERENCE NO.	SHEET NO.
R-2814B TOD	Sig. 3.0

DEFAULT PHASING DIAGRAM



EV PREEMPT PHASES

(Medium Priority)

ALTERNATE PHASING DIAGRAM

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø6	PHASE Ø3	PHASE EVP 3	PHASE FLASH
31	~~FY~~	←	←	~~Y~~
32, 33	R	→	→	R
61, 62	G	R	R	Y

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø6	PHASE Ø3	PHASE EVP 3	PHASE FLASH
31	~~R~~	←	←	~~Y~~
32, 33	R	→	→	R
61, 62	G	R	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.

OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
3A	6X40	0	2-4-2	-	3	Y	Y	-	-	15*	-	-
3B	6X40	0	2-4-2	-	3	Y	Y	-	-	15	-	-
3C	6X40	0	2-4-2	-	3	Y	Y	-	-	15	-	-
6A/S9	6X6	420	EXIST	-	6	Y	Y	-	-	-	Y	-
6B/S10	6X6	420	EXIST	-	6	Y	Y	-	-	-	Y	-
S11	6X6	200	EXIST	-	-	-	-	-	-	-	Y	-
S12	6X6	100	EXIST	-	-	-	-	-	-	-	Y	-
S13	6X6	100	EXIST	-	-	-	-	-	-	-	Y	-

*Disable Delay during Alternate Phasing operation.

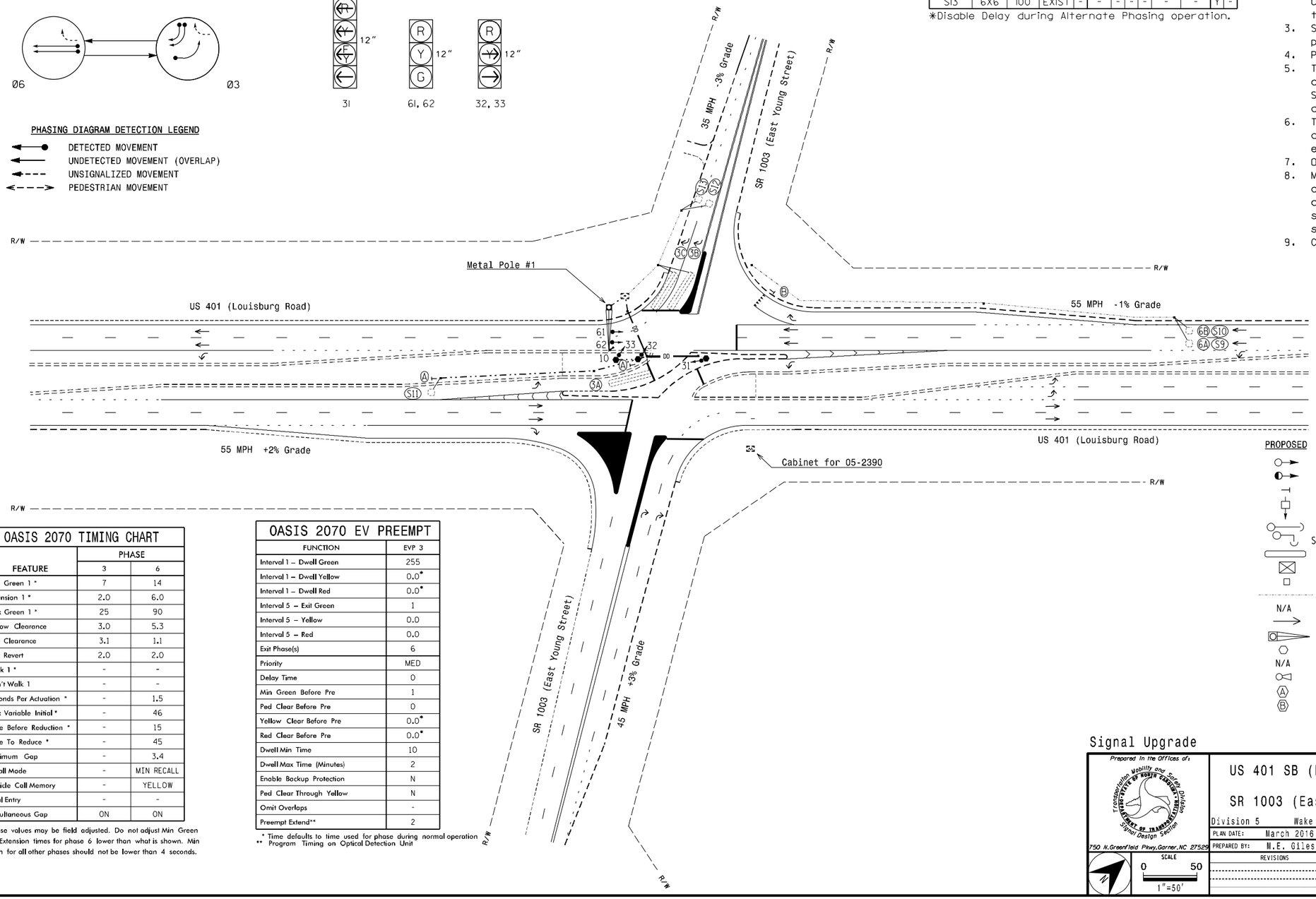
2 Phase
Fully Actuated
w/ EV Preemption
US 401 Bypass (Rolesville) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Pavement markings are existing.
5. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
6. The Division Traffic Engineer will determine the hours of use for each phasing plan.
7. Optical detector 10 calls EVP 3.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Closed loop system data:
   Controller Asset #: 2236.

