APPENDIX A

Concept Plan

HBC | STREETWORKS DEVELOPMENT

ONE WESTFIELD PLACE DEVELOPMENT PROGRAM SUMMARY — Date: February 23, 2023

OVERALL PROGRAM SUMMARY

- Project Gross Area: 750,810 SF
  - Office Gross Area: 310,000 SF
  - Retail Gross Area: 27,410 SF
  - Residential Gross Area: 388,000 SF
  - Amenity Gross Area: 25,400 SF
- Residential Units: 205
  - Market-Rate: 172 (130 age-restricted, 42 non-restricted)
  - Affordable: 33 (24 age-restricted, 9 non-restricted)
- Private Parking Stalls: 1,144
  - Structured: 1,124
  - Surface: 20
- Public Parking Stalls: 762
  - Structured: 560
  - Surface: 202

WEST ZONE

- **L&T West Residential** | 6 Stories (Age-restricted to 55+)
  - Gross Area: 160,800 SF
  - Total Units: 80 (68 Market-Rate, 12 Affordable)
  - Structured Parking Stalls: 120 (Subgrade)
- **L&T East Residential** | 6 Stories (Age-restricted to 55+)
  - Gross Area: 124,310 SF
  - Total Units: 58 (49 Market-Rate, 9 Affordable)
  - Structured Parking Stalls: 87 (Subgrade)
- **North Ave Townhomes** | 3 Stories (Age-restricted to 55+)
  - Gross Area: 33,500 SF
  - Total Units: 16 (13 Market-Rate, 3 Affordable)
  - Structured Parking Stalls: 26 (Above-grade)
  - Surface Parking Stalls: 20
- **Clark/Ferris Townhomes** | 3 Stories
  - Gross Area: 33,500 SF
  - Total Units: 16 (13 Market-Rate, 3 Affordable)
  - Structured Parking Stalls: 26 (Above-grade)
- **L&T Office** | 4 Stories
  - Gross Area: 138,700 SF
    - Office: 100,000 SF
    - Retail: 13,300 SF
    - Amenity: 25,400 SF
  - Structured Parking Stalls: 250 (Subgrade)
  - Structured Parking Stalls: 73 (Subgrade; shared w/ L&T Residential)

NORTH ZONE

- **Loft Residential** | 5 Stories
  - Gross Area: 38,000 SF
    - Residential: 35,890 SF
    - Retail: 2,110 SF
  - Total Units: 35 (29 Market-Rate, 6 Affordable)
- **Public North Parking Garage** | 5 Stories
  - Structured Parking Stalls[1]: 352 (Above-grade)
- **Public Surface Parking**
  - North Side of Railroad: 68
  - North Town Square: 25

SOUTH ZONE

- **West Office** | 5 Stories
  - Gross Area: 95,350 SF
    - Office: 90,000 SF
    - Retail: 5,350 SF
  - Structured Parking Stalls: 232 (Subgrade)
- **East Office** | 5 Stories
  - Gross Area: 126,650 SF
    - Office: 120,000 SF
    - Retail: 6,650 SF
  - Structured Parking Stalls: 310 (Subgrade)
- **Public South Parking Garage** | 4 Stories
  - Structured Parking Stalls: 208 (Above-grade)
- **Public Surface Parking**
  - South Side of Railroad: 93
  - South Ave Street Parking: 16

Notes

1. 35 parking stalls within North Parking Garage will be reserved for the Loft Residential building through a license agreement with the Town of Westfield.


North Zone Multifamily Residential / Retail
North Public Garage*
Quimby Street*
Town Square*
Westfield Train Station
South Zone Office / Retail
Town Green*
South Public Garage*
Clark & Ferris Townhomes
North Avenue Townhomes
L&T Subzone West Multifamily Residential
L&T Subzone Adaptive Reuse Office / Retail / Amenity
L&T Subzone West Multifamily Residential

APPENDIX B

Data Collection

Kimley»Horn

DRAFT

Historical ADT

kimley-horn.com | 221 River Street, 9th Floor, Suite 9013, Hoboken, NJ 07030 | 609 681 2428

Central Avenue between Sussex Street and South Avenue

https://www.njtms.org/map/tms_reports/reports/DV03S_3-9-198_4-22-2019.pdf

	Apr-19
6:00	751
7:00	1,294
8:00	1,252
9:00	1,141
15:00	1,350
16:00	1,430
17:00	1,430
18:00	1,284

North Avenue between Central Avenue and Elmer Street

https://www.njtms.org/map/tms_reports/reports/DV03S_3-4-330_4-8-2019.pdf

	Apr-19
6:00	470
7:00	1,123
8:00	1,452
9:00	1,239
15:00	1,397
16:00	1,367
17:00	1,367
18:00	1,317

Central Avenue between Lenox Avenue and Quimby Street

https://www.njtms.org/map/tms_reports/reports/DV03S_3n5h717_4-8-2019.pdf

	Apr-19
6:00	350
7:00	932
8:00	1,035
9:00	1,037
15:00	1,198
16:00	1,234
17:00	1,313
18:00	1,217

Broad Street between Central Avenue and Mountain Avenue

https://www.njtms.org/map/tms_reports/reports/DV03S_3n5h716_4-8-2019.pdf

	Apr-19
6:00	902
7:00	1,901
8:00	1,900
9:00	1,636
15:00	1,790
16:00	1,894
17:00	1,949
18:00	1,794

	Summary of April 2019
6:00	2,473
7:00	5,251
8:00	5,639
9:00	5,054
15:00	5,735
16:00	5,924
17:00	6,059
18:00	5,611

Kimley»Horn

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Weekday Peak Period

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Prepared by National Data & Surveying Services

E Broad St/Rte 28 & N Ave W

Peak Hour Turning Movement Count

ID: 21-340072-001
City: Westfield

Day: Wednesday
Date: 11/17/2021

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

SOUTHBOUND (E Broad St/Rte 28)

AM	73	456	6	0	718	AM
NOON	0	0	0	0	0	NOON
PM	108	422	26	0	576	PM
	0.5	1	0.5	0		

EASTBOUND (N Ave W)

AM	NOON	PM	
692	0	780	
0	0	0	0
170	0	122	1
348	0	299	1
320	0	339	0
AM	NOON	PM	

WESTBOUND (N Ave W)

PM	NOON	AM	
6	0	5	0
436	0	409	2
199	0	197	0
0	0	0	0
448	0	465	
PM	NOON	AM	

CONTROL

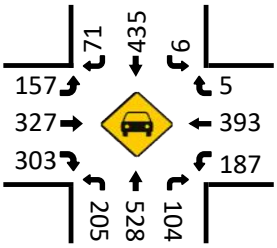
Signalized

TEV	2848 AM	0 NOON	2764 PM
PHF	0.92		0.96

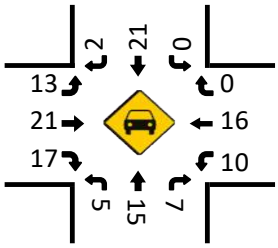
NORTHBOUND (E Broad St/Rte 28)

	0	1	1	1		
PM	960	0	236	448	123	PM
NOON	0	0	0	0	0	NOON
AM	973	0	210	543	111	AM

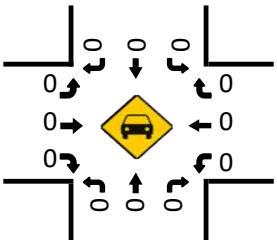
Cars (AM)



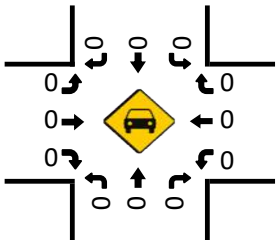
Total Trucks (AM)



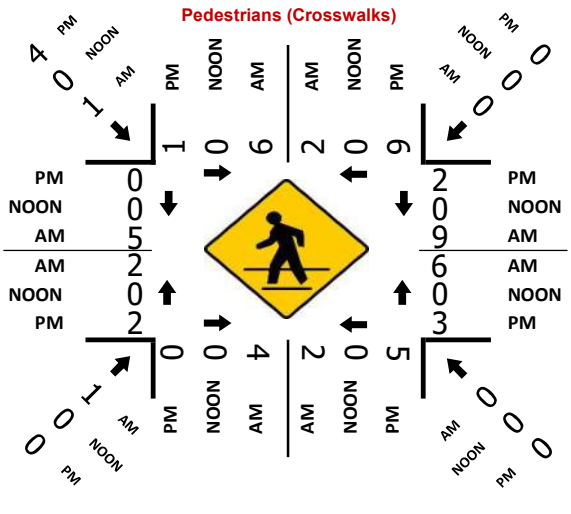
Cars (NOON)



Total Trucks (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
4
0
0
1
1
0
0
0
0
0
0
0
0
0
0
0

Prepared by National Data & Surveying Services

Rte 28 & S Ave W Roundabout

Peak Hour Turning Movement Count

ID: 21-340072-002
City: Westfield

Day: Wednesday
Date: 11/17/2021

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Rte 28)

AM	492	0	483	0	863 AM
NOON	0	0	0	0	0 NOON
PM	521	0	440	3	785 PM

EASTBOUND (S Ave W Roundabout)

AM	NOON	PM	
795	0	905	
2	0	2	0
552	0	474	0
439	0	391	1
0	0	0	1

WESTBOUND (S Ave W Roundabout)

PM	NOON	AM	
308	0	311	1
382	0	301	1
0	0	0	0
14	0	18	0
845	0	940	

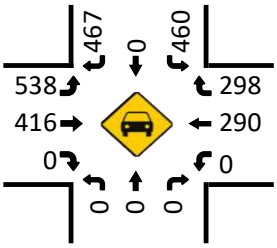
NORTHBOUND (Rte 28)

PM	0	0	0	0	0 PM
NOON	0	0	0	0	0 NOON
AM	0	0	0	0	0 AM

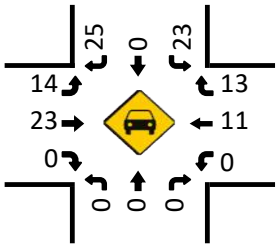
	1	1	0	0
	0	0	0	0

CONTROL			
3-Way Yield(SB/EB/WB)			
TEV	2598 AM	0 NOON	2535 PM
PHF	0.94		0.98

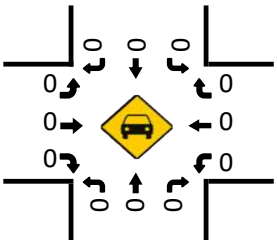
Cars (AM)



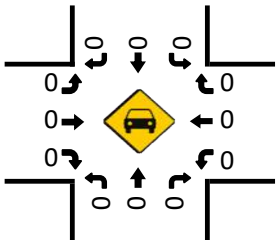
Total Trucks (AM)



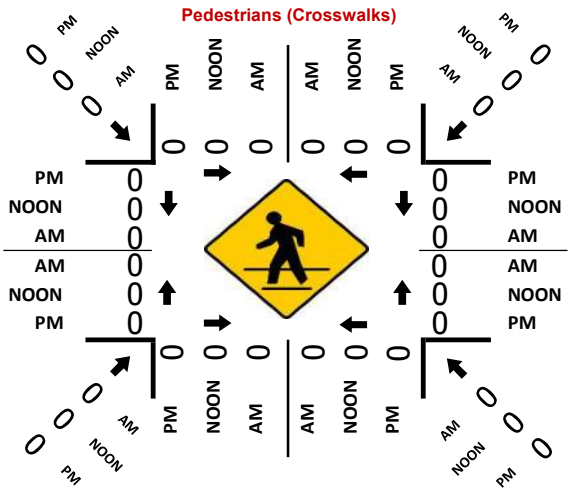
Cars (NOON)



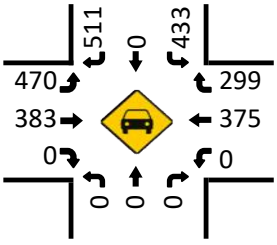
Total Trucks (NOON)



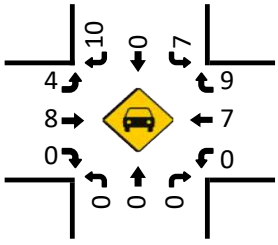
Pedestrians (Crosswalks)



Cars (PM)



Total Trucks (PM)



Kimley»Horn

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Saturday Midday Peak Period

kimley-horn.com | 221 River Street, 9th Floor, Suite 9013, Hoboken, NJ 07030 | 609 681 2428

3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Elm Street Northbound							Elm Street Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 11:00AM	11	23	17	0	0	**51**	24	25	27	20	0	0	**72**	31
11:15AM	14	35	14	0	0	**63**	30	33	20	19	0	1	**73**	32
11:30AM	13	25	13	0	2	**53**	27	31	22	10	0	1	**64**	43
11:45AM	9	36	25	0	0	**70**	30	27	33	18	0	1	**79**	30
Hourly Total	47	119	69	0	2	**237**	111	116	102	67	0	3	**288**	136
12:00PM	12	32	16	0	2	**62**	38	31	32	20	0	0	**83**	45
12:15PM	16	34	22	0	0	**72**	40	25	15	22	0	0	**62**	40
12:30PM	13	45	18	0	1	**77**	41	33	34	19	0	0	**86**	39
12:45PM	11	30	28	0	3	**72**	33	31	22	18	0	0	**71**	53
Hourly Total	52	141	84	0	6	**283**	152	120	103	79	0	0	**302**	177
1:00PM	13	35	22	0	2	**72**	45	29	24	23	0	0	**76**	53
1:15PM	10	29	25	0	2	**66**	45	26	20	11	0	3	**60**	48
1:30PM	11	37	39	0	1	**88**	39	25	23	21	0	0	**69**	54
1:45PM	10	32	21	0	0	**63**	51	25	16	19	0	0	**60**	58
Hourly Total	44	133	107	0	5	**289**	180	105	83	74	0	3	**265**	213
Total	143	393	260	0	13	**809**	443	341	288	220	0	6	**855**	526
% Approach	17.7%	48.6%	32.1%	0%	1.6%	**-**	-	39.9%	33.7%	25.7%	0%	0.7%	**-**	-
% Total	3.4%	9.5%	6.3%	0%	0.3%	**19.5%**	-	8.2%	6.9%	5.3%	0%	0.1%	**20.6%**	-
Lights	143	391	259	0	13	**806**	-	341	286	215	0	6	**848**	-
% Lights	100%	99.5%	99.6%	0%	100%	**99.6%**	-	100%	99.3%	97.7%	0%	100%	**99.2%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	2	1	0	0	**3**	-	0	2	5	0	0	**7**	-
% Buses and Single-Unit Trucks	0%	0.5%	0.4%	0%	0%	**0.4%**	-	0%	0.7%	2.3%	0%	0%	**0.8%**	-
Pedestrians	-	-	-	-	-	-	439	-	-	-	-	-	-	505
% Pedestrians	-	-	-	-	-	-	99.1%	-	-	-	-	-	-	96.0%
Bicycles on Crosswalk	-	-	-	-	-	-	4	-	-	-	-	-	-	21
% Bicycles on Crosswalk	-	-	-	-	-	-	0.9%	-	-	-	-	-	-	4.0%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

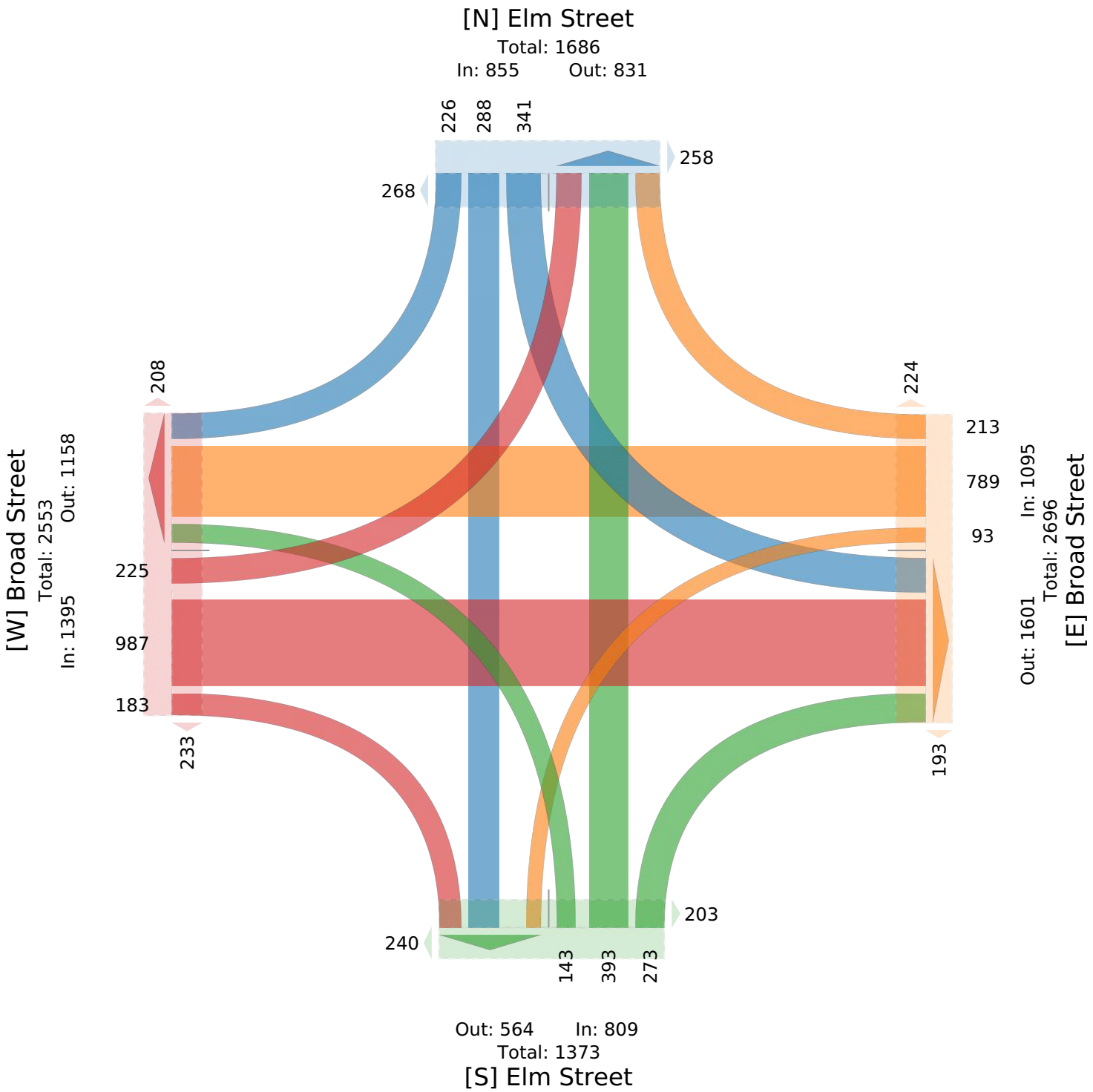
Leg Direction	Broad Street Eastbound							Broad Street Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:00AM	20	72	10	0	1	**103**	21	8	60	20	0	0	**88**	26	**314**
11:15AM	26	91	11	0	1	**129**	19	7	68	14	0	0	**89**	32	**354**
11:30AM	26	90	10	0	4	**130**	31	5	59	16	0	0	**80**	33	**327**
11:45AM	19	79	8	0	1	**107**	22	12	70	19	0	0	**101**	34	**357**
Hourly Total	91	332	39	0	7	**469**	93	32	257	69	0	0	**358**	125	**1352**
12:00PM	12	95	20	0	4	**131**	55	7	73	26	0	1	**107**	29	**383**
12:15PM	17	93	19	0	2	**131**	36	5	73	10	0	0	**88**	30	**353**
12:30PM	26	76	15	0	3	**120**	54	7	61	22	0	0	**90**	34	**373**
12:45PM	13	78	20	0	1	**112**	33	11	62	19	0	0	**92**	41	**347**
Hourly Total	68	342	74	0	10	**494**	178	30	269	77	0	1	**377**	134	**1456**
1:00PM	7	80	17	0	2	**106**	46	9	80	13	0	0	**102**	30	**356**
1:15PM	16	82	9	0	2	**109**	39	9	65	13	0	0	**87**	34	**322**
1:30PM	23	79	9	0	1	**112**	43	8	53	20	0	0	**81**	42	**350**
1:45PM	20	72	11	0	2	**105**	42	5	65	20	0	0	**90**	52	**318**
Hourly Total	66	313	46	0	7	**432**	170	31	263	66	0	0	**360**	158	**1346**
Total	225	987	159	0	24	**1395**	441	93	789	212	0	1	**1095**	417	**4154**
% Approach	16.1%	70.8%	11.4%	0%	1.7%	**-**	-	8.5%	72.1%	19.4%	0%	0.1%	**-**	-	**-**
% Total	5.4%	23.8%	3.8%	0%	0.6%	**33.6%**	-	2.2%	19.0%	5.1%	0%	0%	**26.4%**	-	**-**
Lights	220	976	157	0	24	**1377**	-	91	777	212	0	1	**1081**	-	4112
% Lights	97.8%	98.9%	98.7%	0%	100%	**98.7%**	-	97.8%	98.5%	100%	0%	100%	**98.7%**	-	99.0%
Articulated Trucks	0	1	0	0	0	**1**	-	1	3	0	0	0	**4**	-	5
% Articulated Trucks	0%	0.1%	0%	0%	0%	**0.1%**	-	1.1%	0.4%	0%	0%	0%	**0.4%**	-	0.1%
Buses and Single-Unit Trucks	5	10	2	0	0	**17**	-	1	9	0	0	0	**10**	-	37
% Buses and Single-Unit Trucks	2.2%	1.0%	1.3%	0%	0%	**1.2%**	-	1.1%	1.1%	0%	0%	0%	**0.9%**	-	0.9%
Pedestrians	-	-	-	-	-	-	436	-	-	-	-	-	-	402	
% Pedestrians	-	-	-	-	-	-	98.9%	-	-	-	-	-	-	96.4%	-
Bicycles on Crosswalk	-	-	-	-	-	-	5	-	-	-	-	-	-	15	
% Bicycles on Crosswalk	-	-	-	-	-	-	1.1%	-	-	-	-	-	-	3.6%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Elm Street Northbound							Elm Street Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 11:45AM	9	36	25	0	0	**70**	30	27	33	18	0	1	**79**	30
12:00PM	12	32	16	0	2	**62**	38	31	32	20	0	0	**83**	45
12:15PM	16	34	22	0	0	**72**	40	25	15	22	0	0	**62**	40
12:30PM	13	45	18	0	1	**77**	41	33	34	19	0	0	**86**	39
Total	50	147	81	0	3	**281**	149	116	114	79	0	1	**310**	154
% Approach	17.8%	52.3%	28.8%	0%	1.1%	**-**	-	37.4%	36.8%	25.5%	0%	0.3%	**-**	-
% Total	3.4%	10.0%	5.5%	0%	0.2%	**19.2%**	-	7.9%	7.8%	5.4%	0%	0.1%	**21.1%**	-
PHF	0.781	0.817	0.810	-	0.375	**0.912**	-	0.879	0.838	0.898	-	0.250	**0.901**	-
Lights	50	146	80	0	3	**279**	-	116	113	77	0	1	**307**	-
% Lights	100%	99.3%	98.8%	0%	100%	**99.3%**	-	100%	99.1%	97.5%	0%	100%	**99.0%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	1	1	0	0	**2**	-	0	1	2	0	0	**3**	-
% Buses and Single-Unit Trucks	0%	0.7%	1.2%	0%	0%	**0.7%**	-	0%	0.9%	2.5%	0%	0%	**1.0%**	-
Pedestrians	-	-	-	-	-	-	149	-	-	-	-	-	-	145
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	94.2%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	9
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	5.8%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Broad Street Eastbound							Broad Street Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:45AM	19	79	8	0	1	**107**	22	12	70	19	0	0	**101**	34	**357**
12:00PM	12	95	20	0	4	**131**	55	7	73	26	0	1	**107**	29	**383**
12:15PM	17	93	19	0	2	**131**	36	5	73	10	0	0	**88**	30	**353**
12:30PM	26	76	15	0	3	**120**	54	7	61	22	0	0	**90**	34	**373**
Total	74	343	62	0	10	**489**	167	31	277	77	0	1	**386**	127	**1466**
% Approach	15.1%	70.1%	12.7%	0%	2.0%	**-**	-	8.0%	71.8%	19.9%	0%	0.3%	**-**	-	**-**
% Total	5.0%	23.4%	4.2%	0%	0.7%	**33.4%**	-	2.1%	18.9%	5.3%	0%	0.1%	**26.3%**	-	**-**
PHF	0.712	0.903	0.775	-	0.625	**0.933**	-	0.646	0.949	0.740	-	0.250	**0.902**	-	0.957
Lights	72	339	62	0	10	**483**	-	31	273	77	0	1	**382**	-	1451
% Lights	97.3%	98.8%	100%	0%	100%	**98.8%**	-	100%	98.6%	100%	0%	100%	**99.0%**	-	99.0%
Articulated Trucks	0	0	0	0	0	**0**	-	0	1	0	0	0	**1**	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0.4%	0%	0%	0%	**0.3%**	-	0.1%
Buses and Single-Unit Trucks	2	4	0	0	0	**6**	-	0	3	0	0	0	**3**	-	14
% Buses and Single-Unit Trucks	2.7%	1.2%	0%	0%	0%	**1.2%**	-	0%	1.1%	0%	0%	0%	**0.8%**	-	1.0%
Pedestrians	-	-	-	-	-	-	167	-	-	-	-	-	-	122	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	96.1%	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	5	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	3.9%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
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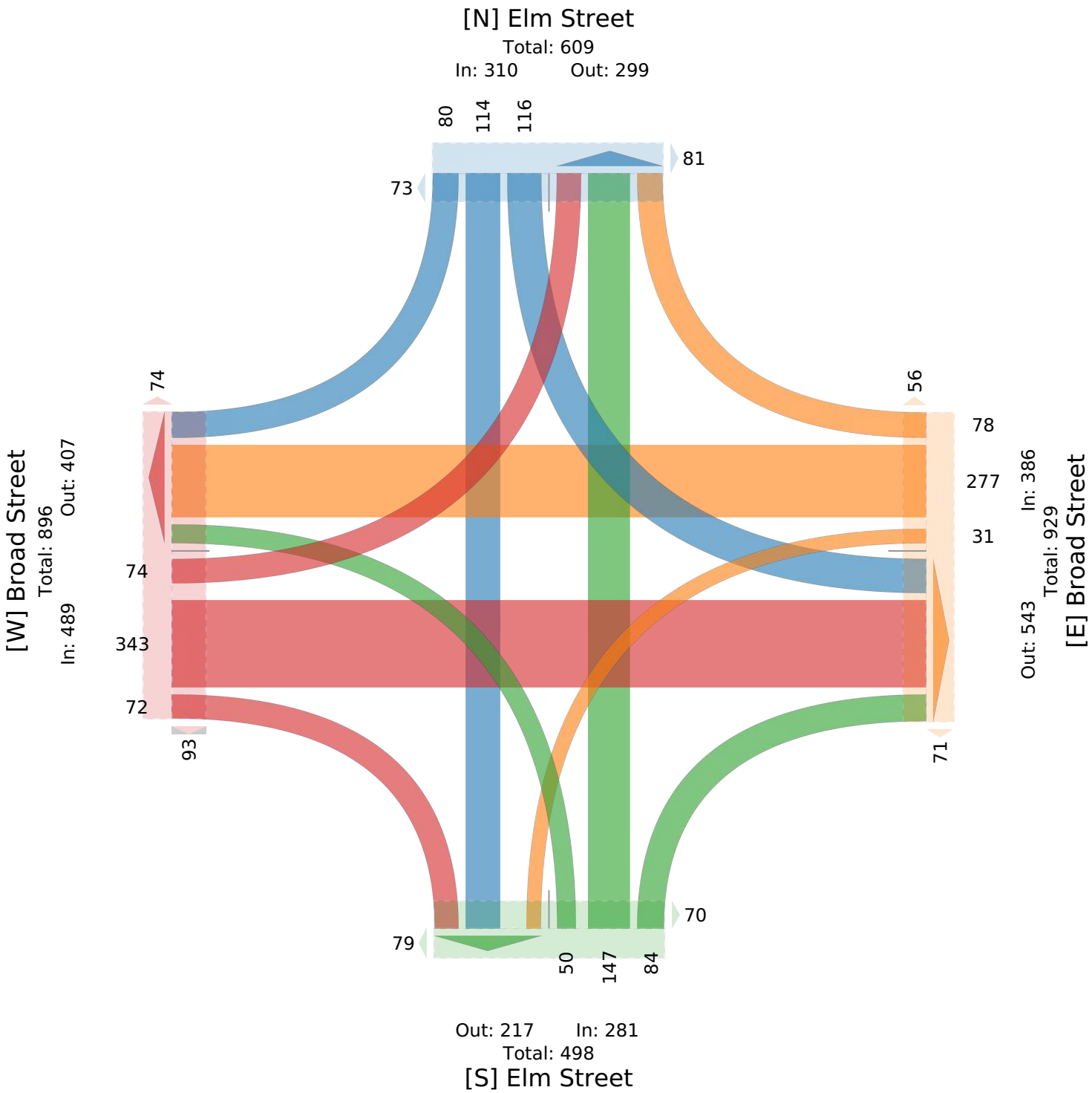