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT



OASIS 2070 TIMING CHART

FEATURE	PHASE 3	PHASE 6
Min Green 1 *	7	14
Extension 1 *	2.0	6.0
Max Green 1 *	25	90
Yellow Clearance	3.0	5.3
Red Clearance	3.1	1.1
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	-	1.5
Max Variable Initial *	-	46
Time Before Reduction *	-	15
Time To Reduce *	-	45
Minimum Gap	-	3.4
Recall Mode	-	MIN RECALL
Vehicle Call Memory	-	YELLOW
Dual Entry	-	-
Simultaneous Gap	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phase 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

OASIS 2070 EV PREEMPT

FUNCTION	EVP 3
Interval 1 – Dwell Green	255
Interval 1 – Dwell Yellow	0.0*
Interval 1 – Dwell Red	0.0*
Interval 5 – Exit Green	1
Interval 5 – Yellow	0.0
Interval 5 – Red	0.0
Exit Phase(s)	6
Priority	MED
Delay Time	0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	10
Dwell Max Time (Minutes)	2
Enable Backup Protection	N
Ped Clear Through Yellow	N
Omit Overlaps	-
Preempt Extend**	2

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
□	Pedestrian Signal Head With Push Button & Sign	■
○	Signal Pole with Guy	●
○	Signal Pole with Sidewalk Guy	●
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
·····	2-in Underground Conduit	·····
N/A	Right of Way	———
→	Directional Arrow	→
○	Metal Pole with Mastarm	○
⬡	Type II Signal Pedestal	⬢
N/A	Directional Drill	— DD —
○	Optical Detector	●
Ⓐ	No U-Turn Sign (R3-4)	Ⓐ
Ⓑ	"YIELD" Sign (R1-2)	Ⓑ

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared In the Offices of:
Traffic Engineering Branch, Traffic Operations Mobility and Safety Division, NC Department of Transportation, Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 401 SB (Louisburg Road)
at
SR 1003 (East Young Street)

Division 5 Wake County Rolesville

PLAN DATE: March 2016 REVIEWED BY:
PREPARED BY: M.E. Giles REVIEWED BY:

SCALE 0 50 1"=50'

REVISIONS | INIT. | DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 026486 ROBERT J. ZIEMBA
4/6/2016
DATE

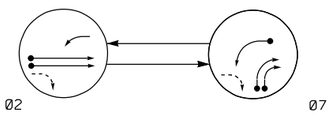
SIG. INVENTORY NO. 05-2236

PROJECT REFERENCE NO.	SHEET NO.
R-2814B TOD	Sig. 2.0

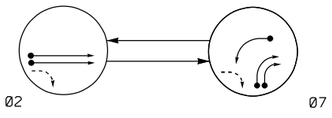
2 Phase Fully Actuated w/ EV Preemption US 401 Bypass (Rolesville) CLS

EV PREEMPT PHASES
(Medium Priority)

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø2	PHASE Ø7	PHASE EVP 3	PHASE FLASH
21, 22	G	R	R	Y
71	~~F Y~~	←	←	~~Y~~
72, 73	R	→	→	R

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø2	PHASE Ø7	PHASE EVP 3	PHASE FLASH
21, 22	G	R	R	Y
71	~~R~~	←	←	~~Y~~
72, 73	R	→	→	R

SIGNAL FACE I.D.

All Heads L.E.D.

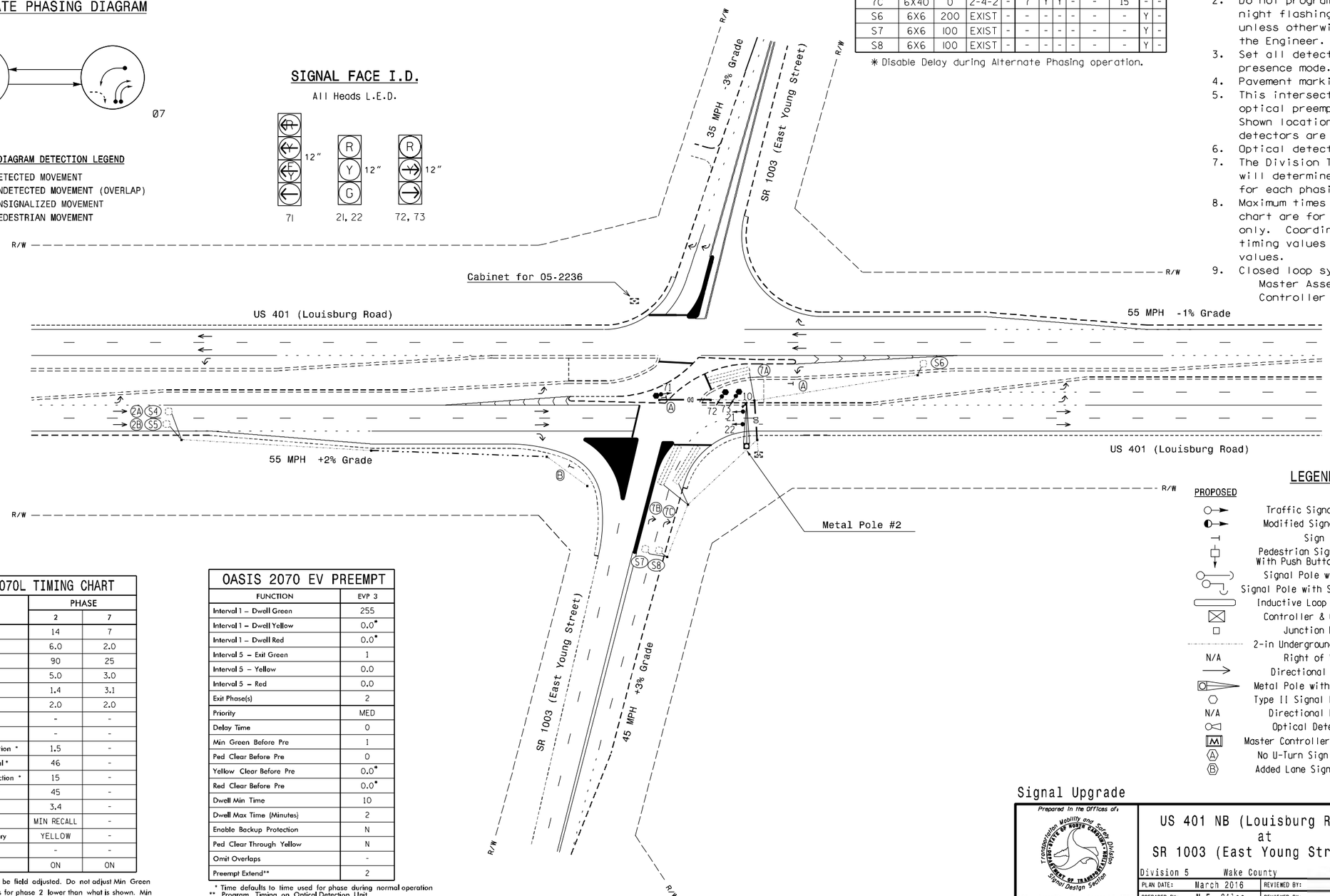
OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS: LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING: PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A/S4	6X6	420	EXIST	-	2	Y	Y	-	-	-	Y	-
2B/S5	6X6	420	EXIST	-	2	Y	Y	-	-	-	Y	-
7A	6X40	0	2-4-2	-	7	Y	Y	-	-	15*	-	-
7B	6X40	0	2-4-2	-	7	Y	Y	-	-	15	-	-
7C	6X40	0	2-4-2	-	7	Y	Y	-	-	15	-	-
S6	6X6	200	EXIST	-	-	-	-	-	-	-	Y	-
S7	6X6	100	EXIST	-	-	-	-	-	-	-	Y	-
S8	6X6	100	EXIST	-	-	-	-	-	-	-	Y	-