3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Elm Street Northbound							Elm Street Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 1:00PM	13	35	22	0	2	**72**	45	29	24	23	0	0	**76**	53
1:15PM	10	29	25	0	2	**66**	45	26	20	11	0	3	**60**	48
1:30PM	11	37	39	0	1	**88**	39	25	23	21	0	0	**69**	54
1:45PM	10	32	21	0	0	**63**	51	25	16	19	0	0	**60**	58
Total	44	133	107	0	5	**289**	180	105	83	74	0	3	**265**	213
% Approach	15.2%	46.0%	37.0%	0%	1.7%	**-**	-	39.6%	31.3%	27.9%	0%	1.1%	**-**	-
% Total	3.3%	9.9%	7.9%	0%	0.4%	**21.5%**	-	7.8%	6.2%	5.5%	0%	0.2%	**19.7%**	-
PHF	0.846	0.899	0.686	-	0.625	**0.821**	-	0.905	0.865	0.804	-	0.250	**0.872**	-
Lights	44	133	107	0	5	**289**	-	105	82	72	0	3	**262**	-
% Lights	100%	100%	100%	0%	100%	**100%**	-	100%	98.8%	97.3%	0%	100%	**98.9%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	0	0	0	0	**0**	-	0	1	2	0	0	**3**	-
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	1.2%	2.7%	0%	0%	**1.1%**	-
Pedestrians	-	-	-	-	-	-	176	-	-	-	-	-	-	208
% Pedestrians	-	-	-	-	-	-	97.8%	-	-	-	-	-	-	97.7%
Bicycles on Crosswalk	-	-	-	-	-	-	4	-	-	-	-	-	-	5
% Bicycles on Crosswalk	-	-	-	-	-	-	2.2%	-	-	-	-	-	-	2.3%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

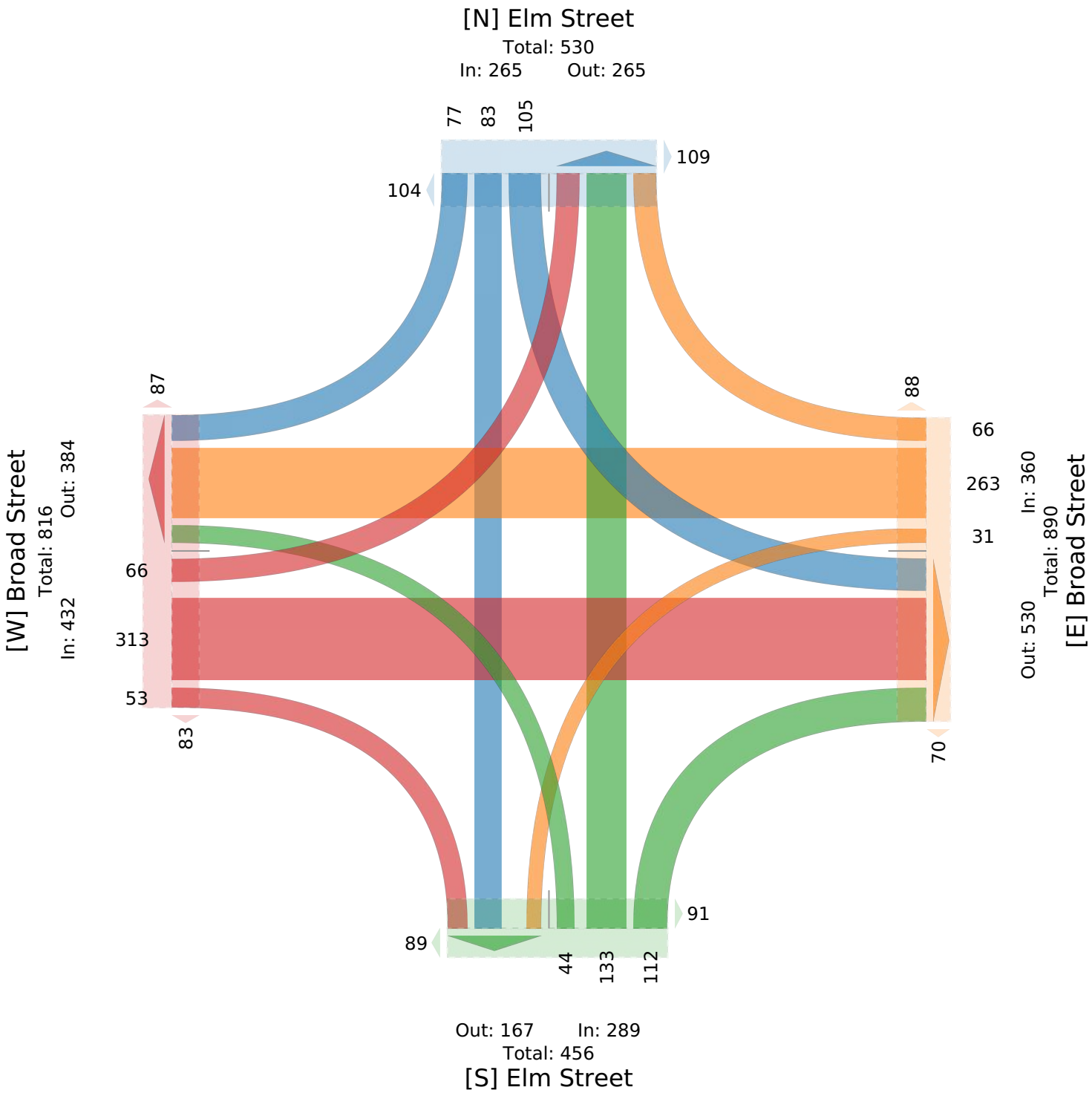
Leg Direction	Broad Street Eastbound							Broad Street Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 1:00PM	7	80	17	0	2	**106**	46	9	80	13	0	0	**102**	30	**356**
1:15PM	16	82	9	0	2	**109**	39	9	65	13	0	0	**87**	34	**322**
1:30PM	23	79	9	0	1	**112**	43	8	53	20	0	0	**81**	42	**350**
1:45PM	20	72	11	0	2	**105**	42	5	65	20	0	0	**90**	52	**318**
Total	66	313	46	0	7	**432**	170	31	263	66	0	0	**360**	158	**1346**
% Approach	15.3%	72.5%	10.6%	0%	1.6%	**-**	-	8.6%	73.1%	18.3%	0%	0%	**-**	-	-
% Total	4.9%	23.3%	3.4%	0%	0.5%	**32.1%**	-	2.3%	19.5%	4.9%	0%	0%	**26.7%**	-	-
PHF	0.717	0.954	0.676	-	0.875	**0.964**	-	0.861	0.822	0.825	-	-	**0.882**	-	0.945
Lights	64	310	44	0	7	**425**	-	31	259	66	0	0	**356**	-	1332
% Lights	97.0%	99.0%	95.7%	0%	100%	**98.4%**	-	100%	98.5%	100%	0%	0%	**98.9%**	-	99.0%
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	2	3	2	0	0	**7**	-	0	4	0	0	0	**4**	-	14
% Buses and Single-Unit Trucks	3.0%	1.0%	4.3%	0%	0%	**1.6%**	-	0%	1.5%	0%	0%	0%	**1.1%**	-	1.0%
Pedestrians	-	-	-	-	-	-	166	-	-	-	-	-	-	149	
% Pedestrians	-	-	-	-	-	-	97.6%	-	-	-	-	-	-	94.3%	-
Bicycles on Crosswalk	-	-	-	-	-	-	4	-	-	-	-	-	-	9	
% Bicycles on Crosswalk	-	-	-	-	-	-	2.4%	-	-	-	-	-	-	5.7%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

3. Elm Street and Broad Street - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965693, Location: 40.65177, -74.348273, Site Code: 3

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



Imperial Traffic & Data Collection
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Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.65177, -74.348273

Count Name: 3. Elm Street and Broad Street
Site Code: 3
Start Date: 06/18/2022

Turning Movement Data

Start Time	Broad Street Eastbound							Broad Street Westbound							Elm Street Northbound							Elm Street Southbound							Int. Total
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	
11:00 AM	0	20	72	10	1	21	103	0	8	60	20	0	26	88	0	11	23	17	0	24	51	0	25	27	20	0	31	72	314
11:15 AM	0	26	91	11	1	19	129	0	7	68	14	0	32	89	0	14	35	14	0	30	63	0	33	20	19	1	32	73	354
11:30 AM	0	26	90	10	4	31	130	0	5	59	16	0	33	80	0	13	25	13	2	27	53	0	31	22	10	1	43	64	327
11:45 AM	0	19	79	8	1	22	107	0	12	70	19	0	34	101	0	9	36	25	0	30	70	0	27	33	18	1	30	79	357
Hourly Total	0	91	332	39	7	93	469	0	32	257	69	0	125	358	0	47	119	69	2	111	237	0	116	102	67	3	136	288	1352
12:00 PM	0	12	95	20	4	55	131	0	7	73	26	1	29	107	0	12	32	16	2	38	62	0	31	32	20	0	45	83	383
12:15 PM	0	17	93	19	2	36	131	0	5	73	10	0	30	88	0	16	34	22	0	40	72	0	25	15	22	0	40	62	353
12:30 PM	0	26	76	15	3	54	120	0	7	61	22	0	34	90	0	13	45	18	1	41	77	0	33	34	19	0	39	86	373
12:45 PM	0	13	78	20	1	33	112	0	11	62	19	0	41	92	0	11	30	28	3	33	72	0	31	22	18	0	53	71	347
Hourly Total	0	68	342	74	10	178	494	0	30	269	77	1	134	377	0	52	141	84	6	152	283	0	120	103	79	0	177	302	1456
1:00 PM	0	7	80	17	2	46	106	0	9	80	13	0	30	102	0	13	35	22	2	45	72	0	29	24	23	0	53	76	356
1:15 PM	0	16	82	9	2	39	109	0	9	65	13	0	34	87	0	10	29	25	2	45	66	0	26	20	11	3	48	60	322
1:30 PM	0	23	79	9	1	43	112	0	8	53	20	0	42	81	0	11	37	39	1	39	88	0	25	23	21	0	54	69	350
1:45 PM	0	20	72	11	2	42	105	0	5	65	20	0	52	90	0	10	32	21	0	51	63	0	25	16	19	0	58	60	318
Hourly Total	0	66	313	46	7	170	432	0	31	263	66	0	158	360	0	44	133	107	5	180	289	0	105	83	74	3	213	265	1346
Grand Total	0	225	987	159	24	441	1395	0	93	789	212	1	417	1095	0	143	393	260	13	443	809	0	341	288	220	6	526	855	4154
Approach %	0.0	16.1	70.8	11.4	1.7	-	-	0.0	8.5	72.1	19.4	0.1	-	-	0.0	17.7	48.6	32.1	1.6	-	-	0.0	39.9	33.7	25.7	0.7	-	-	-
Total %	0.0	5.4	23.8	3.8	0.6	-	33.6	0.0	2.2	19.0	5.1	0.0	-	26.4	0.0	3.4	9.5	6.3	0.3	-	19.5	0.0	8.2	6.9	5.3	0.1	-	20.6	-
Lights	0	220	976	157	24	-	1377	0	91	777	212	1	-	1081	0	143	391	259	13	-	806	0	341	286	215	6	-	848	4112
% Lights	-	97.8	98.9	98.7	100.0	-	98.7	-	97.8	98.5	100.0	100.0	-	98.7	-	100.0	99.5	99.6	100.0	-	99.6	-	100.0	99.3	97.7	100.0	-	99.2	99.0
Mediums	0	5	10	2	0	-	17	0	1	9	0	0	-	10	0	0	2	1	0	-	3	0	0	2	5	0	-	7	37
% Mediums	-	2.2	1.0	1.3	0.0	-	1.2	-	1.1	1.1	0.0	0.0	-	0.9	-	0.0	0.5	0.4	0.0	-	0.4	-	0.0	0.7	2.3	0.0	-	0.8	0.9
Articulated Trucks	0	0	1	0	0	-	1	0	1	3	0	0	-	4	0	0	0	0	0	-	0	0	0	0	0	0	-	0	5
% Articulated Trucks	-	0.0	0.1	0.0	0.0	-	0.1	-	1.1	0.4	0.0	0.0	-	0.4	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	-	5	-	-	-	-	-	-	15	-	-	-	-	-	-	4	-	-	-	-	-	-	21	-	-
% Bicycles on Crosswalk	-	-	-	-	-	1.1	-	-	-	-	-	-	3.6	-	-	-	-	-	-	0.9	-	-	-	-	-	-	4.0	-	-
Pedestrians	-	-	-	-	-	436	-	-	-	-	-	-	402	-	-	-	-	-	-	439	-	-	-	-	-	-	505	-	-
% Pedestrians	-	-	-	-	-	98.9	-	-	-	-	-	-	96.4	-	-	-	-	-	-	99.1	-	-	-	-	-	-	96.0	-	-

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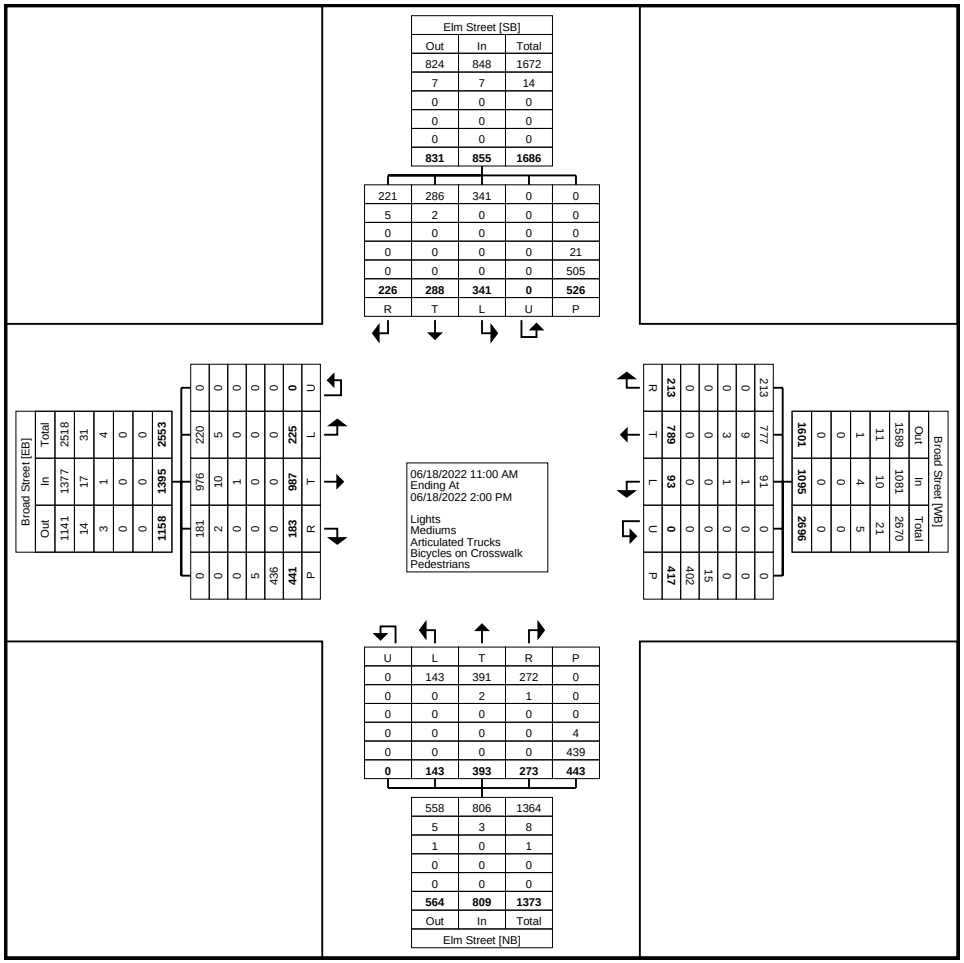
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.65177, -74.348273

Count Name: 3. Elm Street and Broad Street
Site Code: 3
Start Date: 06/18/2022



Turning Movement Data Plot

Imperial Traffic & Data Collection
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Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.65177, -74.348273

Count Name: 3. Elm Street and Broad Street
Site Code: 3
Start Date: 06/18/2022

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Broad Street Eastbound							Broad Street Westbound							Elm Street Northbound							Elm Street Southbound							
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	Int. Total
11:45 AM	0	19	79	8	1	22	107	0	12	70	19	0	34	101	0	9	36	25	0	30	70	0	27	33	18	1	30	79	357
12:00 PM	0	12	95	20	4	55	131	0	7	73	26	1	29	107	0	12	32	16	2	38	62	0	31	32	20	0	45	83	383
12:15 PM	0	17	93	19	2	36	131	0	5	73	10	0	30	88	0	16	34	22	0	40	72	0	25	15	22	0	40	62	353
12:30 PM	0	26	76	15	3	54	120	0	7	61	22	0	34	90	0	13	45	18	1	41	77	0	33	34	19	0	39	86	373
Total	0	74	343	62	10	167	489	0	31	277	77	1	127	386	0	50	147	81	3	149	281	0	116	114	79	1	154	310	1466
Approach %	0.0	15.1	70.1	12.7	2.0	-	-	0.0	8.0	71.8	19.9	0.3	-	-	0.0	17.8	52.3	28.8	1.1	-	-	0.0	37.4	36.8	25.5	0.3	-	-	-
Total %	0.0	5.0	23.4	4.2	0.7	-	33.4	0.0	2.1	18.9	5.3	0.1	-	26.3	0.0	3.4	10.0	5.5	0.2	-	19.2	0.0	7.9	7.8	5.4	0.1	-	21.1	-
PHF	0.000	0.712	0.903	0.775	0.625	-	0.933	0.000	0.646	0.949	0.740	0.250	-	0.902	0.000	0.781	0.817	0.810	0.375	-	0.912	0.000	0.879	0.838	0.898	0.250	-	0.901	0.957
Lights	0	72	339	62	10	-	483	0	31	273	77	1	-	382	0	50	146	80	3	-	279	0	116	113	77	1	-	307	1451
% Lights	-	97.3	98.8	100.0	100.0	-	98.8	-	100.0	98.6	100.0	100.0	-	99.0	-	100.0	99.3	98.8	100.0	-	99.3	-	100.0	99.1	97.5	100.0	-	99.0	99.0
Mediums	0	2	4	0	0	-	6	0	0	3	0	0	-	3	0	0	1	1	0	-	2	0	0	1	2	0	-	3	14
% Mediums	-	2.7	1.2	0.0	0.0	-	1.2	-	0.0	1.1	0.0	0.0	-	0.8	-	0.0	0.7	1.2	0.0	-	0.7	-	0.0	0.9	2.5	0.0	-	1.0	1.0
Articulated Trucks	0	0	0	0	0	-	0	0	0	1	0	0	-	1	0	0	0	0	0	-	0	0	0	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.4	0.0	0.0	-	0.3	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	5	-	-	-	-	-	-	0	-	-	-	-	-	-	9	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	-	3.9	-	-	-	-	-	-	0.0	-	-	-	-	-	-	5.8	-	-
Pedestrians	-	-	-	-	-	167	-	-	-	-	-	-	122	-	-	-	-	-	-	149	-	-	-	-	-	-	145	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	96.1	-	-	-	-	-	-	100.0	-	-	-	-	-	-	94.2	-	-