* Disable Delay during Alternate Phasing operation.

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Pavement markings are existing.
5. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
6. Optical detector 10 calls EVP 3.
7. The Division Traffic Engineer will determine the hours of use for each phasing plan.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Closed loop system data:
   Master Asset #: 10552.
   Controller Asset #: 2390.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Metal Pole with Mastarm	
	Type II Signal Pedestal	
N/A	Directional Drill	00
	Optical Detector	
M	Master Controller & Cabinet	M
A	No U-Turn Sign (R3-4)	A
B	Added Lane Sign (W4-3)	B

OASIS 2070L TIMING CHART

FEATURE	PHASE 2	PHASE 7
Min Green 1 *	14	7
Extension 1 *	6.0	2.0
Max Green 1 *	90	25
Yellow Clearance	5.0	3.0
Red Clearance	1.4	3.1
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	1.5	-
Max Variable Initial *	46	-
Time Before Reduction *	15	-
Time To Reduce *	45	-
Minimum Gap	3.4	-
Recall Mode	MIN RECALL	-
Vehicle Call Memory	YELLOW	-
Dual Entry	-	-
Simultaneous Gap	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phase 2 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

OASIS 2070 EV PREEMPT

FUNCTION	EVP 3
Interval 1 – Dwell Green	255
Interval 1 – Dwell Yellow	0.0*
Interval 1 – Dwell Red	0.0*
Interval 5 – Exit Green	1
Interval 5 – Yellow	0.0
Interval 5 – Red	0.0
Exit Phase(s)	2
Priority	MED
Delay Time	0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	10
Dwell Max Time (Minutes)	2
Enable Backup Protection	N
Ped Clear Through Yellow	N
Omit Overlaps	-
Preempt Extend**	2

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared In the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 401 NB (Louisburg Road) at SR 1003 (East Young Street)

Division 5 Wake County Rolesville

PLAN DATE: March 2016 REVIEWED BY:
PREPARED BY: M.E. Giles REVIEWED BY:

REVISIONS | UNIT. | DATE

SCALE 0 50 1"=50'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA
4/6/2016
DATE

SIG. INVENTORY NO. 05-2390

05-APR-2016 15:44
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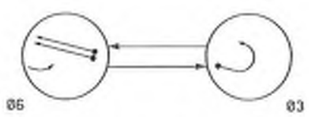
rziemba

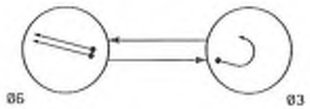
PROJECT REFERENCE NO.	SHEET NO.
R-2814B TDD	Sig. 4.0

EV PREEMPT PHASES
(Median Priority)

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

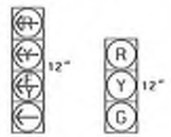
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

DEFAULT PHASING TABLE OF OPERATION					
SIGNAL FACE	PHASE Ø6	Ø3	EVP 3	FLASH
31, 32	↓	←	←	↓
61, 62	G	R	R	Y

ALTERNATE PHASING TABLE OF OPERATION					
SIGNAL FACE	PHASE Ø6	Ø3	EVP 3	FLASH
31, 32	R	←	←	↓
61, 62	G	R	R	Y

SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070L LOOP & DETECTOR INSTALLATION CHART													
INDUCTIVE LOOPS					DETECTOR PROGRAMMING								
LOOP	SIZE (ft)	DISTANCE FROM STOPBAR (ft)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
3A	6X40	0	2-4-2	-	DISCONNECT							
3B	6X40	0	2-4-2	-	3	Y	Y	-	-	15*	-	Y
3C	6X6	0	EXIST	-	3	Y	Y	-	-	15*	-	Y
6A	6X6	420	EXIST	-	6	Y	Y	-	-	-	-	Y
6B	6X6	420	EXIST	-	6	Y	Y	-	-	-	-	Y