Imperial Traffic & Data Collection
www.imperialtdc.com
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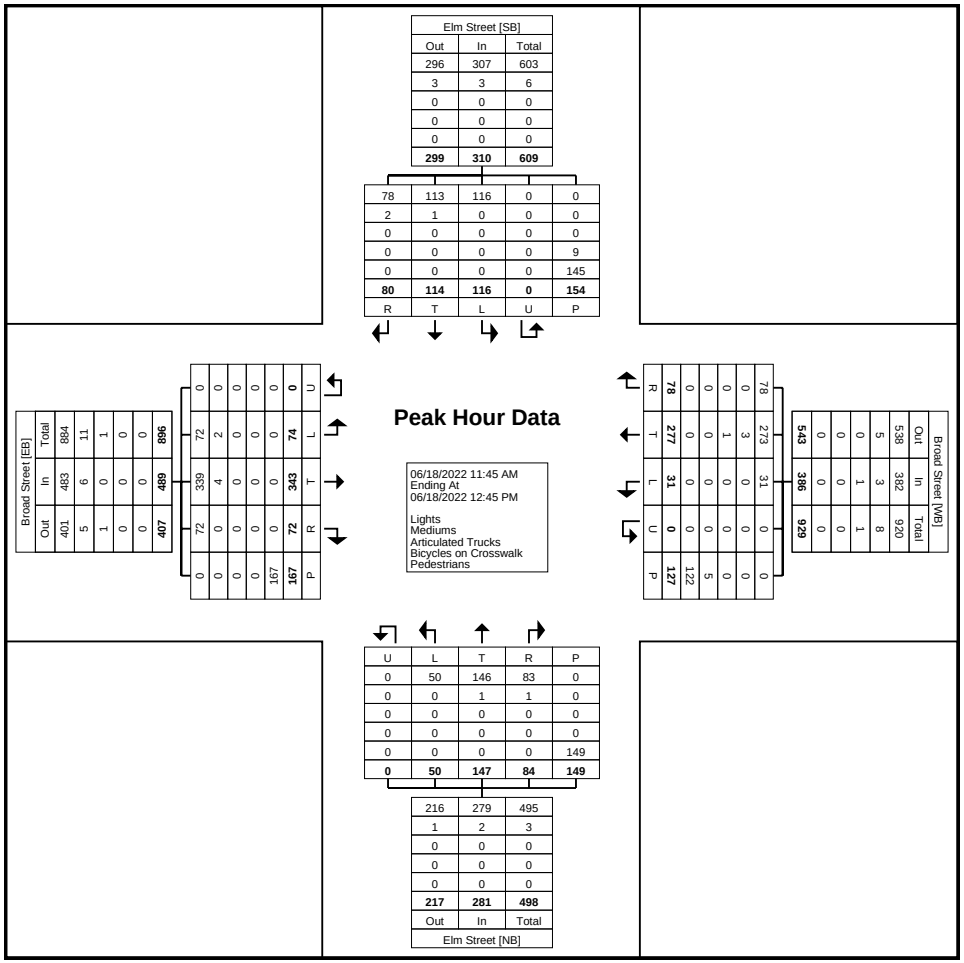
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.65177, -74.348273

Count Name: 3. Elm Street and Broad Street
Site Code: 3
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (11:45 AM)

4. Central Avenue and Broad Street - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965695, Location: 40.652475, -74.347613, Site Code: 4

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

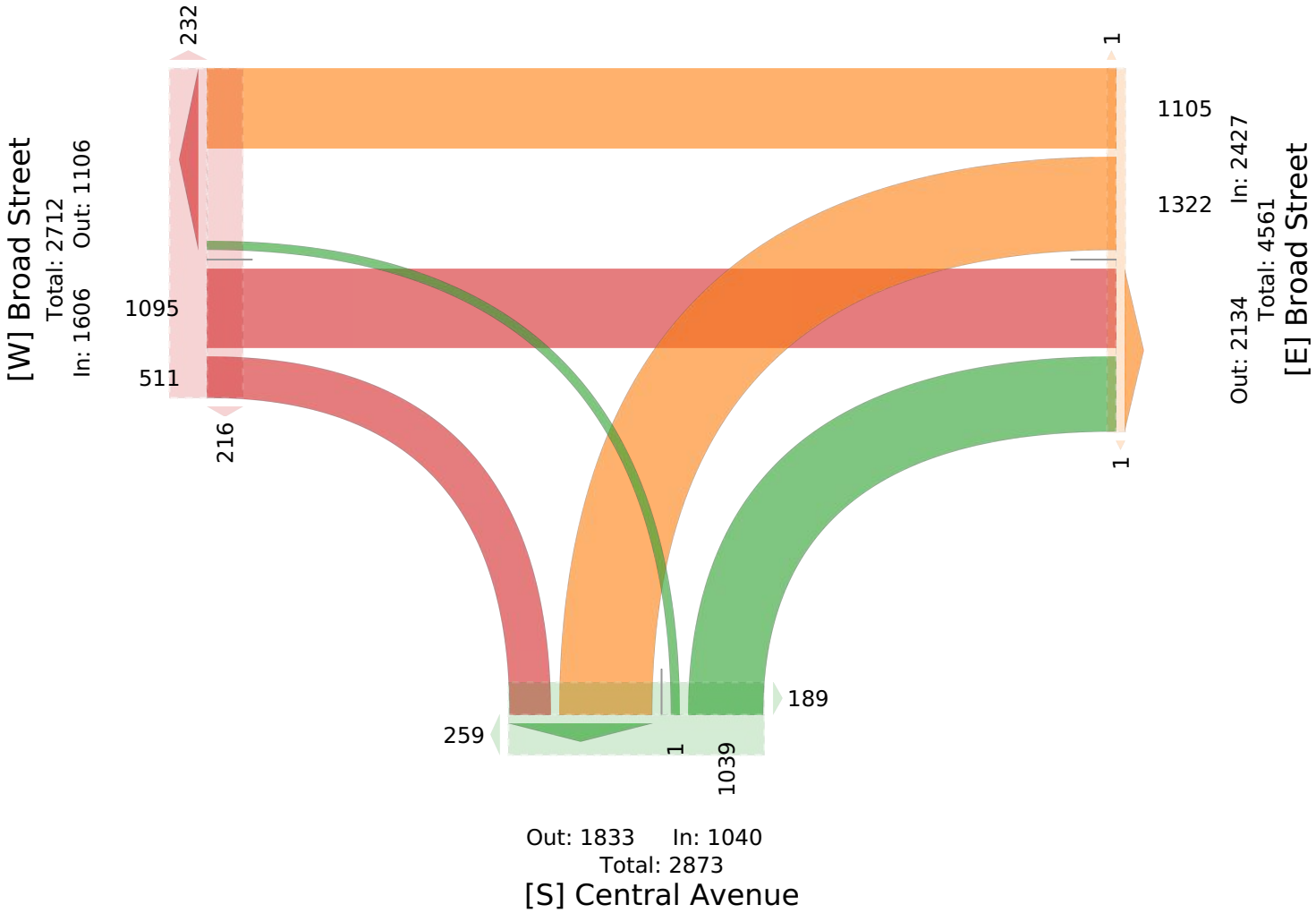
Leg Direction	Central Avenue Northbound						Broad Street Eastbound						Broad Street Westbound					
Time	L	R	U	RR	**App**	Ped*	T	R	U	RR	**App**	Ped*	L	T	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	0	82	0	1	**83**	18	79	36	0	0	**115**	26	115	85	0	**200**	0	**398**
11:15AM	0	88	0	0	**88**	14	95	42	0	0	**137**	24	110	90	0	**200**	0	**425**
11:30AM	0	96	0	1	**97**	39	87	44	0	0	**131**	26	107	81	0	**188**	0	**416**
11:45AM	1	86	0	1	**88**	47	111	28	0	1	**140**	30	117	99	0	**216**	0	**444**
Hourly Total	1	352	0	3	**356**	118	372	150	0	1	**523**	106	449	355	0	**804**	0	**1683**
12:00PM	0	91	0	3	**94**	51	95	47	0	2	**144**	47	111	111	0	**222**	0	**460**
12:15PM	0	96	0	1	**97**	41	99	43	0	1	**143**	32	120	84	0	**204**	0	**444**
12:30PM	0	74	0	7	**81**	45	96	35	0	0	**131**	53	107	98	0	**205**	0	**417**
12:45PM	0	69	0	3	**72**	39	94	40	0	2	**136**	50	108	95	0	**203**	1	**411**
Hourly Total	0	330	0	14	**344**	176	384	165	0	5	**554**	182	446	388	0	**834**	1	**1732**
1:00PM	0	81	0	0	**81**	44	82	45	0	4	**131**	32	107	103	0	**210**	0	**422**
1:15PM	0	91	0	0	**91**	33	85	50	0	1	**136**	24	109	90	0	**199**	0	**426**
1:30PM	0	93	0	0	**93**	41	90	49	0	4	**143**	46	106	77	0	**183**	0	**419**
1:45PM	0	75	0	0	**75**	36	82	37	0	0	**119**	58	105	92	0	**197**	1	**391**
Hourly Total	0	340	0	0	**340**	154	339	181	0	9	**529**	160	427	362	0	**789**	1	**1658**
Total	1	1022	0	17	**1040**	448	1095	496	0	15	**1606**	448	1322	1105	0	**2427**	2	**5073**
% Approach	0.1%	98.3%	0%	1.6%	**-**	-	68.2%	30.9%	0%	0.9%	**-**	-	54.5%	45.5%	0%	**-**	-	**-**
% Total	0%	20.1%	0%	0.3%	**20.5%**	-	21.6%	9.8%	0%	0.3%	**31.7%**	-	26.1%	21.8%	0%	**47.8%**	-	**-**
Lights	1	1013	0	17	**1031**	-	1084	492	0	15	**1591**	-	1298	1091	0	**2389**	-	5011
% Lights	100%	99.1%	0%	100%	**99.1%**	-	99.0%	99.2%	0%	100%	**99.1%**	-	98.2%	98.7%	0%	**98.4%**	-	98.8%
Articulated Trucks	0	0	0	0	**0**	-	3	0	0	0	**3**	-	4	3	0	**7**	-	10
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0.3%	0%	0%	0%	**0.2%**	-	0.3%	0.3%	0%	**0.3%**	-	0.2%
Buses and Single-Unit Trucks	0	9	0	0	**9**	-	8	4	0	0	**12**	-	20	11	0	**31**	-	52
% Buses and Single-Unit Trucks	0%	0.9%	0%	0%	**0.9%**	-	0.7%	0.8%	0%	0%	**0.7%**	-	1.5%	1.0%	0%	**1.3%**	-	1.0%
Pedestrians	-	-	-	-	-	439	-	-	-	-	-	441	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	98.0%	-	-	-	-	-	98.4%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	9	-	-	-	-	-	7	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	2.0%	-	-	-	-	-	1.6%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

4. Central Avenue and Broad Street - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965695, Location: 40.652475, -74.347613, Site Code: 4

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



4. Central Avenue and Broad Street - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965695, Location: 40.652475, -74.347613, Site Code: 4

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg	Central Avenue						Broad Street						Broad Street					
Direction	Northbound						Eastbound						Westbound					
Time	L	R	U	RR	**App**	Ped*	T	R	U	RR	**App**	Ped*	L	T	U	**App**	Ped*	**Int**
2022-06-18 11:45AM	1	86	0	1	**88**	47	111	28	0	1	**140**	30	117	99	0	**216**	0	**444**
12:00PM	0	91	0	3	**94**	51	95	47	0	2	**144**	47	111	111	0	**222**	0	**460**
12:15PM	0	96	0	1	**97**	41	99	43	0	1	**143**	32	120	84	0	**204**	0	**444**
12:30PM	0	74	0	7	**81**	45	96	35	0	0	**131**	53	107	98	0	**205**	0	**417**
Total	1	347	0	12	**360**	184	401	153	0	4	**558**	162	455	392	0	**847**	0	**1765**
% Approach	0.3%	96.4%	0%	3.3%	**-**	-	71.9%	27.4%	0%	0.7%	**-**	-	53.7%	46.3%	0%	**-**	-	**-**
% Total	0.1%	19.7%	0%	0.7%	**20.4%**	-	22.7%	8.7%	0%	0.2%	**31.6%**	-	25.8%	22.2%	0%	**48.0%**	-	**-**
PHF	0.250	0.904	-	0.429	**0.928**	-	0.903	0.814	-	0.500	**0.969**	-	0.948	0.883	-	**0.954**	-	0.959
Lights	1	346	0	12	**359**	-	397	151	0	4	**552**	-	446	388	0	**834**	-	1745
% Lights	100%	99.7%	0%	100%	**99.7%**	-	99.0%	98.7%	0%	100%	**98.9%**	-	98.0%	99.0%	0%	**98.5%**	-	98.9%
Articulated Trucks	0	0	0	0	**0**	-	1	0	0	0	**1**	-	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0.2%	0%	0%	0%	**0.2%**	-	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	1	0	0	**1**	-	3	2	0	0	**5**	-	9	4	0	**13**	-	19
% Buses and Single-Unit Trucks	0%	0.3%	0%	0%	**0.3%**	-	0.7%	1.3%	0%	0%	**0.9%**	-	2.0%	1.0%	0%	**1.5%**	-	1.1%
Pedestrians	-	-	-	-	-	181	-	-	-	-	-	160	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	98.4%	-	-	-	-	-	98.8%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	1.6%	-	-	-	-	-	1.2%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

4. Central Avenue and Broad Street - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965695, Location: 40.652475, -74.347613, Site Code: 4

Provided by: Imperial Traffic & Data Collection
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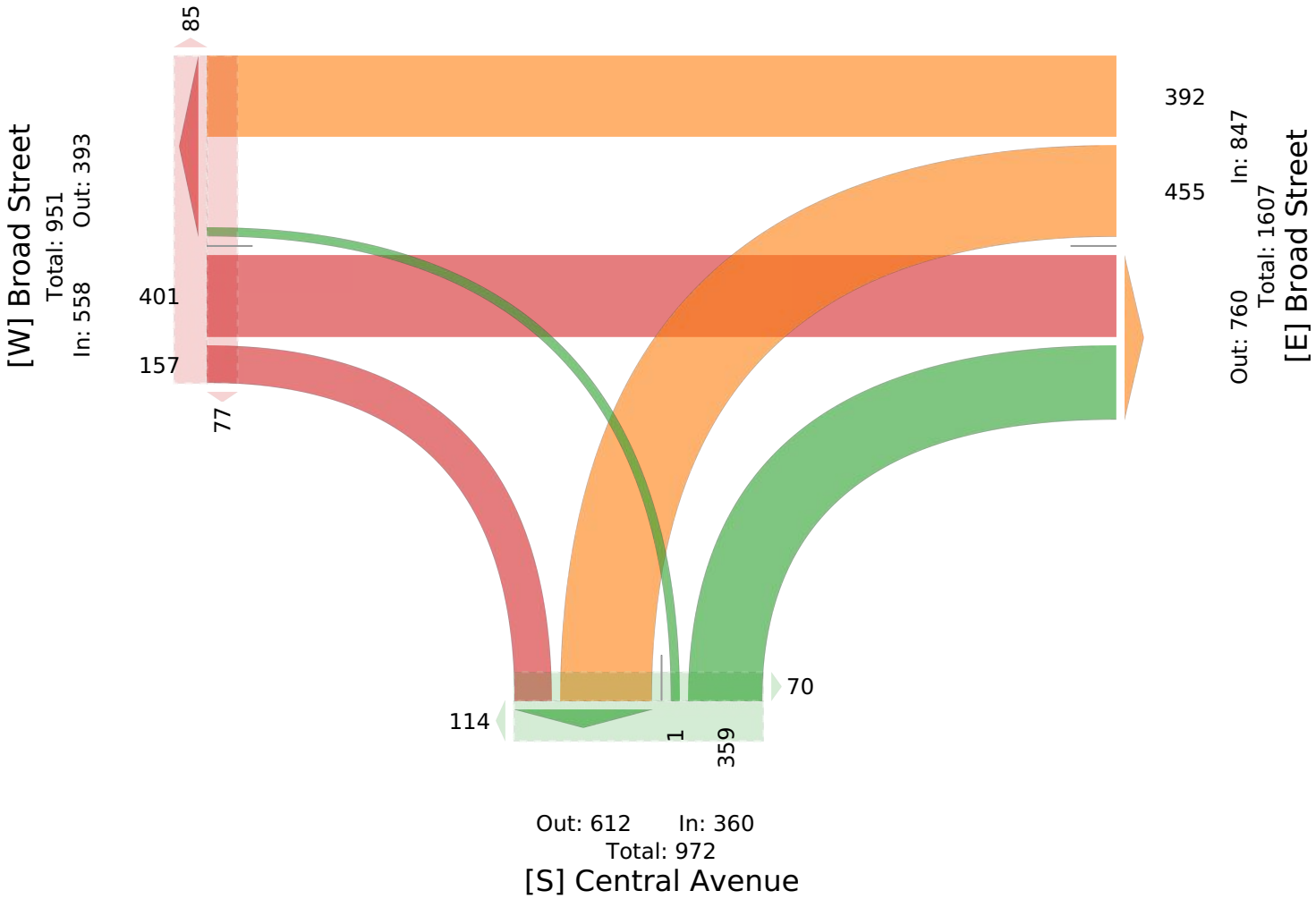

4. Central Avenue and Broad Street - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965695, Location: 40.652475, -74.347613, Site Code: 4

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Central Avenue Northbound						Broad Street Eastbound						Broad Street Westbound					
Time	L	R	U	RR	**App**	Ped*	T	R	U	RR	**App**	Ped*	L	T	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	0	81	0	0	**81**	44	82	45	0	4	**131**	32	107	103	0	**210**	0	**422**
1:15PM	0	91	0	0	**91**	33	85	50	0	1	**136**	24	109	90	0	**199**	0	**426**
1:30PM	0	93	0	0	**93**	41	90	49	0	4	**143**	46	106	77	0	**183**	0	**419**
1:45PM	0	75	0	0	**75**	36	82	37	0	0	**119**	58	105	92	0	**197**	1	**391**
Total	0	340	0	0	**340**	154	339	181	0	9	**529**	160	427	362	0	**789**	1	**1658**
% Approach	0%	100%	0%	0%	**-**	-	64.1%	34.2%	0%	1.7%	**-**	-	54.1%	45.9%	0%	**-**	-	**-**
% Total	0%	20.5%	0%	0%	**20.5%**	-	20.4%	10.9%	0%	0.5%	**31.9%**	-	25.8%	21.8%	0%	**47.6%**	-	**-**
PHF	-	0.914	-	-	**0.914**	-	0.942	0.905	-	0.563	**0.925**	-	0.979	0.879	-	**0.939**	-	0.973
Lights	0	338	0	0	**338**	-	336	180	0	9	**525**	-	423	358	0	**781**	-	1644
% Lights	0%	99.4%	0%	0%	**99.4%**	-	99.1%	99.4%	0%	100%	**99.2%**	-	99.1%	98.9%	0%	**99.0%**	-	99.2%
Articulated Trucks	0	0	0	0	**0**	-	1	0	0	0	**1**	-	2	1	0	**3**	-	4
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0.3%	0%	0%	0%	**0.2%**	-	0.5%	0.3%	0%	**0.4%**	-	0.2%
Buses and Single-Unit Trucks	0	2	0	0	**2**	-	2	1	0	0	**3**	-	2	3	0	**5**	-	10
% Buses and Single-Unit Trucks	0%	0.6%	0%	0%	**0.6%**	-	0.6%	0.6%	0%	0%	**0.6%**	-	0.5%	0.8%	0%	**0.6%**	-	0.6%
Pedestrians	-	-	-	-	-	151	-	-	-	-	-	156	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	98.1%	-	-	-	-	-	97.5%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	1.9%	-	-	-	-	-	2.5%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

4. Central Avenue and Broad Street - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965695, Location: 40.652475, -74.347613, Site Code: 4

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
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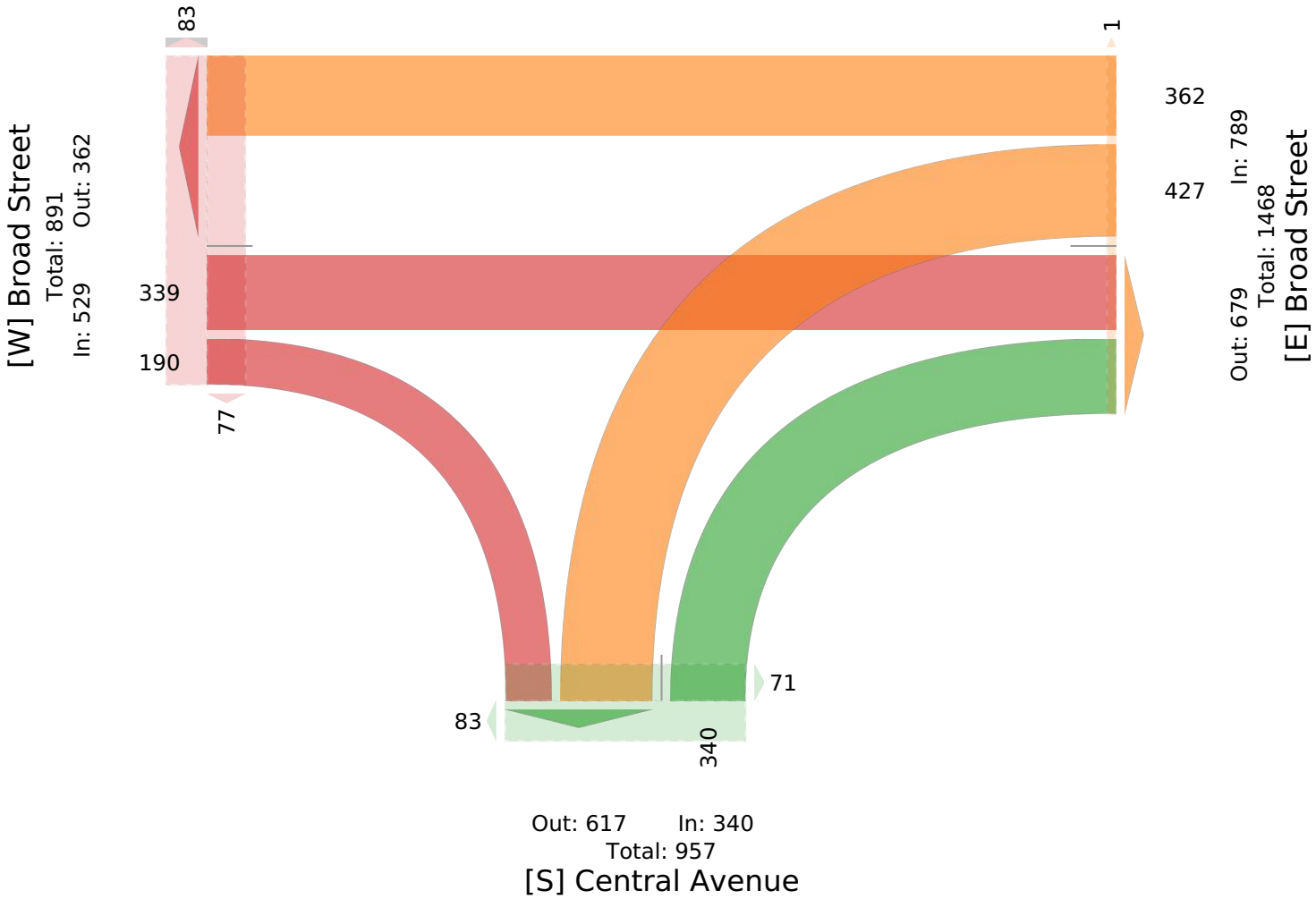

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.652475, -74.347613

Imperial Traffic & Data Collection
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PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Count Name: 4. Central Avenue and Broad Street
Site Code: 4
Start Date: 06/18/2022

Turning Movement Data

Start Time	Broad Street Eastbound						Broad Street Westbound					Central Avenue Northbound						
	U-Turn	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Right on Red	Peds	App. Total	Int. Total
11:00 AM	0	79	36	0	26	115	0	115	85	0	200	0	0	82	1	18	83	398
11:15 AM	0	95	42	0	24	137	0	110	90	0	200	0	0	88	0	14	88	425
11:30 AM	0	87	44	0	26	131	0	107	81	0	188	0	0	96	1	39	97	416
11:45 AM	0	111	28	1	30	140	0	117	99	0	216	0	1	86	1	47	88	444
Hourly Total	0	372	150	1	106	523	0	449	355	0	804	0	1	352	3	118	356	1683
12:00 PM	0	95	47	2	47	144	0	111	111	0	222	0	0	91	3	51	94	460
12:15 PM	0	99	43	1	32	143	0	120	84	0	204	0	0	96	1	41	97	444
12:30 PM	0	96	35	0	53	131	0	107	98	0	205	0	0	74	7	45	81	417
12:45 PM	0	94	40	2	50	136	0	108	95	1	203	0	0	69	3	39	72	411
Hourly Total	0	384	165	5	182	554	0	446	388	1	834	0	0	330	14	176	344	1732
1:00 PM	0	82	45	4	32	131	0	107	103	0	210	0	0	81	0	44	81	422
1:15 PM	0	85	50	1	24	136	0	109	90	0	199	0	0	91	0	33	91	426
1:30 PM	0	90	49	4	46	143	0	106	77	0	183	0	0	93	0	41	93	419
1:45 PM	0	82	37	0	58	119	0	105	92	1	197	0	0	75	0	36	75	391
Hourly Total	0	339	181	9	160	529	0	427	362	1	789	0	0	340	0	154	340	1658
Grand Total	0	1095	496	15	448	1606	0	1322	1105	2	2427	0	1	1022	17	448	1040	5073
Approach %	0.0	68.2	30.9	0.9	-	-	0.0	54.5	45.5	-	-	0.0	0.1	98.3	1.6	-	-	-
Total %	0.0	21.6	9.8	0.3	-	31.7	0.0	26.1	21.8	-	47.8	0.0	0.0	20.1	0.3	-	20.5	-
Lights	0	1084	492	15	-	1591	0	1298	1091	-	2389	0	1	1013	17	-	1031	5011
% Lights	-	99.0	99.2	100.0	-	99.1	-	98.2	98.7	-	98.4	-	100.0	99.1	100.0	-	99.1	98.8
Mediums	0	8	4	0	-	12	0	20	11	-	31	0	0	9	0	-	9	52
% Mediums	-	0.7	0.8	0.0	-	0.7	-	1.5	1.0	-	1.3	-	0.0	0.9	0.0	-	0.9	1.0
Articulated Trucks	0	3	0	0	-	3	0	4	3	-	7	0	0	0	0	-	0	10
% Articulated Trucks	-	0.3	0.0	0.0	-	0.2	-	0.3	0.3	-	0.3	-	0.0	0.0	0.0	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	7	-	-	-	-	0	-	-	-	-	-	9	-	-
% Bicycles on Crosswalk	-	-	-	-	1.6	-	-	-	-	0.0	-	-	-	-	-	2.0	-	-
Pedestrians	-	-	-	-	441	-	-	-	-	2	-	-	-	-	-	439	-	-
% Pedestrians	-	-	-	-	98.4	-	-	-	-	100.0	-	-	-	-	-	98.0	-	-

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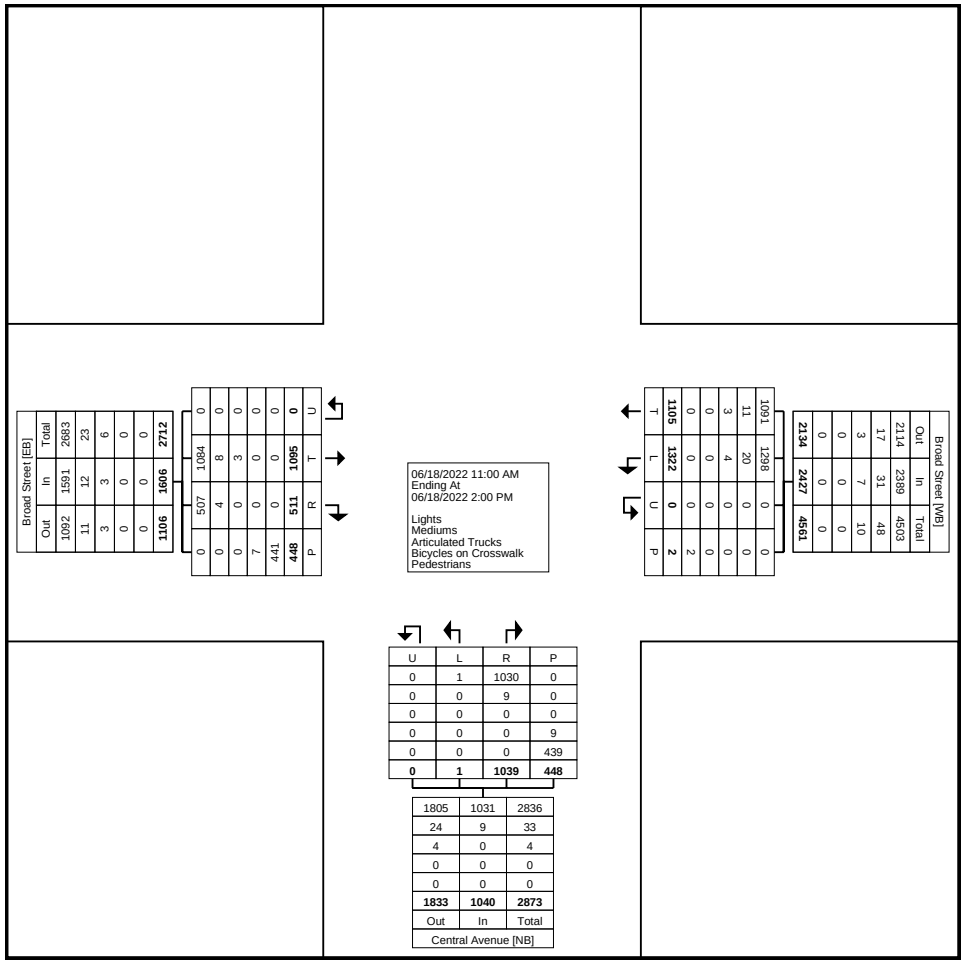
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.652475, -74.347613

Count Name: 4. Central Avenue and Broad Street
Site Code: 4
Start Date: 06/18/2022



Turning Movement Data Plot

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Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.652475, -74.347613

Count Name: 4. Central Avenue and Broad Street
Site Code: 4
Start Date: 06/18/2022

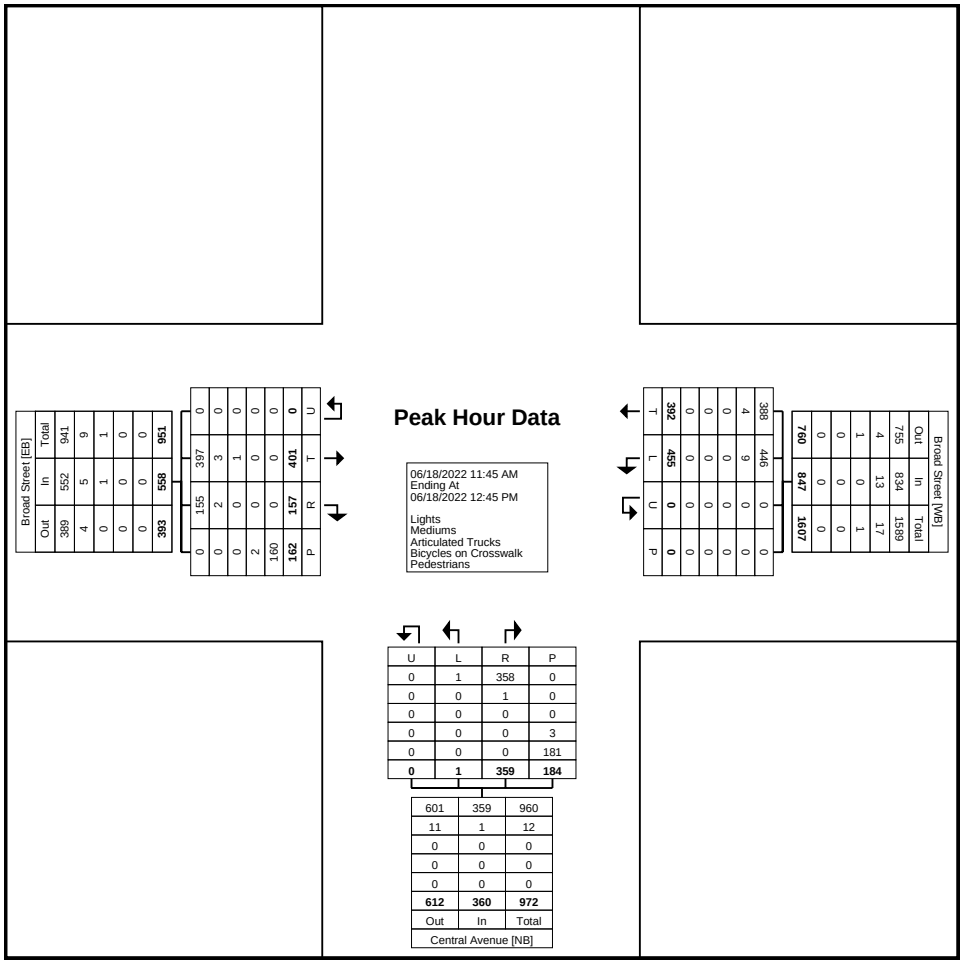
Turning Movement Peak Hour Data (11:45 AM)

Start Time	Broad Street Eastbound						Broad Street Westbound					Central Avenue Northbound						
	U-Turn	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Right on Red	Peds	App. Total	Int. Total
11:45 AM	0	111	28	1	30	140	0	117	99	0	216	0	1	86	1	47	88	444
12:00 PM	0	95	47	2	47	144	0	111	111	0	222	0	0	91	3	51	94	460
12:15 PM	0	99	43	1	32	143	0	120	84	0	204	0	0	96	1	41	97	444
12:30 PM	0	96	35	0	53	131	0	107	98	0	205	0	0	74	7	45	81	417
Total	0	401	153	4	162	558	0	455	392	0	847	0	1	347	12	184	360	1765
Approach %	0.0	71.9	27.4	0.7	-	-	0.0	53.7	46.3	-	-	0.0	0.3	96.4	3.3	-	-	-
Total %	0.0	22.7	8.7	0.2	-	31.6	0.0	25.8	22.2	-	48.0	0.0	0.1	19.7	0.7	-	20.4	-
PHF	0.000	0.903	0.814	0.500	-	0.969	0.000	0.948	0.883	-	0.954	0.000	0.250	0.904	0.429	-	0.928	0.959
Lights	0	397	151	4	-	552	0	446	388	-	834	0	1	346	12	-	359	1745
% Lights	-	99.0	98.7	100.0	-	98.9	-	98.0	99.0	-	98.5	-	100.0	99.7	100.0	-	99.7	98.9
Mediums	0	3	2	0	-	5	0	9	4	-	13	0	0	1	0	-	1	19
% Mediums	-	0.7	1.3	0.0	-	0.9	-	2.0	1.0	-	1.5	-	0.0	0.3	0.0	-	0.3	1.1
Articulated Trucks	0	1	0	0	-	1	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	-	0.2	0.0	0.0	-	0.2	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	1.6	-	-
Pedestrians	-	-	-	-	160	-	-	-	-	0	-	-	-	-	-	181	-	-
% Pedestrians	-	-	-	-	98.8	-	-	-	-	-	-	-	-	-	-	98.4	-	-

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.652475, -74.347613

Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Count Name: 4. Central Avenue and Broad Street
Site Code: 4
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (11:45 AM)

6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

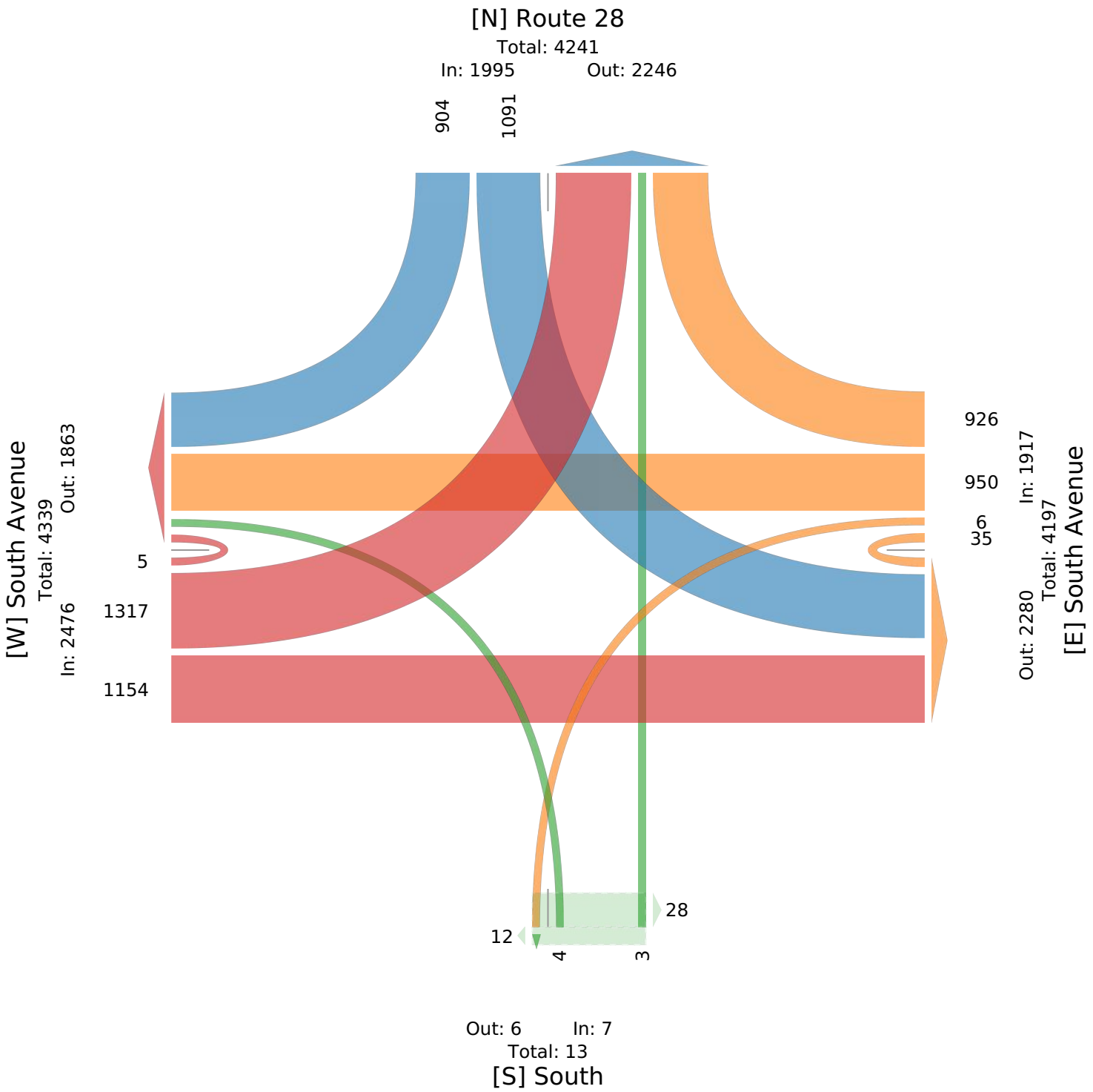
Leg	South						Route 28						South Avenue						South Avenue						
Direction	Northbound						Southbound						Eastbound						Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	1	2	0	0	**3**	5	89	0	87	0	**176**	0	116	95	0	0	**211**	0	0	85	71	4	**160**	0	**550**
11:15AM	1	0	0	0	**1**	2	96	0	95	0	**191**	0	135	99	0	0	**234**	0	0	89	86	1	**176**	0	**602**
11:30AM	0	0	0	0	**0**	4	74	0	78	0	**152**	0	109	91	0	0	**200**	0	0	75	76	5	**156**	0	**508**
11:45AM	1	0	0	0	**1**	3	79	0	91	0	**170**	0	116	88	0	0	**204**	0	0	80	84	4	**168**	0	**543**
Hourly Total	3	2	0	0	**5**	14	338	0	351	0	**689**	0	476	373	0	0	**849**	0	0	329	317	14	**660**	0	**2203**
12:00PM	0	0	0	0	**0**	5	106	0	63	0	**169**	0	125	91	0	0	**216**	0	1	69	76	6	**152**	0	**537**
12:15PM	0	0	0	0	**0**	2	98	0	69	0	**167**	0	128	118	0	1	**247**	0	1	69	88	4	**162**	0	**576**
12:30PM	0	1	0	0	**1**	3	75	0	53	0	**128**	0	94	107	0	0	**201**	0	1	66	80	5	**152**	0	**482**
12:45PM	0	0	0	0	**0**	2	115	0	63	0	**178**	0	107	105	0	2	**214**	0	1	88	69	1	**159**	0	**551**
Hourly Total	0	1	0	0	**1**	12	394	0	248	0	**642**	0	454	421	0	3	**878**	0	4	292	313	16	**625**	0	**2146**
1:00PM	0	0	0	0	**0**	4	91	0	97	0	**188**	0	106	97	0	0	**203**	0	1	75	86	3	**165**	0	**556**
1:15PM	1	0	0	0	**1**	5	112	0	62	0	**174**	0	87	91	0	2	**180**	0	0	98	75	1	**174**	0	**529**
1:30PM	0	0	0	0	**0**	1	77	0	71	0	**148**	0	96	80	0	0	**176**	0	0	79	72	0	**151**	0	**475**
1:45PM	0	0	0	0	**0**	4	79	0	75	0	**154**	0	98	92	0	0	**190**	0	1	77	63	1	**142**	0	**486**
Hourly Total	1	0	0	0	**1**	14	359	0	305	0	**664**	0	387	360	0	2	**749**	0	2	329	296	5	**632**	0	**2046**
Total	4	3	0	0	**7**	40	1091	0	904	0	**1995**	0	1317	1154	0	5	**2476**	0	6	950	926	35	**1917**	0	**6395**
% Approach	57.1%	42.9%	0%	0%	**-**	-	54.7%	0%	45.3%	0%	**-**	-	53.2%	46.6%	0%	0.2%	**-**	-	0.3%	49.6%	48.3%	1.8%	**-**	-	-
% Total	0.1%	0%	0%	0%	**0.1%**	-	17.1%	0%	14.1%	0%	**31.2%**	-	20.6%	18.0%	0%	0.1%	**38.7%**	-	0.1%	14.9%	14.5%	0.5%	**30.0%**	-	-
Lights	4	3	0	0	**7**	-	1076	0	895	0	**1971**	-	1306	1146	0	5	**2457**	-	6	944	917	34	**1901**	-	6336
% Lights	100%	100%	0%	0%	**100%**	-	98.6%	0%	99.0%	0%	**98.8%**	-	99.2%	99.3%	0%	100%	**99.2%**	-	100%	99.4%	99.0%	97.1%	**99.2%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	1	0	1	0	**2**	-	2	1	0	0	**3**	-	0	1	1	0	**2**	-	7
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0.1%	0%	0.1%	0%	**0.1%**	-	0.2%	0.1%	0%	0%	**0.1%**	-	0%	0.1%	0.1%	0%	**0.1%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	14	0	8	0	**22**	-	9	7	0	0	**16**	-	0	5	8	1	**14**	-	52
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	1.3%	0%	0.9%	0%	**1.1%**	-	0.7%	0.6%	0%	0%	**0.6%**	-	0%	0.5%	0.9%	2.9%	**0.7%**	-	0.8%
Pedestrians	-	-	-	-	-	36	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	90.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	10.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

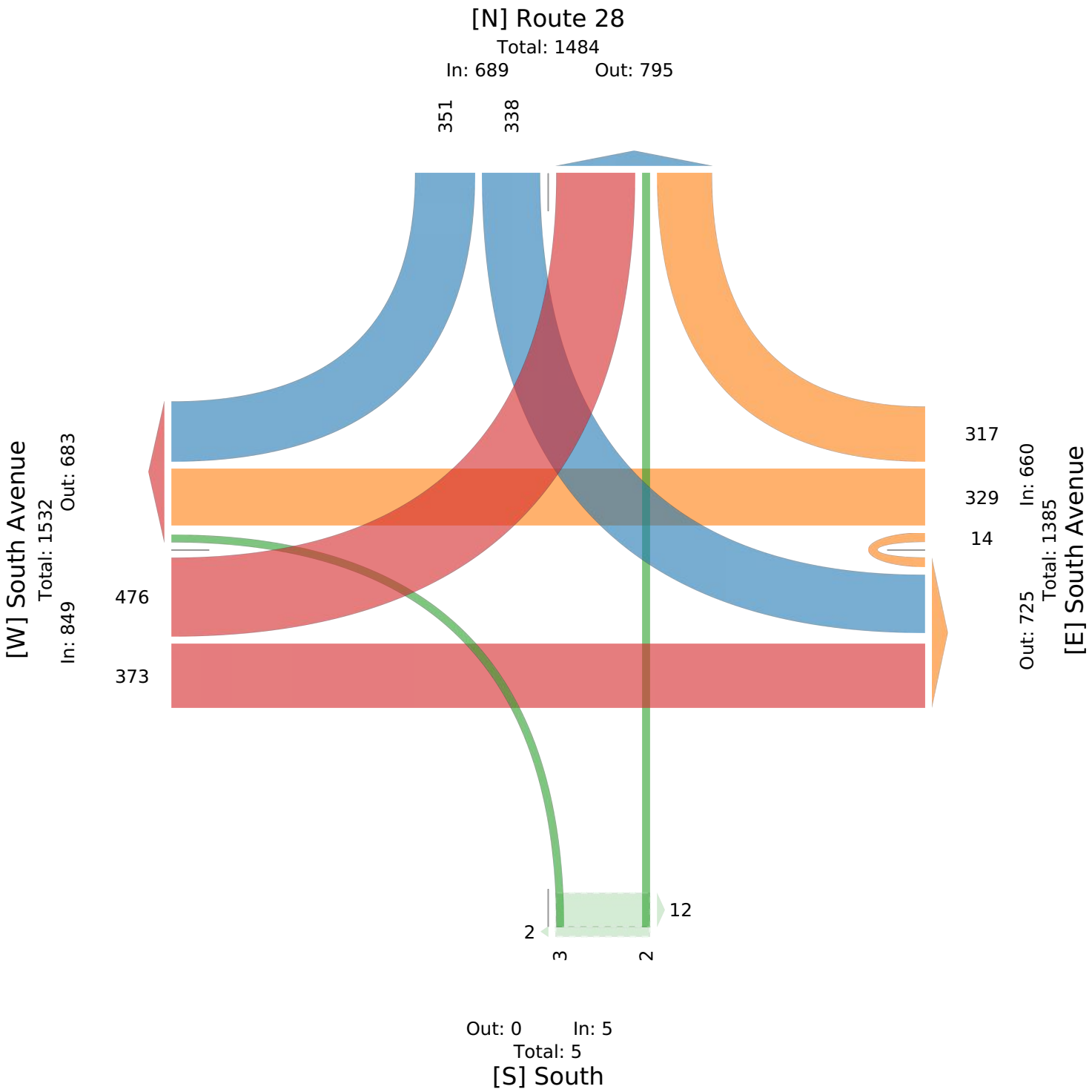
Leg / Direction	South Northbound						Route 28 Southbound						South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	1	2	0	0	**3**	5	89	0	87	0	**176**	0	116	95	0	0	**211**	0	0	85	71	4	**160**	0	**550**
11:15AM	1	0	0	0	**1**	2	96	0	95	0	**191**	0	135	99	0	0	**234**	0	0	89	86	1	**176**	0	**602**
11:30AM	0	0	0	0	**0**	4	74	0	78	0	**152**	0	109	91	0	0	**200**	0	0	75	76	5	**156**	0	**508**
11:45AM	1	0	0	0	**1**	3	79	0	91	0	**170**	0	116	88	0	0	**204**	0	0	80	84	4	**168**	0	**543**
Total	3	2	0	0	**5**	14	338	0	351	0	**689**	0	476	373	0	0	**849**	0	0	329	317	14	**660**	0	**2203**
% Approach	60.0%	40.0%	0%	0%	**-**	-	49.1%	0%	50.9%	0%	**-**	-	56.1%	43.9%	0%	0%	**-**	-	0%	49.8%	48.0%	2.1%	**-**	-	-
% Total	0.1%	0.1%	0%	0%	**0.2%**	-	15.3%	0%	15.9%	0%	**31.3%**	-	21.6%	16.9%	0%	0%	**38.5%**	-	0%	14.9%	14.4%	0.6%	**30.0%**	-	-
PHF	0.750	0.250	-	-	**0.417**	-	0.880	-	0.924	-	**0.902**	-	0.881	0.942	-	-	**0.907**	-	-	0.924	0.922	0.700	**0.938**	-	0.915
Lights	3	2	0	0	**5**	-	335	0	348	0	**683**	-	472	369	0	0	**841**	-	0	325	315	13	**653**	-	2182
% Lights	100%	100%	0%	0%	**100%**	-	99.1%	0%	99.1%	0%	**99.1%**	-	99.2%	98.9%	0%	0%	**99.1%**	-	0%	98.8%	99.4%	92.9%	**98.9%**	-	99.0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	0	1	1	0	**2**	-	3
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.2%	0%	0%	0%	**0.1%**	-	0%	0.3%	0.3%	0%	**0.3%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	3	0	3	0	**6**	-	3	4	0	0	**7**	-	0	3	1	1	**5**	-	18
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0.9%	0%	0.9%	0%	**0.9%**	-	0.6%	1.1%	0%	0%	**0.8%**	-	0%	0.9%	0.3%	7.1%	**0.8%**	-	0.8%
Pedestrians	-	-	-	-	-	14	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	South Northbound						Route 28 Southbound						South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	0	0	0	0	**0**	4	91	0	97	0	**188**	0	106	97	0	0	**203**	0	1	75	86	3	**165**	0	**556**
1:15PM	1	0	0	0	**1**	5	112	0	62	0	**174**	0	87	91	0	2	**180**	0	0	98	75	1	**174**	0	**529**
1:30PM	0	0	0	0	**0**	1	77	0	71	0	**148**	0	96	80	0	0	**176**	0	0	79	72	0	**151**	0	**475**
1:45PM	0	0	0	0	**0**	4	79	0	75	0	**154**	0	98	92	0	0	**190**	0	1	77	63	1	**142**	0	**486**
Total	1	0	0	0	**1**	14	359	0	305	0	**664**	0	387	360	0	2	**749**	0	2	329	296	5	**632**	0	**2046**
% Approach	100%	0%	0%	0%	**-**	-	54.1%	0%	45.9%	0%	**-**	-	51.7%	48.1%	0%	0.3%	**-**	-	0.3%	52.1%	46.8%	0.8%	**-**	-	-
% Total	0%	0%	0%	0%	**0%**	-	17.5%	0%	14.9%	0%	**32.5%**	-	18.9%	17.6%	0%	0.1%	**36.6%**	-	0.1%	16.1%	14.5%	0.2%	**30.9%**	-	-
PHF	0.250	-	-	-	**0.250**	-	0.801	-	0.786	-	**0.883**	-	0.913	0.928	-	0.250	**0.922**	-	0.500	0.839	0.860	0.417	**0.908**	-	0.920
Lights	1	0	0	0	**1**	-	354	0	303	0	**657**	-	384	356	0	2	**742**	-	2	327	293	5	**627**	-	2027
% Lights	100%	0%	0%	0%	**100%**	-	98.6%	0%	99.3%	0%	**98.9%**	-	99.2%	98.9%	0%	100%	**99.1%**	-	100%	99.4%	99.0%	100%	**99.2%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	1	0	0	**2**	-	0	0	0	0	**0**	-	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.3%	0.3%	0%	0%	**0.3%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	5	0	2	0	**7**	-	2	3	0	0	**5**	-	0	2	3	0	**5**	-	17
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	1.4%	0%	0.7%	0%	**1.1%**	-	0.5%	0.8%	0%	0%	**0.7%**	-	0%	0.6%	1.0%	0%	**0.8%**	-	0.8%
Pedestrians	-	-	-	-	-	11	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	78.6%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	21.4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
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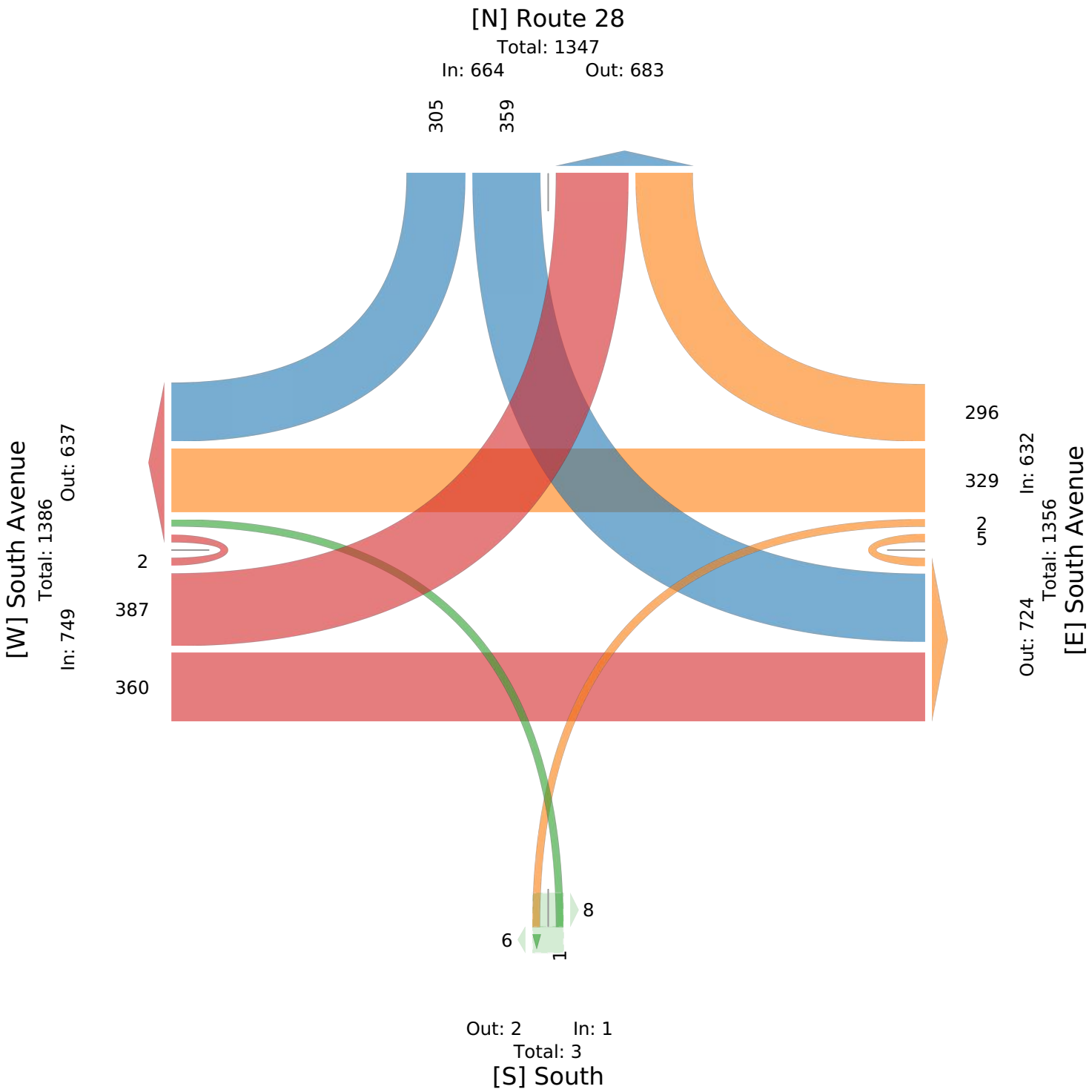