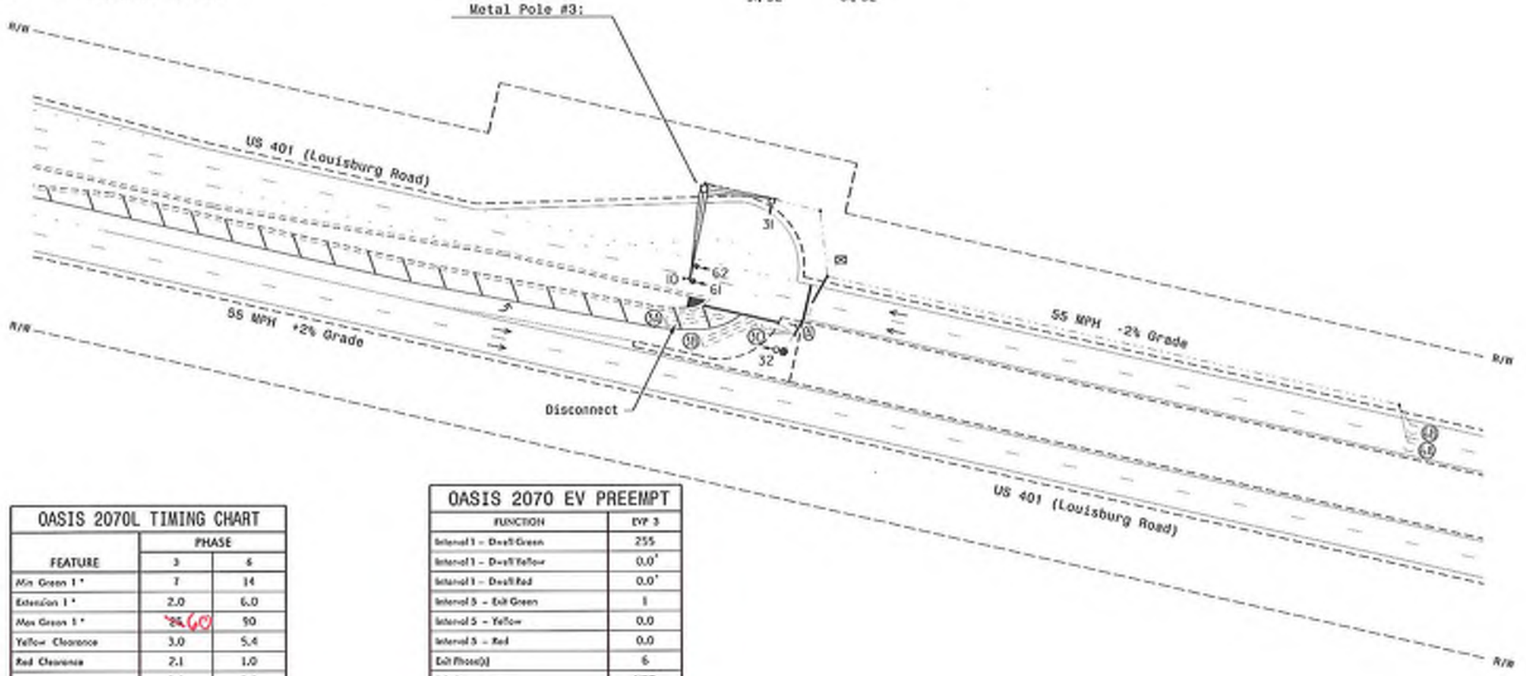
*Disable Delay during Alternate Phasing operation.