6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

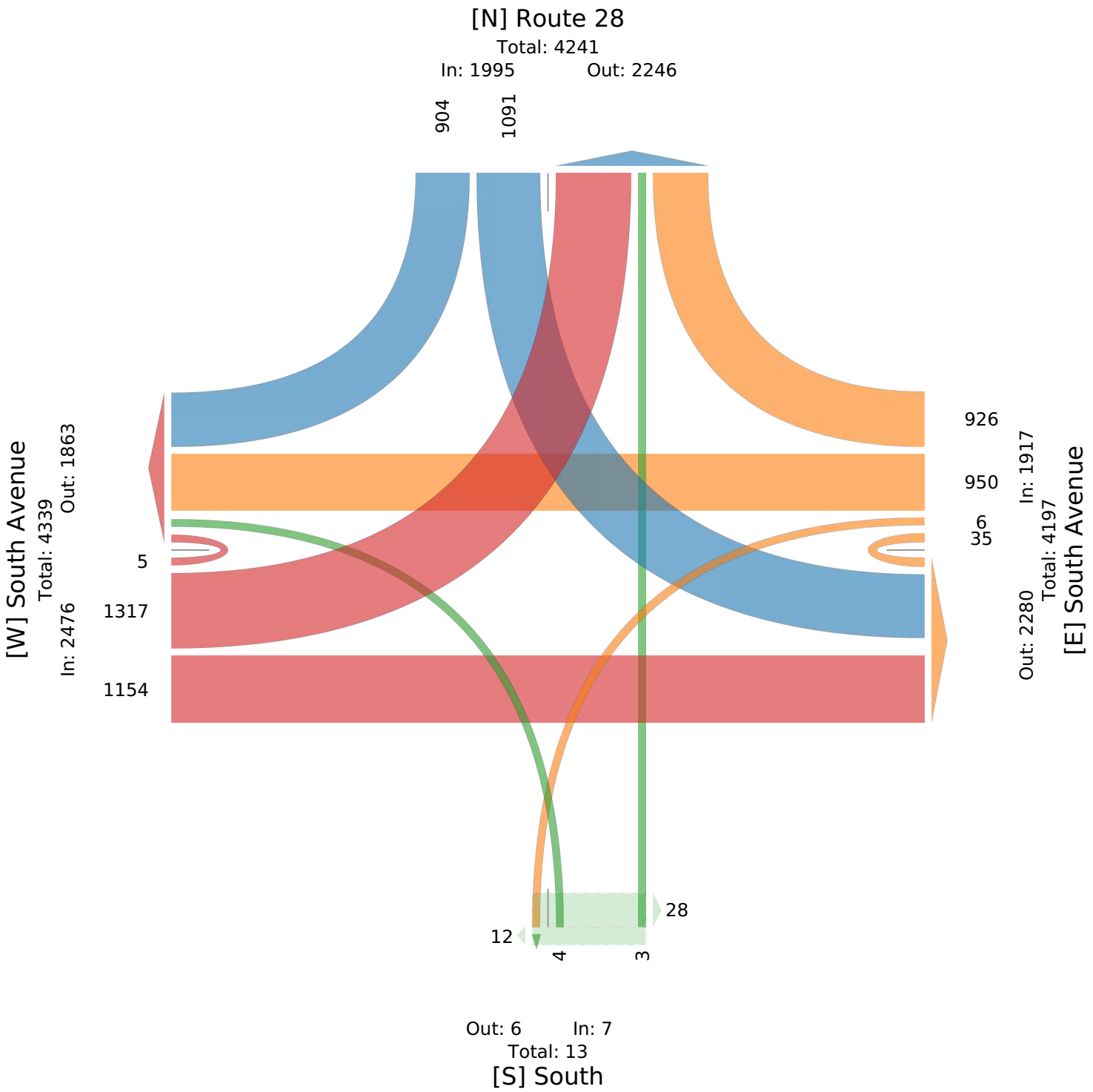
Leg	South						Route 28						South Avenue						South Avenue						
Direction	Northbound						Southbound						Eastbound						Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	3	2	0	0	**5**	14	338	0	351	0	**689**	0	476	373	0	0	**849**	0	0	329	317	14	**660**	0	**2203**
12:00PM	0	1	0	0	**1**	12	394	0	248	0	**642**	0	454	421	0	3	**878**	0	4	292	313	16	**625**	0	**2146**
1:00PM	1	0	0	0	**1**	14	359	0	305	0	**664**	0	387	360	0	2	**749**	0	2	329	296	5	**632**	0	**2046**
Total	4	3	0	0	**7**	40	1091	0	904	0	**1995**	0	1317	1154	0	5	**2476**	0	6	950	926	35	**1917**	0	**6395**
% Approach	57.1%	42.9%	0%	0%	**-**	-	54.7%	0%	45.3%	0%	**-**	-	53.2%	46.6%	0%	0.2%	**-**	-	0.3%	49.6%	48.3%	1.8%	**-**	-	-
% Total	0.1%	0%	0%	0%	**0.1%**	-	17.1%	0%	14.1%	0%	**31.2%**	-	20.6%	18.0%	0%	0.1%	**38.7%**	-	0.1%	14.9%	14.5%	0.5%	**30.0%**	-	-
Lights	4	3	0	0	**7**	-	1076	0	895	0	**1971**	-	1306	1146	0	5	**2457**	-	6	944	917	34	**1901**	-	6336
% Lights	100%	100%	0%	0%	**100%**	-	98.6%	0%	99.0%	0%	**98.8%**	-	99.2%	99.3%	0%	100%	**99.2%**	-	100%	99.4%	99.0%	97.1%	**99.2%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	1	0	1	0	**2**	-	2	1	0	0	**3**	-	0	1	1	0	**2**	-	7
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0.1%	0%	0.1%	0%	**0.1%**	-	0.2%	0.1%	0%	0%	**0.1%**	-	0%	0.1%	0.1%	0%	**0.1%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	14	0	8	0	**22**	-	9	7	0	0	**16**	-	0	5	8	1	**14**	-	52
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	1.3%	0%	0.9%	0%	**1.1%**	-	0.7%	0.6%	0%	0%	**0.6%**	-	0%	0.5%	0.9%	2.9%	**0.7%**	-	0.8%
Pedestrians	-	-	-	-	-	36	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	90.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	10.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

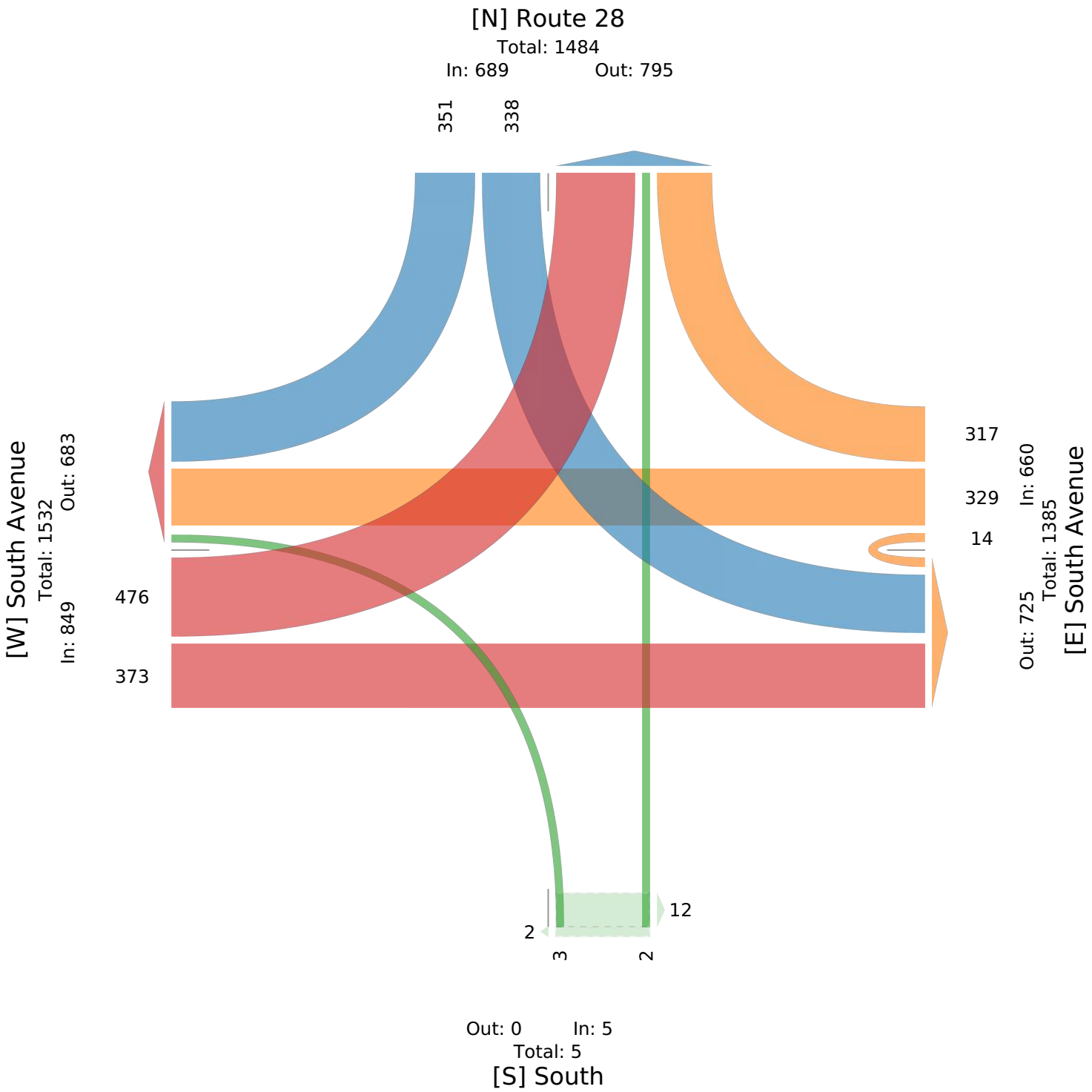
Leg Direction	South Northbound						Route 28 Southbound						South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	1	2	0	0	**3**	5	89	0	87	0	**176**	0	116	95	0	0	**211**	0	0	85	71	4	**160**	0	**550**
11:15AM	1	0	0	0	**1**	2	96	0	95	0	**191**	0	135	99	0	0	**234**	0	0	89	86	1	**176**	0	**602**
11:30AM	0	0	0	0	**0**	4	74	0	78	0	**152**	0	109	91	0	0	**200**	0	0	75	76	5	**156**	0	**508**
11:45AM	1	0	0	0	**1**	3	79	0	91	0	**170**	0	116	88	0	0	**204**	0	0	80	84	4	**168**	0	**543**
Total	3	2	0	0	**5**	14	338	0	351	0	**689**	0	476	373	0	0	**849**	0	0	329	317	14	**660**	0	**2203**
% Approach	60.0%	40.0%	0%	0%	**-**	-	49.1%	0%	50.9%	0%	**-**	-	56.1%	43.9%	0%	0%	**-**	-	0%	49.8%	48.0%	2.1%	**-**	-	-
% Total	0.1%	0.1%	0%	0%	**0.2%**	-	15.3%	0%	15.9%	0%	**31.3%**	-	21.6%	16.9%	0%	0%	**38.5%**	-	0%	14.9%	14.4%	0.6%	**30.0%**	-	-
PHF	0.750	0.250	-	-	**0.417**	-	0.880	-	0.924	-	**0.902**	-	0.881	0.942	-	-	**0.907**	-	-	0.924	0.922	0.700	**0.938**	-	0.915
Lights	3	2	0	0	**5**	-	335	0	348	0	**683**	-	472	369	0	0	**841**	-	0	325	315	13	**653**	-	2182
% Lights	100%	100%	0%	0%	**100%**	-	99.1%	0%	99.1%	0%	**99.1%**	-	99.2%	98.9%	0%	0%	**99.1%**	-	0%	98.8%	99.4%	92.9%	**98.9%**	-	99.0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	0	1	1	0	**2**	-	3
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.2%	0%	0%	0%	**0.1%**	-	0%	0.3%	0.3%	0%	**0.3%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	3	0	3	0	**6**	-	3	4	0	0	**7**	-	0	3	1	1	**5**	-	18
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0.9%	0%	0.9%	0%	**0.9%**	-	0.6%	1.1%	0%	0%	**0.8%**	-	0%	0.9%	0.3%	7.1%	**0.8%**	-	0.8%
Pedestrians	-	-	-	-	-	14	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

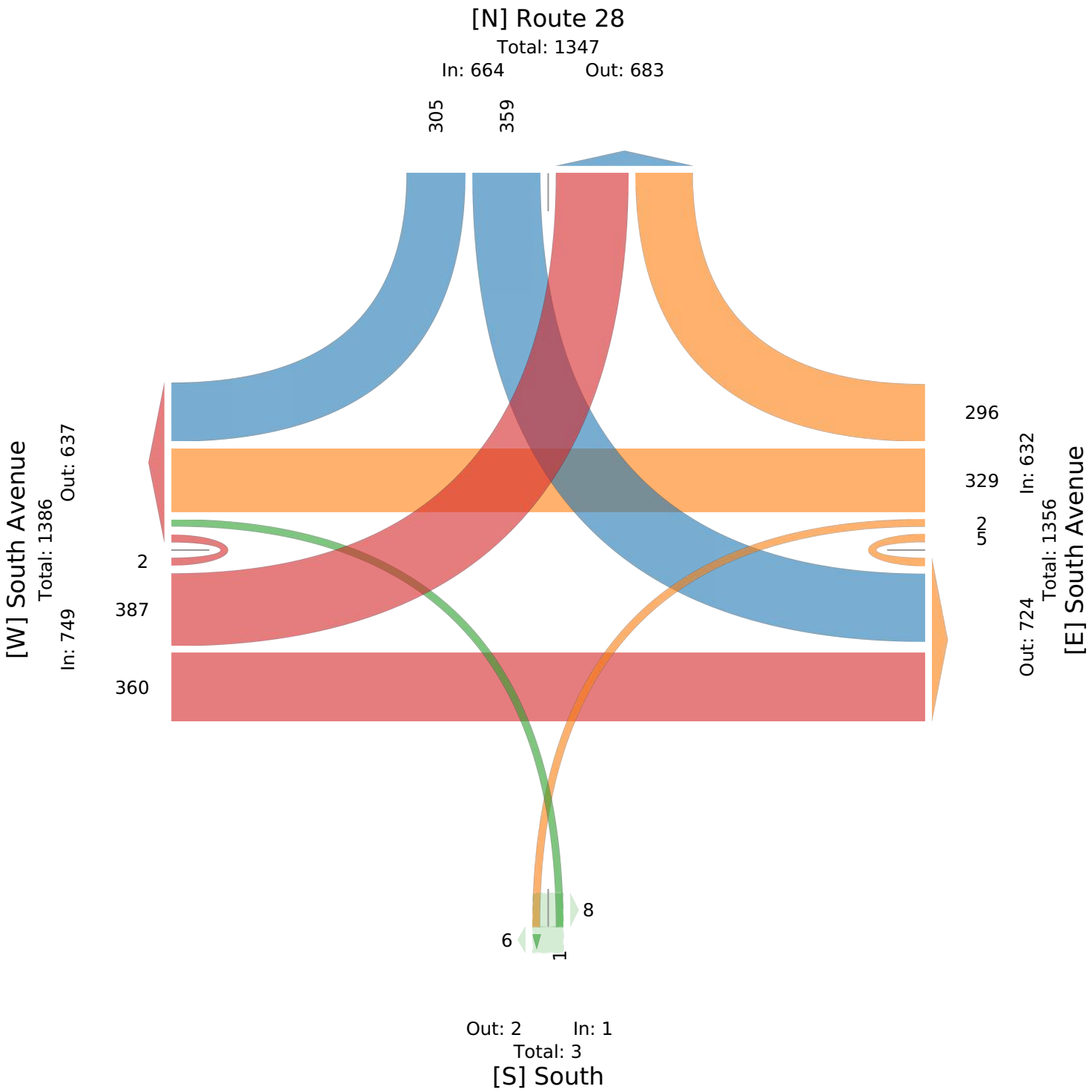
Leg Direction	South Northbound						Route 28 Southbound						South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	0	0	0	0	**0**	4	91	0	97	0	**188**	0	106	97	0	0	**203**	0	1	75	86	3	**165**	0	**556**
1:15PM	1	0	0	0	**1**	5	112	0	62	0	**174**	0	87	91	0	2	**180**	0	0	98	75	1	**174**	0	**529**
1:30PM	0	0	0	0	**0**	1	77	0	71	0	**148**	0	96	80	0	0	**176**	0	0	79	72	0	**151**	0	**475**
1:45PM	0	0	0	0	**0**	4	79	0	75	0	**154**	0	98	92	0	0	**190**	0	1	77	63	1	**142**	0	**486**
Total	1	0	0	0	**1**	14	359	0	305	0	**664**	0	387	360	0	2	**749**	0	2	329	296	5	**632**	0	**2046**
% Approach	100%	0%	0%	0%	**-**	-	54.1%	0%	45.9%	0%	**-**	-	51.7%	48.1%	0%	0.3%	**-**	-	0.3%	52.1%	46.8%	0.8%	**-**	-	-
% Total	0%	0%	0%	0%	**0%**	-	17.5%	0%	14.9%	0%	**32.5%**	-	18.9%	17.6%	0%	0.1%	**36.6%**	-	0.1%	16.1%	14.5%	0.2%	**30.9%**	-	-
PHF	0.250	-	-	-	**0.250**	-	0.801	-	0.786	-	**0.883**	-	0.913	0.928	-	0.250	**0.922**	-	0.500	0.839	0.860	0.417	**0.908**	-	0.920
Lights	1	0	0	0	**1**	-	354	0	303	0	**657**	-	384	356	0	2	**742**	-	2	327	293	5	**627**	-	2027
% Lights	100%	0%	0%	0%	**100%**	-	98.6%	0%	99.3%	0%	**98.9%**	-	99.2%	98.9%	0%	100%	**99.1%**	-	100%	99.4%	99.0%	100%	**99.2%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	1	0	0	**2**	-	0	0	0	0	**0**	-	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.3%	0.3%	0%	0%	**0.3%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	5	0	2	0	**7**	-	2	3	0	0	**5**	-	0	2	3	0	**5**	-	17
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	1.4%	0%	0.7%	0%	**1.1%**	-	0.5%	0.8%	0%	0%	**0.7%**	-	0%	0.6%	1.0%	0%	**0.8%**	-	0.8%
Pedestrians	-	-	-	-	-	11	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	78.6%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	21.4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

6. Route 28 and South Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965706, Location: 40.648494, -74.350288, Site Code: 6