Field notes 1/25/19

2 Phase
Fully Actuated
w/ EV Preemption
US 401 Bypass (Rolesville) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. Disconnect existing loop 3A.
6. Pavement markings are existing unless otherwise shown.
7. Remove existing "LEFT ON GREEN ARROW ONLY" (R10-5) signs.
8. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
9. Optical detector 10 calls EVP 3.
10. The Division Traffic Engineer will determine the hours of use for each phasing plan.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
12. Closed loop system data: Controller Asset #: 2391.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Metal Pole with Mastarm	
	Type II Signal Pedestal	
N/A	Directional Drill	
	Optical Detector	
Ⓐ	No Left Turn Sign (R3-2)	Ⓐ

OASIS 2070L TIMING CHART		
	PHASE	
FEATURE	3	6
Min Green 1 *	7	14
Extension 1 *	2.0	6.0
Max Green 1 *	25.0	90
Yellow Clearance	3.0	5.4
Red Clearance	2.1	1.0
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	-	1.5
Max Variable Initial *	-	46
Time Before Reduction *	-	15
Time To Reduce *	-	45
Minimum Gap	-	3.4
Recall Mode	-	MIN RECALL
Vehicle Call Memory	-	YELLOW
Dual Entry	-	-
Simultaneous Gap	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phase 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

OASIS 2070 EV PREEMPT	
FUNCTION	EVP 3
Interval 1 - Dwell Green	255
Interval 1 - Dwell Yellow	0.0*
Interval 1 - Dwell Red	0.0*
Interval 3 - Exit Green	1
Interval 3 - Yellow	0.0
Interval 3 - Red	0.0
Exit Phase(s)	6
Priority	MED
Delay Time	0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	10
Dwell Max Time (Minutes)	2
Enable Backup Protection	N
Ped Clear Through Yellow	N
Omit Overlaps	-
Preempt Extend**	2

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:

150 Rowland Pkwy, Garner, NC 27529

US 401 SB (Louisburg Road) at U-Turn North of SR 1003 (Rolesville Road)

Division 5 Wake County Rolesville

PLAN DATE: March 2016 REVIEWED BY:

PREPARED BY: W.E. Giles REVIEWED BY:

REVISIONS | INIT. | DATE

SCALE 0 50 1"=50'

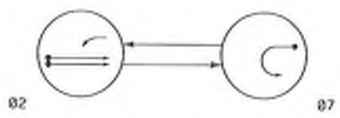
SEAL 026486 ENGINEER ROBERT J. BEARDEN NORTH CAROLINA PROFESSIONAL

Robert J. Bearden 8/8/2016
Signature Date

SIG. INVENTORY NO. 05-2391

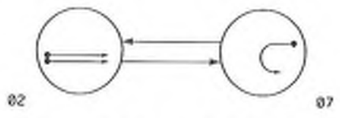
PROJECT REFERENCE NO.	SHEET NO.
R-2814B T03	Sig. 1.0

DEFAULT PHASING DIAGRAM



EV PREEMPT PHASES
(Medium Priority)

ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

DEFAULT PHASING TABLE OF OPERATION

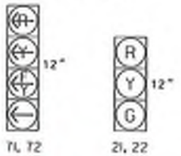
SIGNAL FACE	PHASE 02	PHASE 07	EVP 3	FLASH
21, 22	G	R	R	Y
71, 72	R	←	←	←

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE 02	PHASE 07	EVP 3	FLASH
21, 22	G	R	R	Y
71, 72	R	←	←	←

SIGNAL FACE I.D.

All Heads L.E.D.



FYA

OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A/S1	6X6	420	EXIST	-	2	Y	Y	-	-	-	Y	-
2B/S2	6X6	420	EXIST	-	2	Y	Y	-	-	-	Y	-
7A	6X40	0	2-4-2	-	7	Y	Y	-	-	15*	-	-
7B	6X40	0	2-4-2	-	7	Y	Y	-	-	15*	-	-
S3	6X6	200	EXIST	-	-	-	-	-	-	-	Y	-