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Summit Avenue Northbound							Parking Driveway Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 11:00AM	24	0	9	0	2	**35**	8	3	0	0	0	0	**3**	0
11:15AM	25	1	5	0	3	**34**	5	0	1	2	0	0	**3**	1
11:30AM	18	2	2	0	5	**27**	6	6	1	2	0	2	**11**	1
11:45AM	20	5	0	0	5	**30**	2	6	2	3	0	0	**11**	0
Hourly Total	87	8	16	0	15	**126**	21	15	4	7	0	2	**28**	2
12:00PM	20	1	6	0	1	**28**	4	2	0	3	0	3	**8**	5
12:15PM	32	2	6	0	6	**46**	11	0	4	1	0	0	**5**	0
12:30PM	15	4	2	0	4	**25**	11	0	1	0	0	2	**3**	0
12:45PM	23	6	7	0	0	**36**	6	2	0	2	0	1	**5**	3
Hourly Total	90	13	21	0	11	**135**	32	4	5	6	0	6	**21**	8
1:00PM	32	4	10	0	3	**49**	11	2	0	3	0	3	**8**	7
1:15PM	15	0	4	0	2	**21**	12	5	0	1	0	1	**7**	3
1:30PM	21	3	6	0	0	**30**	7	3	2	2	0	4	**11**	2
1:45PM	23	1	9	0	4	**37**	7	4	3	1	0	1	**9**	1
Hourly Total	91	8	29	0	9	**137**	37	14	5	7	0	9	**35**	13
Total	268	29	66	0	35	**398**	90	33	14	20	0	17	**84**	23
% Approach	67.3%	7.3%	16.6%	0%	8.8%	**-**	-	39.3%	16.7%	23.8%	0%	20.2%	**-**	-
% Total	6.7%	0.7%	1.7%	0%	0.9%	**10.0%**	-	0.8%	0.4%	0.5%	0%	0.4%	**2.1%**	-
Lights	266	29	64	0	35	**394**	-	33	14	20	0	17	**84**	-
% Lights	99.3%	100%	97.0%	0%	100%	**99.0%**	-	100%	100%	100%	0%	100%	**100%**	-
Articulated Trucks	1	0	0	0	0	**1**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0.4%	0%	0%	0%	0%	**0.3%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	1	0	2	0	0	**3**	-	0	0	0	0	0	**0**	-
% Buses and Single-Unit Trucks	0.4%	0%	3.0%	0%	0%	**0.8%**	-	0%	0%	0%	0%	0%	**0%**	-
Pedestrians	-	-	-	-	-	-	86	-	-	-	-	-	-	21
% Pedestrians	-	-	-	-	-	-	95.6%	-	-	-	-	-	-	91.3%
Bicycles on Crosswalk	-	-	-	-	-	-	4	-	-	-	-	-	-	2
% Bicycles on Crosswalk	-	-	-	-	-	-	4.4%	-	-	-	-	-	-	8.7%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

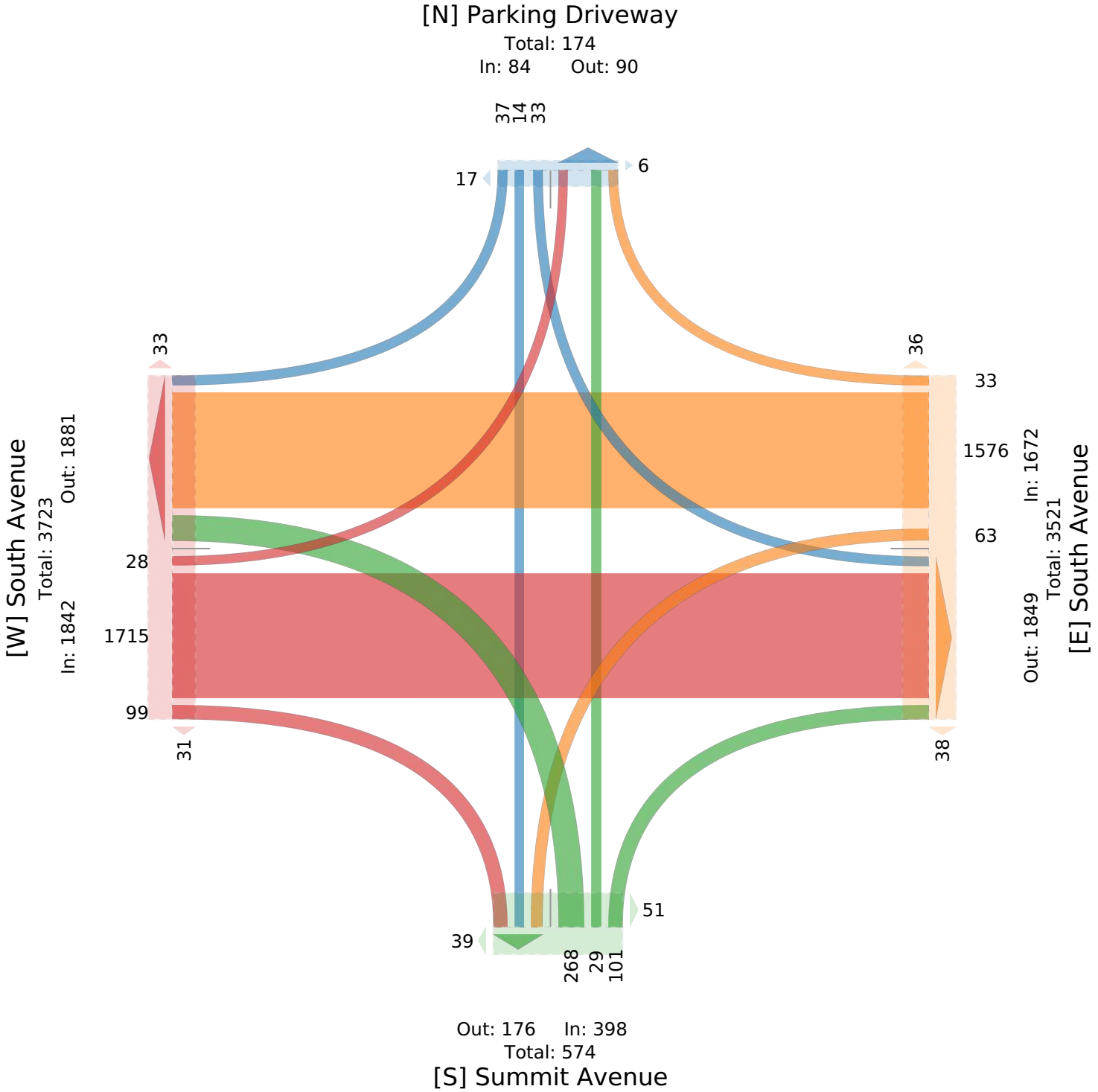
Leg Direction	South Avenue Eastbound							South Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:00AM	3	159	7	0	0	**169**	4	6	135	4	0	1	**146**	9	**353**
11:15AM	1	142	8	0	0	**151**	3	6	149	4	0	0	**159**	8	**347**
11:30AM	2	137	5	0	3	**147**	2	4	124	5	0	0	**133**	8	**318**
11:45AM	2	121	13	0	0	**136**	11	5	147	3	0	0	**155**	5	**332**
Hourly Total	8	559	33	0	3	**603**	20	21	555	16	0	1	**593**	30	**1350**
12:00PM	3	150	6	0	1	**160**	8	4	128	2	0	0	**134**	11	**330**
12:15PM	3	153	6	0	2	**164**	5	4	125	0	0	0	**129**	5	**344**
12:30PM	3	138	4	0	0	**145**	3	7	126	1	0	0	**134**	2	**307**
12:45PM	3	160	12	0	2	**177**	9	3	129	2	0	0	**134**	5	**352**
Hourly Total	12	601	28	0	5	**646**	25	18	508	5	0	0	**531**	23	**1333**
1:00PM	1	140	5	0	0	**146**	8	10	135	3	0	0	**148**	5	**351**
1:15PM	1	150	13	0	0	**164**	2	2	146	2	0	0	**150**	13	**342**
1:30PM	4	132	4	0	2	**142**	4	5	118	4	0	0	**127**	0	**310**
1:45PM	2	133	6	0	0	**141**	5	7	114	2	0	0	**123**	3	**310**
Hourly Total	8	555	28	0	2	**593**	19	24	513	11	0	0	**548**	21	**1313**
Total	28	1715	89	0	10	**1842**	64	63	1576	32	0	1	**1672**	74	**3996**
% Approach	1.5%	93.1%	4.8%	0%	0.5%	**-**	-	3.8%	94.3%	1.9%	0%	0.1%	**-**	-	**-**
% Total	0.7%	42.9%	2.2%	0%	0.3%	**46.1%**	-	1.6%	39.4%	0.8%	0%	0%	**41.8%**	-	**-**
Lights	28	1697	89	0	10	**1824**	-	63	1563	32	0	1	**1659**	-	3961
% Lights	100%	99.0%	100%	0%	100%	**99.0%**	-	100%	99.2%	100%	0%	100%	**99.2%**	-	99.1%
Articulated Trucks	0	1	0	0	0	**1**	-	0	0	0	0	0	**0**	-	2
% Articulated Trucks	0%	0.1%	0%	0%	0%	**0.1%**	-	0%	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	17	0	0	0	**17**	-	0	13	0	0	0	**13**	-	33
% Buses and Single-Unit Trucks	0%	1.0%	0%	0%	0%	**0.9%**	-	0%	0.8%	0%	0%	0%	**0.8%**	-	0.8%
Pedestrians	-	-	-	-	-	-	60	-	-	-	-	-	-	74	
% Pedestrians	-	-	-	-	-	-	93.8%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	4	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	6.3%	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12:45 PM - 1:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

Provided by: Imperial Traffic & Data Collection
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Cherry Hill, NJ, 08003, US

Leg Direction	Summit Avenue Northbound							Parking Driveway Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 12:45PM	23	6	7	0	0	**36**	6	2	0	2	0	1	**5**	3
1:00PM	32	4	10	0	3	**49**	11	2	0	3	0	3	**8**	7
1:15PM	15	0	4	0	2	**21**	12	5	0	1	0	1	**7**	3
1:30PM	21	3	6	0	0	**30**	7	3	2	2	0	4	**11**	2
Total	91	13	27	0	5	**136**	36	12	2	8	0	9	**31**	15
% Approach	66.9%	9.6%	19.9%	0%	3.7%	**-**	-	38.7%	6.5%	25.8%	0%	29.0%	**-**	-
% Total	6.7%	1.0%	2.0%	0%	0.4%	**10.0%**	-	0.9%	0.1%	0.6%	0%	0.7%	**2.3%**	-
PHF	0.711	0.542	0.675	-	0.417	**0.694**	-	0.600	0.250	0.667	-	0.563	**0.705**	-
Lights	91	13	26	0	5	**135**	-	12	2	8	0	9	**31**	-
% Lights	100%	100%	96.3%	0%	100%	**99.3%**	-	100%	100%	100%	0%	100%	**100%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	0	1	0	0	**1**	-	0	0	0	0	0	**0**	-
% Buses and Single-Unit Trucks	0%	0%	3.7%	0%	0%	**0.7%**	-	0%	0%	0%	0%	0%	**0%**	-
Pedestrians	-	-	-	-	-	-	35	-	-	-	-	-	-	15
% Pedestrians	-	-	-	-	-	-	97.2%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	1	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	2.8%	-	-	-	-	-	-	0%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12:45 PM - 1:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	South Avenue Eastbound							South Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 12:45PM	3	160	12	0	2	**177**	9	3	129	2	0	0	**134**	5	**352**
1:00PM	1	140	5	0	0	**146**	8	10	135	3	0	0	**148**	5	**351**
1:15PM	1	150	13	0	0	**164**	2	2	146	2	0	0	**150**	13	**342**
1:30PM	4	132	4	0	2	**142**	4	5	118	4	0	0	**127**	0	**310**
Total	9	582	34	0	4	**629**	23	20	528	11	0	0	**559**	23	**1355**
% Approach	1.4%	92.5%	5.4%	0%	0.6%	**-**	-	3.6%	94.5%	2.0%	0%	0%	**-**	-	**-**
% Total	0.7%	43.0%	2.5%	0%	0.3%	**46.4%**	-	1.5%	39.0%	0.8%	0%	0%	**41.3%**	-	**-**
PHF	0.563	0.909	0.654	-	0.500	**0.888**	-	0.500	0.904	0.688	-	-	**0.932**	-	0.962
Lights	9	575	34	0	4	**622**	-	20	524	11	0	0	**555**	-	1343
% Lights	100%	98.8%	100%	0%	100%	**98.9%**	-	100%	99.2%	100%	0%	0%	**99.3%**	-	99.1%
Articulated Trucks	0	1	0	0	0	**1**	-	0	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0.2%	0%	0%	0%	**0.2%**	-	0%	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	6	0	0	0	**6**	-	0	4	0	0	0	**4**	-	11
% Buses and Single-Unit Trucks	0%	1.0%	0%	0%	0%	**1.0%**	-	0%	0.8%	0%	0%	0%	**0.7%**	-	0.8%
Pedestrians	-	-	-	-	-	-	23	-	-	-	-	-	-	23	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12:45 PM - 1:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

Provided by: Imperial Traffic & Data Collection
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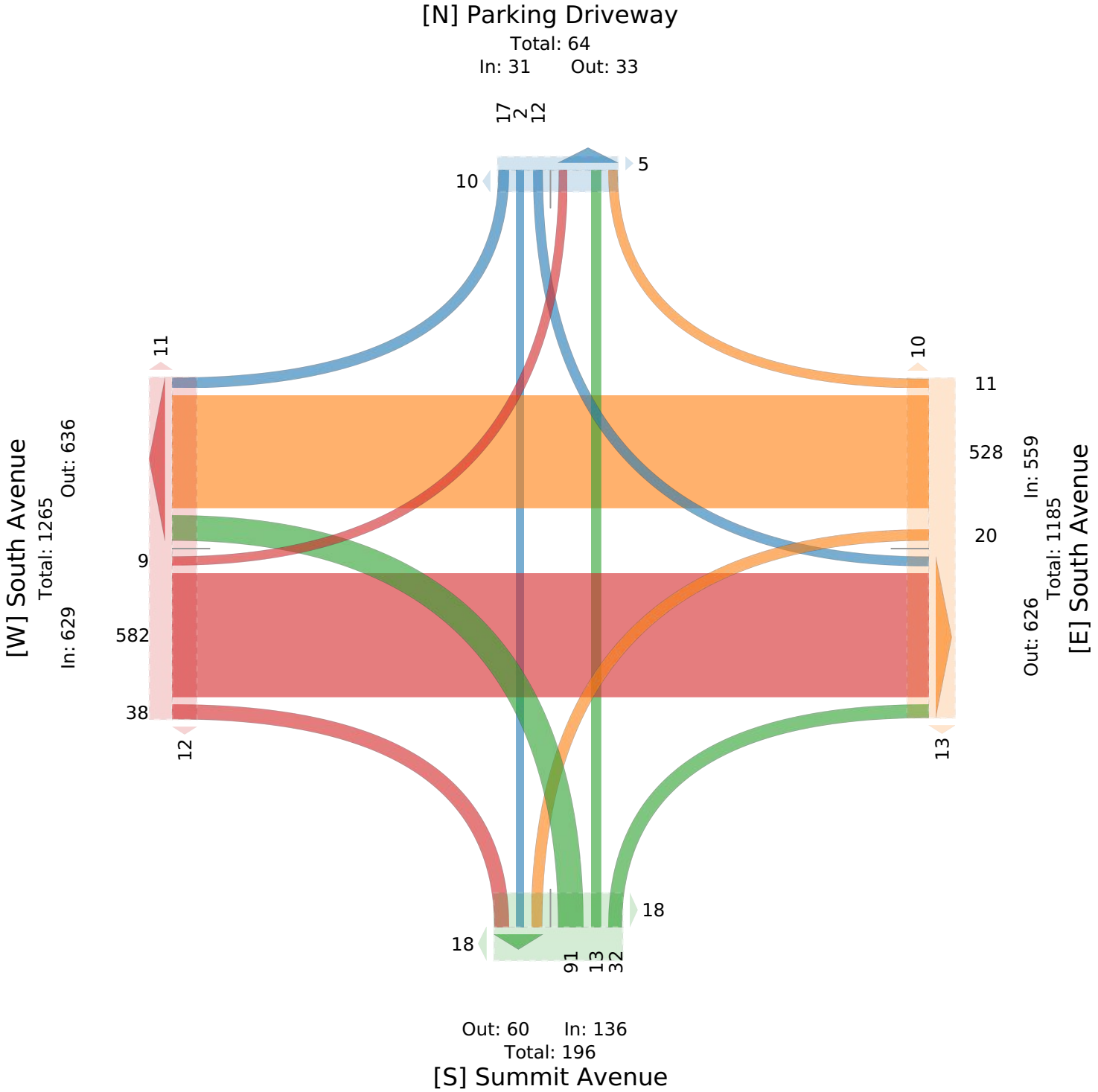

7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

Provided by: Imperial Traffic & Data Collection
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Leg Direction	Summit Avenue Northbound							Parking Driveway Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 1:00PM	32	4	10	0	3	**49**	11	2	0	3	0	3	**8**	7
1:15PM	15	0	4	0	2	**21**	12	5	0	1	0	1	**7**	3
1:30PM	21	3	6	0	0	**30**	7	3	2	2	0	4	**11**	2
1:45PM	23	1	9	0	4	**37**	7	4	3	1	0	1	**9**	1
Total	91	8	29	0	9	**137**	37	14	5	7	0	9	**35**	13
% Approach	66.4%	5.8%	21.2%	0%	6.6%	**-**	-	40.0%	14.3%	20.0%	0%	25.7%	**-**	-
% Total	6.9%	0.6%	2.2%	0%	0.7%	**10.4%**	-	1.1%	0.4%	0.5%	0%	0.7%	**2.7%**	-
PHF	0.711	0.500	0.725	-	0.563	**0.699**	-	0.700	0.417	0.583	-	0.563	**0.795**	-
Lights	91	8	29	0	9	**137**	-	14	5	7	0	9	**35**	-
% Lights	100%	100%	100%	0%	100%	**100%**	-	100%	100%	100%	0%	100%	**100%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Pedestrians	-	-	-	-	-	-	37	-	-	-	-	-	-	13
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

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Leg Direction	South Avenue Eastbound							South Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 1:00PM	1	140	5	0	0	**146**	8	10	135	3	0	0	**148**	5	**351**
1:15PM	1	150	13	0	0	**164**	2	2	146	2	0	0	**150**	13	**342**
1:30PM	4	132	4	0	2	**142**	4	5	118	4	0	0	**127**	0	**310**
1:45PM	2	133	6	0	0	**141**	5	7	114	2	0	0	**123**	3	**310**
Total	8	555	28	0	2	**593**	19	24	513	11	0	0	**548**	21	**1313**
% Approach	1.3%	93.6%	4.7%	0%	0.3%	**-**	-	4.4%	93.6%	2.0%	0%	0%	**-**	-	**-**
% Total	0.6%	42.3%	2.1%	0%	0.2%	**45.2%**	-	1.8%	39.1%	0.8%	0%	0%	**41.7%**	-	**-**
PHF	0.500	0.925	0.538	-	0.250	**0.904**	-	0.600	0.878	0.688	-	-	**0.913**	-	0.935
Lights	8	548	28	0	2	**586**	-	24	507	11	0	0	**542**	-	1300
% Lights	100%	98.7%	100%	0%	100%	**98.8%**	-	100%	98.8%	100%	0%	0%	**98.9%**	-	99.0%
Articulated Trucks	0	1	0	0	0	**1**	-	0	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0.2%	0%	0%	0%	**0.2%**	-	0%	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	6	0	0	0	**6**	-	0	6	0	0	0	**6**	-	12
% Buses and Single-Unit Trucks	0%	1.1%	0%	0%	0%	**1.0%**	-	0%	1.2%	0%	0%	0%	**1.1%**	-	0.9%
Pedestrians	-	-	-	-	-	-	19	-	-	-	-	-	-	21	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

7. Summit Avenue and South Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965700, Location: 40.648688, -74.347509, Site Code: 7

Provided by: Imperial Traffic & Data Collection
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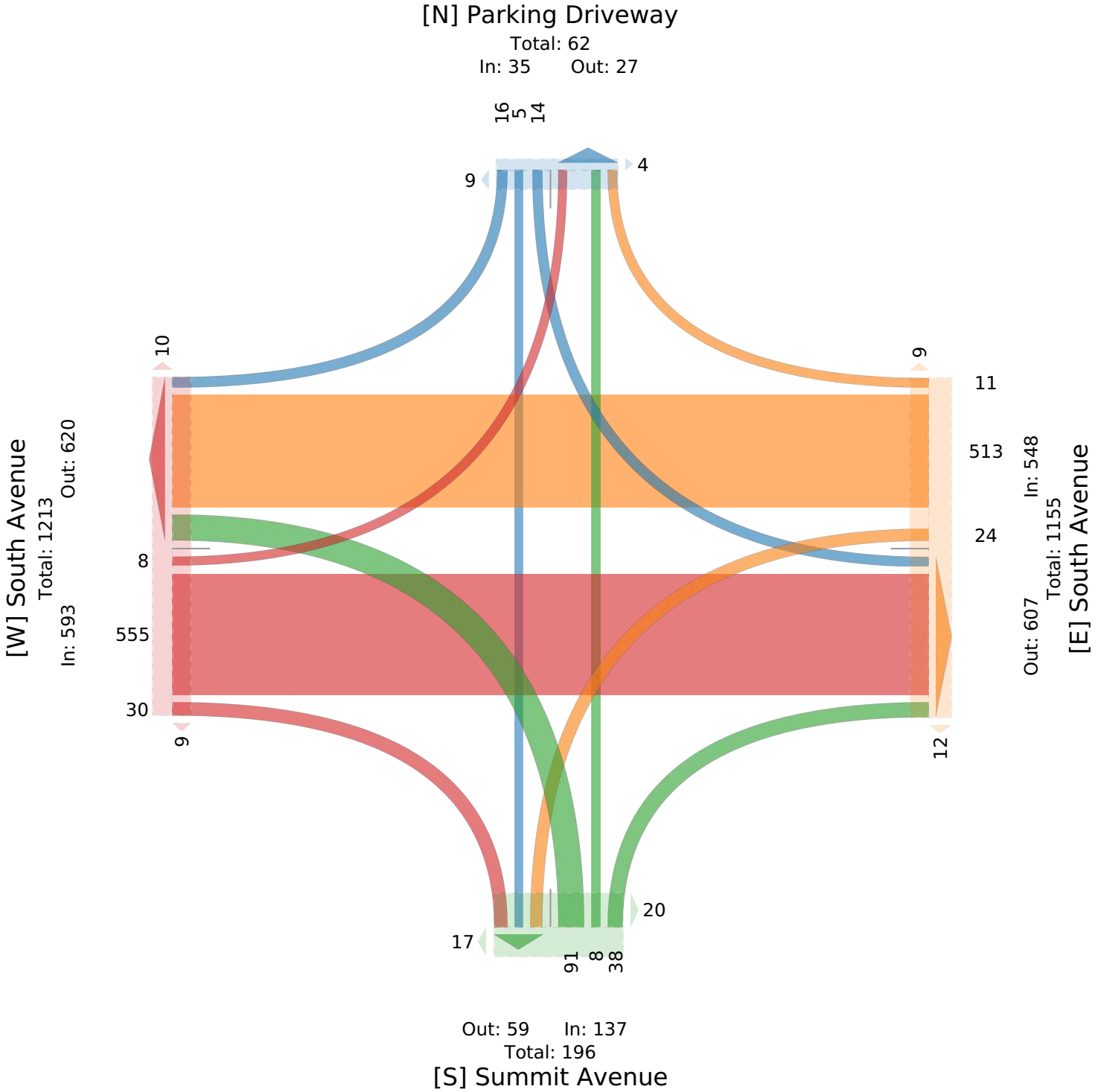



Imperial Traffic & Data Collection
www.imperialtdc.com
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Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648688, -74.347509

Count Name: 7. Summit Avenue and South Avenue
Site Code: 7
Start Date: 06/18/2022

Turning Movement Data

Start Time	South Avenue Eastbound							South Avenue Westbound							Summit Avenue Northbound							Parking Driveway Southbound							
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	Int. Total
11:00 AM	0	3	159	7	0	4	169	0	6	135	4	1	9	146	0	24	0	9	2	8	35	0	3	0	0	0	0	3	353
11:15 AM	0	1	142	8	0	3	151	0	6	149	4	0	8	159	0	25	1	5	3	5	34	0	0	1	2	0	1	3	347
11:30 AM	0	2	137	5	3	2	147	0	4	124	5	0	8	133	0	18	2	2	5	6	27	0	6	1	2	2	1	11	318
11:45 AM	0	2	121	13	0	11	136	0	5	147	3	0	5	155	0	20	5	0	5	2	30	0	6	2	3	0	0	11	332
Hourly Total	0	8	559	33	3	20	603	0	21	555	16	1	30	593	0	87	8	16	15	21	126	0	15	4	7	2	2	28	1350
12:00 PM	0	3	150	6	1	8	160	0	4	128	2	0	11	134	0	20	1	6	1	4	28	0	2	0	3	3	5	8	330
12:15 PM	0	3	153	6	2	5	164	0	4	125	0	0	5	129	0	32	2	6	6	11	46	0	0	4	1	0	0	5	344
12:30 PM	0	3	138	4	0	3	145	0	7	126	1	0	2	134	0	15	4	2	4	11	25	0	0	1	0	2	0	3	307
12:45 PM	0	3	160	12	2	9	177	0	3	129	2	0	5	134	0	23	6	7	0	6	36	0	2	0	2	1	3	5	352
Hourly Total	0	12	601	28	5	25	646	0	18	508	5	0	23	531	0	90	13	21	11	32	135	0	4	5	6	6	8	21	1333
1:00 PM	0	1	140	5	0	8	146	0	10	135	3	0	5	148	0	32	4	10	3	11	49	0	2	0	3	3	7	8	351
1:15 PM	0	1	150	13	0	2	164	0	2	146	2	0	13	150	0	15	0	4	2	12	21	0	5	0	1	1	3	7	342
1:30 PM	0	4	132	4	2	4	142	0	5	118	4	0	0	127	0	21	3	6	0	7	30	0	3	2	2	4	2	11	310
1:45 PM	0	2	133	6	0	5	141	0	7	114	2	0	3	123	0	23	1	9	4	7	37	0	4	3	1	1	1	9	310
Hourly Total	0	8	555	28	2	19	593	0	24	513	11	0	21	548	0	91	8	29	9	37	137	0	14	5	7	9	13	35	1313
Grand Total	0	28	1715	89	10	64	1842	0	63	1576	32	1	74	1672	0	268	29	66	35	90	398	0	33	14	20	17	23	84	3996
Approach %	0.0	1.5	93.1	4.8	0.5	-	-	0.0	3.8	94.3	1.9	0.1	-	-	0.0	67.3	7.3	16.6	8.8	-	-	0.0	39.3	16.7	23.8	20.2	-	-	-
Total %	0.0	0.7	42.9	2.2	0.3	-	46.1	0.0	1.6	39.4	0.8	0.0	-	41.8	0.0	6.7	0.7	1.7	0.9	-	10.0	0.0	0.8	0.4	0.5	0.4	-	2.1	-
Lights	0	28	1697	89	10	-	1824	0	63	1563	32	1	-	1659	0	266	29	64	35	-	394	0	33	14	20	17	-	84	3961
% Lights	-	100.0	99.0	100.0	100.0	-	99.0	-	100.0	99.2	100.0	100.0	-	99.2	-	99.3	100.0	97.0	100.0	-	99.0	-	100.0	100.0	100.0	100.0	-	100.0	99.1
Mediums	0	0	17	0	0	-	17	0	0	13	0	0	-	13	0	1	0	2	0	-	3	0	0	0	0	0	-	0	33
% Mediums	-	0.0	1.0	0.0	0.0	-	0.9	-	0.0	0.8	0.0	0.0	-	0.8	-	0.4	0.0	3.0	0.0	-	0.8	-	0.0	0.0	0.0	0.0	-	0.0	0.8
Articulated Trucks	0	0	1	0	0	-	1	0	0	0	0	0	-	0	0	1	0	0	0	-	1	0	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.1	0.0	0.0	-	0.1	-	0.0	0.0	0.0	0.0	-	0.0	-	0.4	0.0	0.0	0.0	-	0.3	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	-	4	-	-	-	-	-	-	0	-	-	-	-	-	-	4	-	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	-	6.3	-	-	-	-	-	-	0.0	-	-	-	-	-	-	4.4	-	-	-	-	-	-	8.7	-	-
Pedestrians	-	-	-	-	-	60	-	-	-	-	-	-	74	-	-	-	-	-	-	86	-	-	-	-	-	-	21	-	-
% Pedestrians	-	-	-	-	-	93.8	-	-	-	-	-	-	100.0	-	-	-	-	-	-	95.6	-	-	-	-	-	-	91.3	-	-

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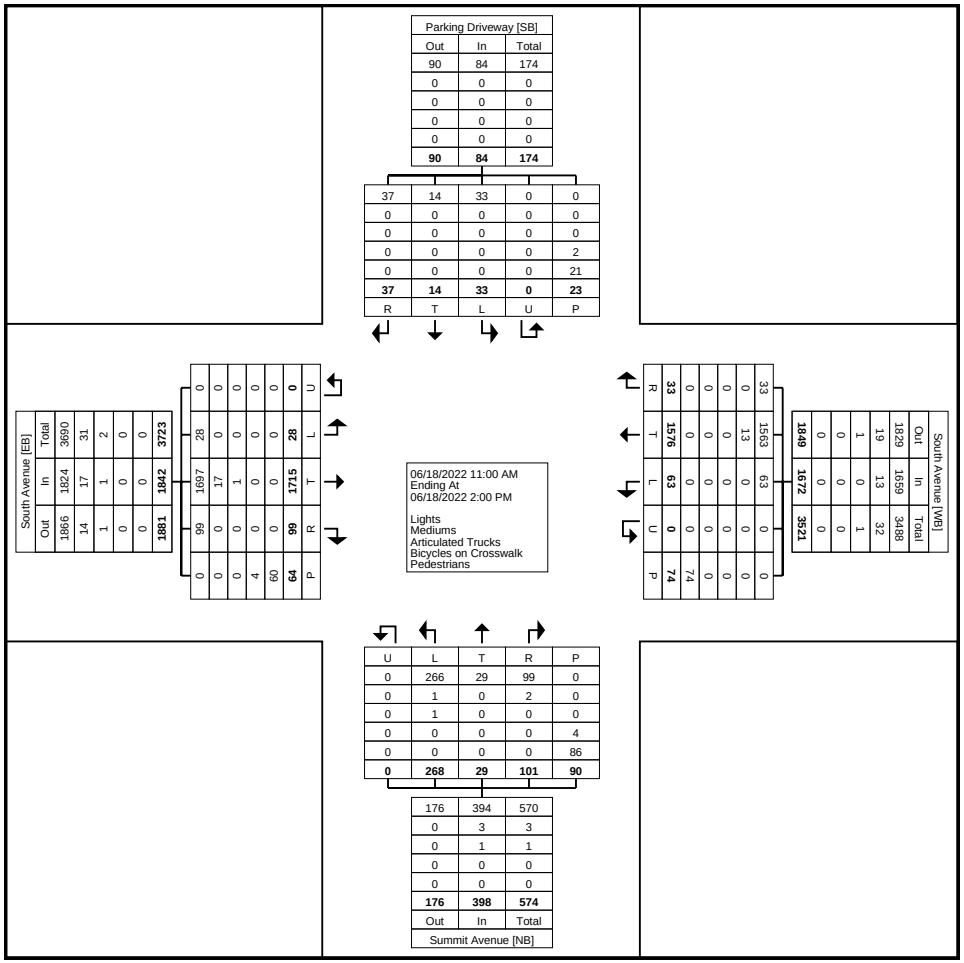
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648688, -74.347509

Count Name: 7. Summit Avenue and South Avenue
Site Code: 7
Start Date: 06/18/2022



Turning Movement Data Plot

Imperial Traffic & Data Collection
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Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648688, -74.347509

Count Name: 7. Summit Avenue and South Avenue
Site Code: 7
Start Date: 06/18/2022

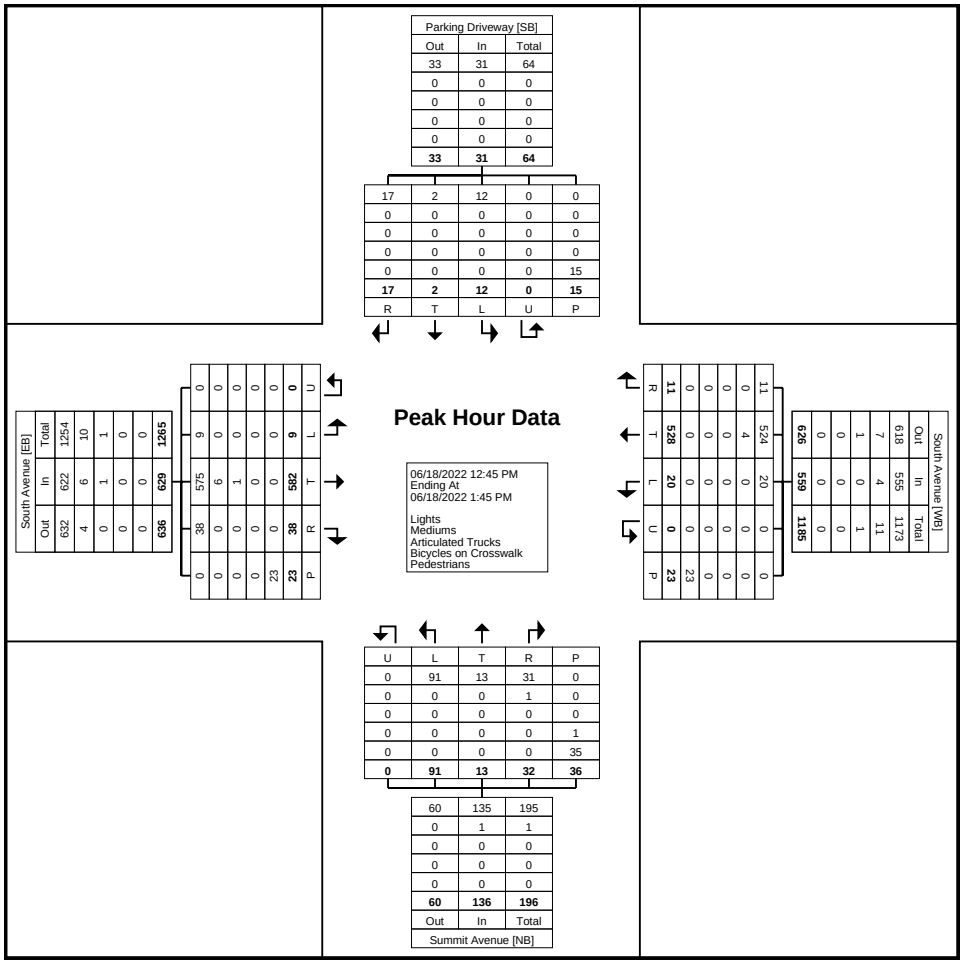
Turning Movement Peak Hour Data (12:45 PM)

Start Time	South Avenue Eastbound							South Avenue Westbound							Summit Avenue Northbound							Parking Driveway Southbound							
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	Int. Total
12:45 PM	0	3	160	12	2	9	177	0	3	129	2	0	5	134	0	23	6	7	0	6	36	0	2	0	2	1	3	5	352
1:00 PM	0	1	140	5	0	8	146	0	10	135	3	0	5	148	0	32	4	10	3	11	49	0	2	0	3	3	7	8	351
1:15 PM	0	1	150	13	0	2	164	0	2	146	2	0	13	150	0	15	0	4	2	12	21	0	5	0	1	1	3	7	342
1:30 PM	0	4	132	4	2	4	142	0	5	118	4	0	0	127	0	21	3	6	0	7	30	0	3	2	2	4	2	11	310
Total	0	9	582	34	4	23	629	0	20	528	11	0	23	559	0	91	13	27	5	36	136	0	12	2	8	9	15	31	1355
Approach %	0.0	1.4	92.5	5.4	0.6	-	-	0.0	3.6	94.5	2.0	0.0	-	-	0.0	66.9	9.6	19.9	3.7	-	-	0.0	38.7	6.5	25.8	29.0	-	-	-
Total %	0.0	0.7	43.0	2.5	0.3	-	46.4	0.0	1.5	39.0	0.8	0.0	-	41.3	0.0	6.7	1.0	2.0	0.4	-	10.0	0.0	0.9	0.1	0.6	0.7	-	2.3	-
PHF	0.000	0.563	0.909	0.654	0.500	-	0.888	0.000	0.500	0.904	0.688	0.000	-	0.932	0.000	0.711	0.542	0.675	0.417	-	0.694	0.000	0.600	0.250	0.667	0.563	-	0.705	0.962
Lights	0	9	575	34	4	-	622	0	20	524	11	0	-	555	0	91	13	26	5	-	135	0	12	2	8	9	-	31	1343
% Lights	-	100.0	98.8	100.0	100.0	-	98.9	-	100.0	99.2	100.0	-	-	99.3	-	100.0	100.0	96.3	100.0	-	99.3	-	100.0	100.0	100.0	100.0	-	100.0	99.1
Mediums	0	0	6	0	0	-	6	0	0	4	0	0	-	4	0	0	0	1	0	-	1	0	0	0	0	0	-	0	11
% Mediums	-	0.0	1.0	0.0	0.0	-	1.0	-	0.0	0.8	0.0	-	-	0.7	-	0.0	0.0	3.7	0.0	-	0.7	-	0.0	0.0	0.0	0.0	-	0.0	0.8
Articulated Trucks	0	0	1	0	0	-	1	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.2	0.0	0.0	-	0.2	-	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	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	2.8	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	23	-	-	-	-	-	-	23	-	-	-	-	-	-	35	-	-	-	-	-	-	15	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	97.2	-	-	-	-	-	-	100.0	-	-

Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648688, -74.347509

Count Name: 7. Summit Avenue and South Avenue
Site Code: 7
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (12:45 PM)

8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Leg	Central Avenue								Central Avenue								South Avenue							
Direction	Northbound								Southbound								Eastbound							
Time	HL	L	T	R	U	RR	**App**	Ped*	L	T	BR	R	U	RR	**App**	Ped*	L	T	R	HR	U	HRR	**App**	Ped*
2022-06-18 11:00AM	3	35	104	8	0	0	**150**	1	35	104	28	15	0	8	**190**	4	32	112	38	2	1	0	**185**	2
11:15AM	0	31	100	4	0	4	**139**	0	45	100	16	15	0	3	**179**	4	26	76	43	4	0	0	**149**	1
11:30AM	1	25	130	5	0	1	**162**	0	36	95	20	20	0	4	**175**	3	27	89	47	2	0	1	**166**	2
11:45AM	0	39	109	6	0	0	**154**	0	52	86	25	25	0	4	**192**	3	34	93	41	2	0	0	**170**	4
Hourly Total	4	130	443	23	0	5	**605**	1	168	385	89	75	0	19	**736**	14	119	370	169	10	1	1	**670**	9
12:00PM	0	21	92	10	0	0	**123**	2	44	124	25	16	0	3	**212**	2	34	79	43	3	0	0	**159**	0
12:15PM	3	22	110	8	0	0	**143**	0	47	89	33	25	0	3	**197**	2	34	102	28	1	0	1	**166**	0
12:30PM	1	32	123	9	0	0	**165**	2	49	105	23	15	0	1	**193**	1	36	88	36	4	0	0	**164**	6
12:45PM	1	39	73	10	0	0	**123**	2	37	95	25	19	0	9	**185**	8	26	107	39	1	0	0	**173**	1
Hourly Total	5	114	398	37	0	0	**554**	6	177	413	106	75	0	16	**787**	13	130	376	146	9	0	1	**662**	7
1:00PM	1	27	76	6	0	1	**111**	0	41	112	19	16	0	5	**193**	0	37	99	39	0	0	0	**175**	1
1:15PM	0	33	127	8	0	0	**168**	1	29	115	28	23	0	1	**196**	1	21	94	50	2	0	0	**167**	0
1:30PM	0	25	105	9	0	1	**140**	0	42	112	29	11	0	0	**194**	1	32	82	37	0	0	0	**151**	4
1:45PM	1	20	117	7	0	0	**145**	0	41	98	22	7	0	1	**169**	1	26	88	41	2	0	0	**157**	0
Hourly Total	2	105	425	30	0	2	**564**	1	153	437	98	57	0	7	**752**	3	116	363	167	4	0	0	**650**	5
Total	11	349	1266	90	0	7	**1723**	8	498	1235	293	207	0	42	**2275**	30	365	1109	482	23	1	2	**1982**	21
% Approach	0.6%	20.3%	73.5%	5.2%	0%	0.4%	**-**	-	21.9%	54.3%	12.9%	9.1%	0%	1.8%	**-**	-	18.4%	56.0%	24.3%	1.2%	0.1%	0.1%	**-**	-
% Total	0.1%	4.5%	16.3%	1.2%	0%	0.1%	**22.2%**	-	6.4%	15.9%	3.8%	2.7%	0%	0.5%	**29.4%**	-	4.7%	14.3%	6.2%	0.3%	0%	0%	**25.6%**	-
Lights	11	347	1246	88	0	7	**1699**	-	493	1215	291	207	0	42	**2248**	-	365	1090	480	23	1	2	**1961**	-
% Lights	100%	99.4%	98.4%	97.8%	0%	100%	**98.6%**	-	99.0%	98.4%	99.3%	100%	0%	100%	**98.8%**	-	100%	98.3%	99.6%	100%	100%	100%	**98.9%**	-
Articulated Trucks	0	0	1	0	0	0	**1**	-	1	1	0	0	0	0	**2**	-	0	1	0	0	0	0	**1**	-
% Articulated Trucks	0%	0%	0.1%	0%	0%	0%	**0.1%**	-	0.2%	0.1%	0%	0%	0%	0%	**0.1%**	-	0%	0.1%	0%	0%	0%	0%	**0.1%**	-
Buses and Single-Unit Trucks	0	2	19	2	0	0	**23**	-	4	19	2	0	0	0	**25**	-	0	18	2	0	0	0	**20**	-
% Buses and Single-Unit Trucks	0%	0.6%	1.5%	2.2%	0%	0%	**1.3%**	-	0.8%	1.5%	0.7%	0%	0%	0%	**1.1%**	-	0%	1.6%	0.4%	0%	0%	0%	**1.0%**	-
Pedestrians	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	16
% Pedestrians	-	-	-	-	-	-	-	87.5%	-	-	-	-	-	-	-	86.7%	-	-	-	-	-	-	-	76.2%
Bicycles on Crosswalk	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	5
% Bicycles on Crosswalk	-	-	-	-	-	-	-	12.5%	-	-	-	-	-	-	-	13.3%	-	-	-	-	-	-	-	23.8%

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, HRR: Hard right on red, L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

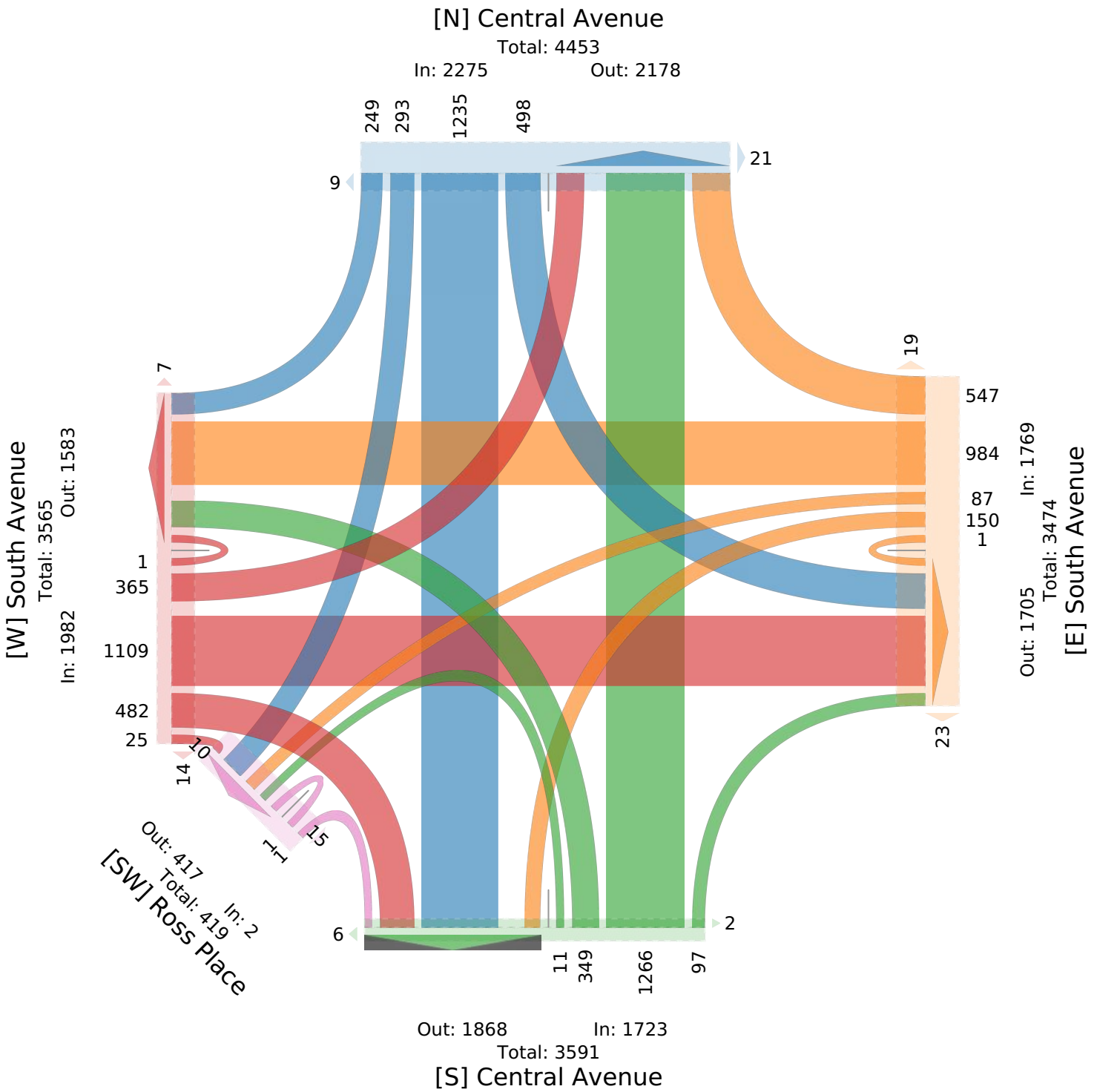
Leg Direction	South Avenue Westbound								Ross Place Northeastbound								
Time	L	BL	T	R	U	RR	**App**	Ped*	HL	BL	BR	HR	U	HRR	**App**	Ped*	**Int**
2022-06-18 11:00AM	15	3	93	48	0	11	**170**	2	0	0	0	0	0	0	**0**	2	**695**
11:15AM	11	11	97	42	0	10	**171**	6	0	0	0	0	0	0	**0**	2	**638**
11:30AM	17	7	86	46	1	6	**163**	3	0	0	0	0	0	0	**0**	1	**666**
11:45AM	16	5	77	53	0	3	**154**	6	0	0	0	0	0	0	**0**	3	**670**
Hourly Total	59	26	353	189	1	30	**658**	17	0	0	0	0	0	0	**0**	8	**2669**
12:00PM	22	6	84	47	0	3	**162**	6	0	0	0	0	0	0	**0**	1	**656**
12:15PM	8	7	66	36	0	6	**123**	2	0	0	0	0	0	0	**0**	2	**629**
12:30PM	5	5	73	43	0	2	**128**	3	0	0	0	0	0	0	**0**	9	**650**
12:45PM	15	9	76	43	0	7	**150**	6	0	0	0	0	0	1	**1**	1	**632**
Hourly Total	50	27	299	169	0	18	**563**	17	0	0	0	0	0	1	**1**	13	**2567**
1:00PM	8	11	79	32	0	0	**130**	2	0	0	0	0	1	0	**1**	0	**610**
1:15PM	10	11	94	31	0	0	**146**	1	0	0	0	0	0	0	**0**	1	**677**
1:30PM	11	4	76	35	0	1	**127**	3	0	0	0	0	0	0	**0**	1	**612**
1:45PM	12	8	83	41	0	1	**145**	2	0	0	0	0	0	0	**0**	2	**616**
Hourly Total	41	34	332	139	0	2	**548**	8	0	0	0	0	1	0	**1**	4	**2515**
Total	150	87	984	497	1	50	**1769**	42	0	0	0	0	1	1	**2**	25	**7751**
% Approach	8.5%	4.9%	55.6%	28.1%	0.1%	2.8%	**-**	-	0%	0%	0%	0%	50.0%	50.0%	**-**	-	**-**
% Total	1.9%	1.1%	12.7%	6.4%	0%	0.6%	**22.8%**	-	0%	0%	0%	0%	0%	0%	**0%**	-	**-**
Lights	150	85	973	493	1	50	**1752**	-	0	0	0	0	1	1	**2**	-	7662
% Lights	100%	97.7%	98.9%	99.2%	100%	100%	**99.0%**	-	0%	0%	0%	0%	100%	100%	**100%**	-	98.9%
Articulated Trucks	0	0	0	0	0	0	**0**	-	0	0	0	0	0	0	**0**	-	4
% Articulated Trucks	0%	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	2	11	4	0	0	**17**	-	0	0	0	0	0	0	**0**	-	85
% Buses and Single-Unit Trucks	0%	2.3%	1.1%	0.8%	0%	0%	**1.0%**	-	0%	0%	0%	0%	0%	0%	**0%**	-	1.1%
Pedestrians	-	-	-	-	-	-	-	39	-	-	-	-	-	-	-	16	
% Pedestrians	-	-	-	-	-	-	-	92.9%	-	-	-	-	-	-	-	64.0%	-
Bicycles on Crosswalk	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	9	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	7.1%	-	-	-	-	-	-	-	36.0%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, HRR: Hard right on red, L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Leg	Central Avenue								Central Avenue								South Avenue							
Direction	Northbound								Southbound								Eastbound							
Time	HL	L	T	R	U	RR	**App**	Ped*	L	T	BR	R	U	RR	**App**	Ped*	L	T	R	HR	U	HRR	**App**	Ped*
2022-06-18 11:00AM	3	35	104	8	0	0	**150**	1	35	104	28	15	0	8	**190**	4	32	112	38	2	1	0	**185**	2
11:15AM	0	31	100	4	0	4	**139**	0	45	100	16	15	0	3	**179**	4	26	76	43	4	0	0	**149**	1
11:30AM	1	25	130	5	0	1	**162**	0	36	95	20	20	0	4	**175**	3	27	89	47	2	0	1	**166**	2
11:45AM	0	39	109	6	0	0	**154**	0	52	86	25	25	0	4	**192**	3	34	93	41	2	0	0	**170**	4
Total	4	130	443	23	0	5	**605**	1	168	385	89	75	0	19	**736**	14	119	370	169	10	1	1	**670**	9
% Approach	0.7%	21.5%	73.2%	3.8%	0%	0.8%	**-**	-	22.8%	52.3%	12.1%	10.2%	0%	2.6%	**-**	-	17.8%	55.2%	25.2%	1.5%	0.1%	0.1%	**-**	-
% Total	0.1%	4.9%	16.6%	0.9%	0%	0.2%	**22.7%**	-	6.3%	14.4%	3.3%	2.8%	0%	0.7%	**27.6%**	-	4.5%	13.9%	6.3%	0.4%	0%	0%	**25.1%**	-
PHF	0.333	0.833	0.852	0.719		- 0.313	**0.934**	-	0.808	0.925	0.795	0.750		- 0.594	**0.958**	-	0.875	0.826	0.899	0.625	0.250	0.250	**0.905**	-
Lights	4	128	434	22	0	5	**593**	-	167	377	88	75	0	19	**726**	-	119	362	169	10	1	1	**662**	-
% Lights	100%	98.5%	98.0%	95.7%	0%	100%	**98.0%**	-	99.4%	97.9%	98.9%	100%	0%	100%	**98.6%**	-	100%	97.8%	100%	100%	100%	100%	**98.8%**	-
Articulated Trucks	0	0	0	0	0	0	**0**	-	0	0	0	0	0	0	**0**	-	0	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	2	9	1	0	0	**12**	-	1	8	1	0	0	0	**10**	-	0	8	0	0	0	0	**8**	-
% Buses and Single-Unit Trucks	0%	1.5%	2.0%	4.3%	0%	0%	**2.0%**	-	0.6%	2.1%	1.1%	0%	0%	0%	**1.4%**	-	0%	2.2%	0%	0%	0%	0%	**1.2%**	-
Pedestrians	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	8
% Pedestrians	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	85.7%	-	-	-	-	-	-	-	88.9%
Bicycles on Crosswalk	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1
% Bicycles on Crosswalk	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	14.3%	-	-	-	-	-	-	-	11.1%