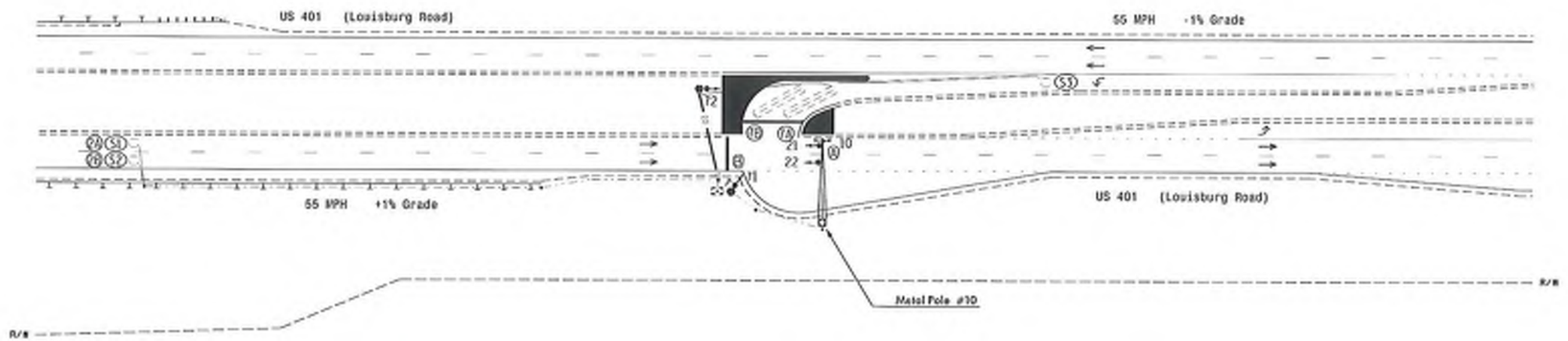
*Disable Delay during Alternate Phasing operation.

Field notes 1/25/19

2 Phase
Fully Actuated
w/ EV Preemption
US 401 Bypass (Rolesville) CLS

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated dated January 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Pavement markings are existing.
5. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
6. Optical detector 10 calls EVP 3.
7. The Division Traffic Engineer will determine the hours of use for each phasing plan.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Closed loop system data: Controller Asset #: 2425.



OASIS 2070L TIMING CHART

FEATURE	PHASE 2	PHASE 7
Min Green 1 *	14	7
Extension 1 *	6.0	2.0
Max Green 1 *	90	25
Yellow Clearance	5.2	3.0
Red Clearance	1.0	1.8
Red Revert	2.0	2.0
Walk 1 *	-	-
Don't Walk 1	-	-
Seconds Per Actuation *	1.5	-
Max Variable Initial *	45	-
Time Before Reduction *	15	-
Time To Reduce *	45	-
Minimum Gap	3.4	-
Recall Mode	MIN RECALL	-
Vehicle Call Memory	YELLOW	-
Dual Entry	-	-
Simultaneous Gap	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phase 2 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

OASIS 2070 EV PREEMPT

FUNCTION	EVP 3
Interval 1 - Dwell Green	255
Interval 1 - Dwell Yellow	0.0*
Interval 1 - Dwell Red	0.0*
Interval 5 - Exit Green	1
Interval 5 - Yellow	0.0
Interval 5 - Red	0.0
Exit Phase(s)	2
Priority	MED
Delay Time	0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	10
Dwell Max Time (Minutes)	2
Enable Backup Protection	N
Ped Clear through Yellow	N
Omit Overlaps	-
Preempt Extend**	2

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
	Right of Way	N/A
	Directional Arrow	
	Metal Pole with Mastarm	
N/A	Guardrail	
	Type II Signal Pedestal	
N/A	Directional Drill	
	Optical Detector	
	No Left Turn Sign (R3-2)	
	No Right Turn Sign (R3-1)	

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Offices of:
750 N.Greenfield Pkwy,Garner,NC 27529

US 401 NB (Louisburg Road)
at
U-Turn South of
SR 1003 (Rolesville Road)

Division 5 Wake County Rolesville

PLAN DATE: February 2018 REVIEWED BY:
PREPARED BY: W.E. Giles REVIEWED BY:

SCALE 0 50 1"=50'

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 026486 ROBERT J. ZIENKA
Robert J. Zienka 4/6/2018
SIGNATURE DATE

SIG. INVENTORY NO. 05-2425

Appendix O:
Signal Warrant Analyses

Young Street PUD

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: **Young Street at Quarry Road/Site Driveway** COUNT DATE: 29-Jan-19

INTERSECTION CONDITION: **Residential Phase Build-out**

MAJOR STREET: Young Street # OF APPROACH LANES: 1

MINOR STREET: Site Driveway/Quarry Road # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): Y

	MAJOR ST	HIGHEST HOUR MINOR ST	WARRANT 1, Condition A			WARRANT 1, Condition B			WARRANT 1, Combination Warrant						WARRANT 2	WARRANT 3
									CONDITION A			CONDITION B				
	BOTH APPROACHES	HIGHEST APPROACH	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →			350	105		525	53		280	84		420	42			
06:00 AM TO 07:00 AM	1,005	71	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
07:00 AM TO 08:00 AM	1,256	138	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
08:00 AM TO 09:00 AM	714	114	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
09:00 AM TO 10:00 AM	584	81	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
10:00 AM TO 11:00 AM	592	69	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
11:00 AM TO 12:00 PM	532	71	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
12:00 PM TO 01:00 PM	682	66	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
01:00 PM TO 02:00 PM	659	71	Y			Y	Y	**Y**	Y			Y	Y	**Y**		
02:00 PM TO 03:00 PM	965	74	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
03:00 PM TO 04:00 PM	933	79	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
04:00 PM TO 05:00 PM	1,168	79	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	**Y**
05:00 PM TO 06:00 PM	1,193	86	Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
06:00 PM TO 07:00 PM	807	64	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
07:00 PM TO 08:00 PM	459	61	Y				Y		Y			Y	Y	**Y**		
08:00 PM TO 09:00 PM	196	43											Y			
09:00 PM TO 10:00 PM	148	29														
	11,893	1,196			**2**			**13**			**3**			**14**	**8**	**3**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **SATISFIED**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **NOT SATISFIED**						4 HRS NEEDED **SATISFIED**	1 HR NEEDED **SATISFIED**

WARRANT 1 -- Eight-Hour Vehicular Volume Warrant

Condition A : Minimum Vehicular Volume

Condition B : Interruption of Continuous Traffic

Combination : Combination of Condition A and Condition B

WARRANT 2 -- Four-Hour Vehicular Volume Warrant

WARRANT 3 -- Peak Hour Warrant

Young Street PUD

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: **Young Street at Rolesville HS Driveway/Site Driveway** COUNT DATE: 29-Jan-19

INTERSECTION CONDITION: **Full Build-out**

MAJOR STREET: Young Street # OF APPROACH LANES: 1

MINOR STREET: Site Driveway/Rolesville HS Driveway # OF APPROACH LANES: 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): Y

	MAJOR ST	HIGHEST HOUR MINOR ST	WARRANT 1, Condition A			WARRANT 1, Condition B			WARRANT 1, Combination Warrant						WARRANT 2	WARRANT 3
									CONDITION A			CONDITION B				
	BOTH APPROACHES	HIGHEST APPROACH	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →			350	105		525	53		280	84		420	42			
06:00 AM TO 07:00 AM	792	21	Y			Y			Y			Y				
07:00 AM TO 08:00 AM	1,185	75	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	**Y**
08:00 AM TO 09:00 AM	737	17	Y			Y			Y			Y				
09:00 AM TO 10:00 AM	304	14							Y							
10:00 AM TO 11:00 AM																
11:00 AM TO 12:00 PM																
12:00 PM TO 01:00 PM																
01:00 PM TO 02:00 PM	712	19	Y			Y			Y			Y				
02:00 PM TO 03:00 PM	827	105	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	
03:00 PM TO 04:00 PM	990	24	Y			Y			Y			Y				
04:00 PM TO 05:00 PM	1,127	25	Y			Y			Y			Y				
05:00 PM TO 06:00 PM	1,189	23	Y			Y			Y			Y				
06:00 PM TO 07:00 PM																
07:00 PM TO 08:00 PM																
08:00 PM TO 09:00 PM																
09:00 PM TO 10:00 PM																
	7,863	323			**1**			**2**			**1**			**2**	**2**	**1**
			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **SATISFIED**

WARRANT 1 -- Eight-Hour Vehicular Volume Warrant

Condition A : Minimum Vehicular Volume

Condition B : Interruption of Continuous Traffic

Combination : Combination of Condition A and Condition B

WARRANT 2 -- Four-Hour Vehicular Volume Warrant

WARRANT 3 -- Peak Hour Warrant