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, HRR: Hard right on red, L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

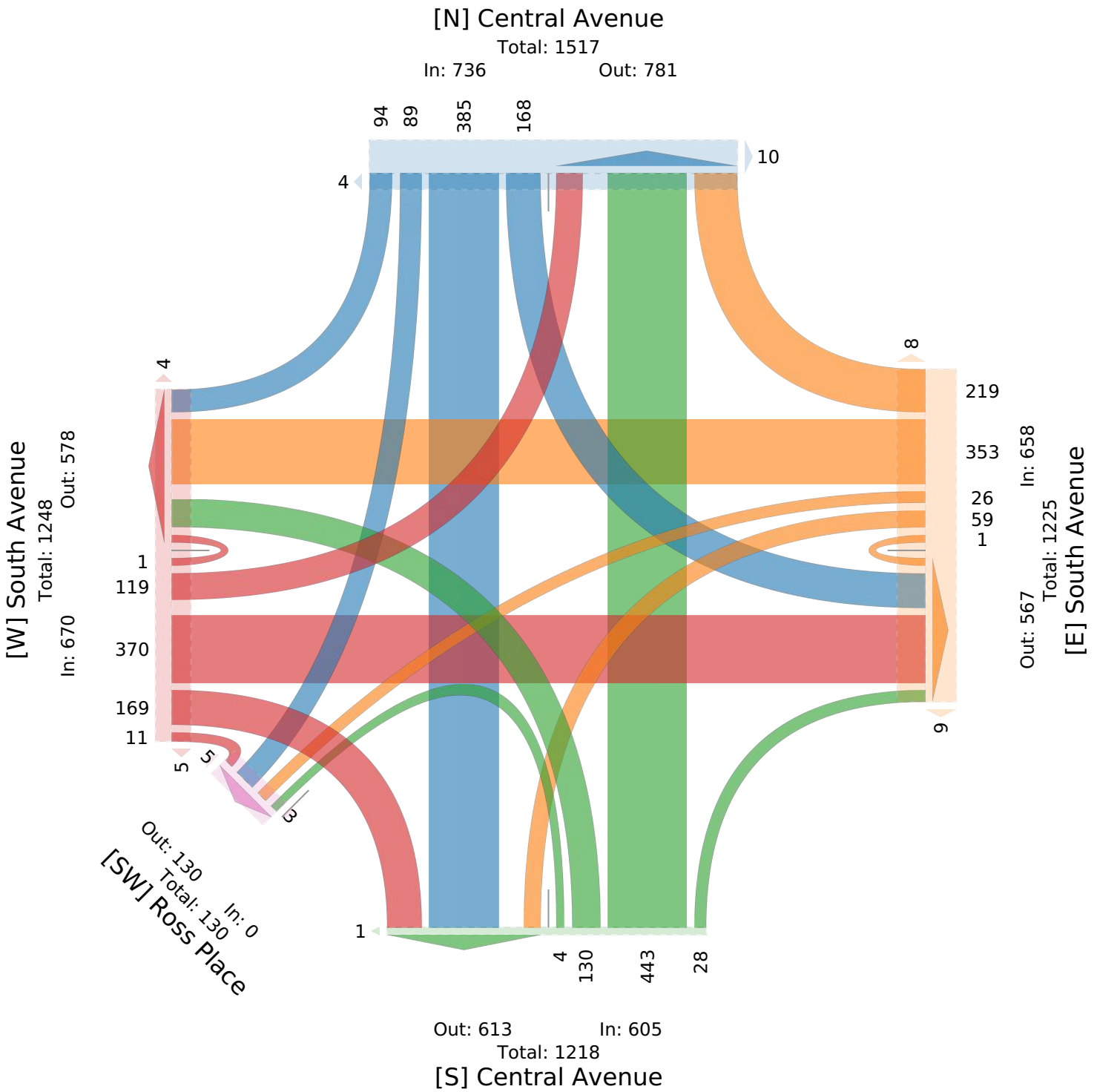
Leg Direction	South Avenue Westbound								Ross Place Northeastbound								
Time	L	BL	T	R	U	RR	**App**	Ped*	HL	BL	BR	HR	U	HRR	**App**	Ped*	**Int**
2022-06-18 11:00AM	15	3	93	48	0	11	**170**	2	0	0	0	0	0	0	**0**	2	**695**
11:15AM	11	11	97	42	0	10	**171**	6	0	0	0	0	0	0	**0**	2	**638**
11:30AM	17	7	86	46	1	6	**163**	3	0	0	0	0	0	0	**0**	1	**666**
11:45AM	16	5	77	53	0	3	**154**	6	0	0	0	0	0	0	**0**	3	**670**
Total	59	26	353	189	1	30	**658**	17	0	0	0	0	0	0	**0**	8	**2669**
% Approach	9.0%	4.0%	53.6%	28.7%	0.2%	4.6%	**-**	-	0%	0%	0%	0%	0%	0%	**-**	-	**-**
% Total	2.2%	1.0%	13.2%	7.1%	0%	1.1%	**24.7%**	-	0%	0%	0%	0%	0%	0%	**0%**	-	**-**
PHF	0.868	0.591	0.910	0.892	0.250	0.682	**0.962**	-	-	-	-	-	-	-	**-**	-	0.960
Lights	59	26	350	187	1	30	**653**	-	0	0	0	0	0	0	**0**	-	2634
% Lights	100%	100%	99.2%	98.9%	100%	100%	**99.2%**	-	0%	0%	0%	0%	0%	0%	**-**	-	98.7%
Articulated Trucks	0	0	0	0	0	0	**0**	-	0	0	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	0%	**-**	-	0%
Buses and Single-Unit Trucks	0	0	3	2	0	0	**5**	-	0	0	0	0	0	0	**0**	-	35
% Buses and Single-Unit Trucks	0%	0%	0.8%	1.1%	0%	0%	**0.8%**	-	0%	0%	0%	0%	0%	0%	**-**	-	1.3%
Pedestrians	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	-	-	82.4%	-	-	-	-	-	-	-	37.5%	-
Bicycles on Crosswalk	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	5	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	17.6%	-	-	-	-	-	-	-	62.5%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, HRR: Hard right on red, L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Leg	Central Avenue								Central Avenue								South Avenue							
Direction	Northbound								Southbound								Eastbound							
Time	HL	L	T	R	U	RR	**App**	Ped*	L	T	BR	R	U	RR	**App**	Ped*	L	T	R	HR	U	HRR	**App**	Ped*
2022-06-18 1:00PM	1	27	76	6	0	1	**111**	0	41	112	19	16	0	5	**193**	0	37	99	39	0	0	0	**175**	1
1:15PM	0	33	127	8	0	0	**168**	1	29	115	28	23	0	1	**196**	1	21	94	50	2	0	0	**167**	0
1:30PM	0	25	105	9	0	1	**140**	0	42	112	29	11	0	0	**194**	1	32	82	37	0	0	0	**151**	4
1:45PM	1	20	117	7	0	0	**145**	0	41	98	22	7	0	1	**169**	1	26	88	41	2	0	0	**157**	0
Total	2	105	425	30	0	2	**564**	1	153	437	98	57	0	7	**752**	3	116	363	167	4	0	0	**650**	5
% Approach	0.4%	18.6%	75.4%	5.3%	0%	0.4%	**-**	-	20.3%	58.1%	13.0%	7.6%	0%	0.9%	**-**	-	17.8%	55.8%	25.7%	0.6%	0%	0%	**-**	-
% Total	0.1%	4.2%	16.9%	1.2%	0%	0.1%	**22.4%**	-	6.1%	17.4%	3.9%	2.3%	0%	0.3%	**29.9%**	-	4.6%	14.4%	6.6%	0.2%	0%	0%	**25.8%**	-
PHF	0.500	0.795	0.837	0.833	-	0.500	**0.839**	-	0.911	0.950	0.845	0.620	-	0.350	**0.959**	-	0.784	0.917	0.835	0.500	-	-	**0.929**	-
Lights	2	105	421	29	0	2	**559**	-	152	435	98	57	0	7	**749**	-	116	356	166	4	0	0	**642**	-
% Lights	100%	100%	99.1%	96.7%	0%	100%	**99.1%**	-	99.3%	99.5%	100%	100%	0%	100%	**99.6%**	-	100%	98.1%	99.4%	100%	0%	0%	**98.8%**	-
Articulated Trucks	0	0	0	0	0	0	**0**	-	1	1	0	0	0	0	**2**	-	0	1	0	0	0	0	**1**	-
% Articulated Trucks	0%	0%	0%	0%	0%	0%	**0%**	-	0.7%	0.2%	0%	0%	0%	0%	**0.3%**	-	0%	0.3%	0%	0%	0%	0%	**0.2%**	-
Buses and Single-Unit Trucks	0	0	4	1	0	0	**5**	-	0	1	0	0	0	0	**1**	-	0	6	1	0	0	0	**7**	-
% Buses and Single-Unit Trucks	0%	0%	0.9%	3.3%	0%	0%	**0.9%**	-	0%	0.2%	0%	0%	0%	0%	**0.1%**	-	0%	1.7%	0.6%	0%	0%	0%	**1.1%**	-
Pedestrians	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	4
% Pedestrians	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	66.7%	-	-	-	-	-	-	-	80.0%
Bicycles on Crosswalk	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
% Bicycles on Crosswalk	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	33.3%	-	-	-	-	-	-	-	20.0%

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, HRR: Hard right on red, L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

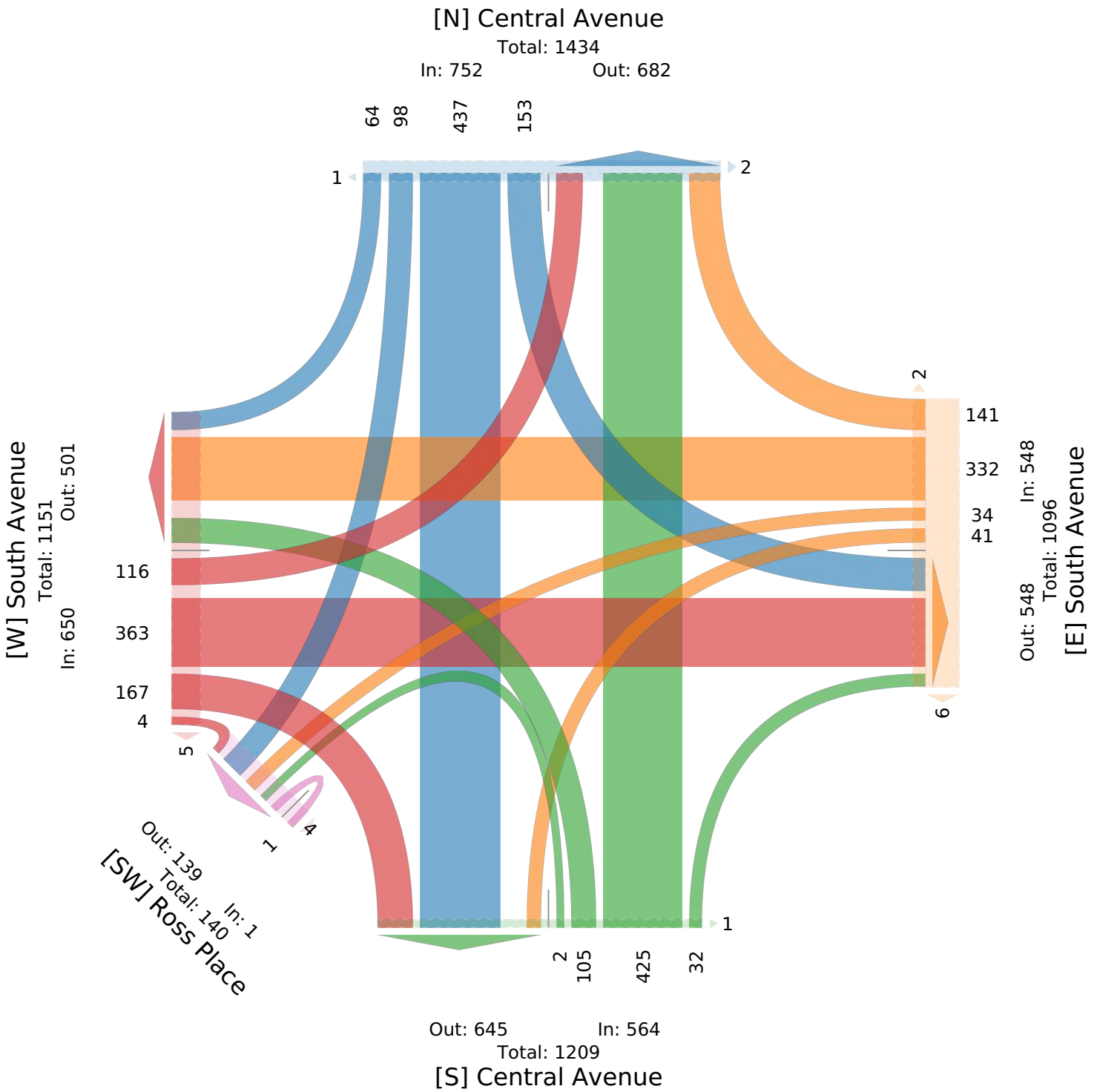
Leg Direction	South Avenue Westbound								Ross Place Northeastbound								
Time	L	BL	T	R	U	RR	**App**	Ped*	HL	BL	BR	HR	U	HRR	**App**	Ped*	**Int**
2022-06-18 1:00PM	8	11	79	32	0	0	**130**	2	0	0	0	0	1	0	**1**	0	**610**
1:15PM	10	11	94	31	0	0	**146**	1	0	0	0	0	0	0	**0**	1	**677**
1:30PM	11	4	76	35	0	1	**127**	3	0	0	0	0	0	0	**0**	1	**612**
1:45PM	12	8	83	41	0	1	**145**	2	0	0	0	0	0	0	**0**	2	**616**
Total	41	34	332	139	0	2	**548**	8	0	0	0	0	1	0	**1**	4	**2515**
% Approach	7.5%	6.2%	60.6%	25.4%	0%	0.4%	**-**	-	0%	0%	0%	0%	100%	0%	**-**	-	**-**
% Total	1.6%	1.4%	13.2%	5.5%	0%	0.1%	**21.8%**	-	0%	0%	0%	0%	0%	0%	**0%**	-	**-**
PHF	0.854	0.773	0.883	0.848	-	0.500	**0.938**	-	-	-	-	-	0.250	-	**0.250**	-	0.929
Lights	41	34	328	138	0	2	**543**	-	0	0	0	0	1	0	**1**	-	2494
% Lights	100%	100%	98.8%	99.3%	0%	100%	**99.1%**	-	0%	0%	0%	0%	100%	0%	**100%**	-	99.2%
Articulated Trucks	0	0	0	0	0	0	**0**	-	0	0	0	0	0	0	**0**	-	3
% Articulated Trucks	0%	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	0	4	1	0	0	**5**	-	0	0	0	0	0	0	**0**	-	18
% Buses and Single-Unit Trucks	0%	0%	1.2%	0.7%	0%	0%	**0.9%**	-	0%	0%	0%	0%	0%	0%	**0%**	-	0.7%
Pedestrians	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, HRR: Hard right on red, L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

8. Ross Place and Central Avenue and South A... - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965711, Location: 40.649185, -74.343057, Site Code: 8

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Parking Driveway Northbound							Elm Street Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 11:00AM	0	0	0	0	0	**0**	38	35	7	13	0	2	**57**	5
11:15AM	0	0	0	0	0	**0**	37	28	5	11	0	1	**45**	25
11:30AM	0	0	0	0	0	**0**	19	38	5	9	0	3	**55**	27
11:45AM	0	0	0	0	0	**0**	17	29	10	17	0	0	**56**	7
Hourly Total	0	0	0	0	0	**0**	111	130	27	50	0	6	**213**	64
12:00PM	0	0	0	0	0	**0**	31	38	7	17	0	4	**66**	11
12:15PM	0	0	0	0	0	**0**	16	24	7	23	0	4	**58**	13
12:30PM	0	0	0	0	0	**0**	12	35	2	23	0	3	**63**	17
12:45PM	1	0	0	0	1	**2**	21	44	4	24	0	1	**73**	13
Hourly Total	1	0	0	0	1	**2**	80	141	20	87	0	12	**260**	54
1:00PM	0	1	0	0	0	**1**	4	31	6	31	0	1	**69**	18
1:15PM	1	0	3	0	1	**5**	1	25	6	19	0	1	**51**	18
1:30PM	1	1	3	0	0	**5**	1	25	8	20	0	3	**56**	23
1:45PM	3	0	0	0	1	**4**	1	22	3	14	0	2	**41**	26
Hourly Total	5	2	6	0	2	**15**	7	103	23	84	0	7	**217**	85
Total	6	2	6	0	3	**17**	198	374	70	221	0	25	**690**	203
% Approach	35.3%	11.8%	35.3%	0%	17.6%	**-**	-	54.2%	10.1%	32.0%	0%	3.6%	**-**	-
% Total	0.1%	0%	0.1%	0%	0.1%	**0.4%**	-	9.1%	1.7%	5.4%	0%	0.6%	**16.8%**	-
Lights	6	2	6	0	3	**17**	-	372	69	218	0	24	**683**	-
% Lights	100%	100%	100%	0%	100%	**100%**	-	99.5%	98.6%	98.6%	0%	96.0%	**99.0%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	0	0	0	0	**0**	-	2	1	3	0	1	**7**	-
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	**0%**	-	0.5%	1.4%	1.4%	0%	4.0%	**1.0%**	-
Pedestrians	-	-	-	-	-	-	194	-	-	-	-	-	-	199
% Pedestrians	-	-	-	-	-	-	98.0%	-	-	-	-	-	-	98.0%
Bicycles on Crosswalk	-	-	-	-	-	-	4	-	-	-	-	-	-	4
% Bicycles on Crosswalk	-	-	-	-	-	-	2.0%	-	-	-	-	-	-	2.0%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

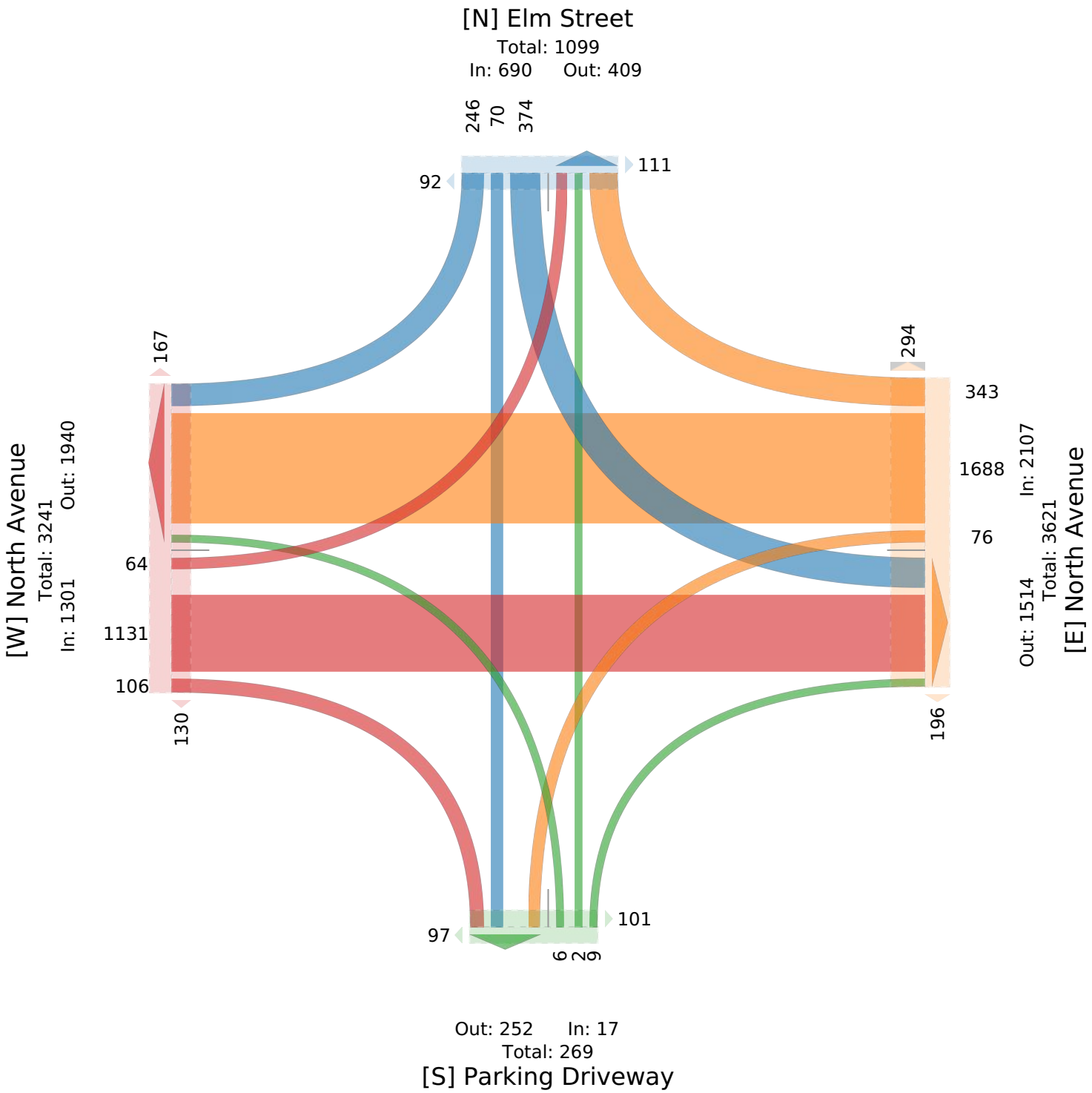
Leg Direction	North Avenue Eastbound							North Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:00AM	7	87	7	0	4	**105**	30	4	151	25	0	0	**180**	37	**342**
11:15AM	2	107	8	0	1	**118**	35	6	134	26	0	1	**167**	50	**330**
11:30AM	4	78	2	0	2	**86**	13	7	133	23	0	1	**164**	69	**305**
11:45AM	5	116	8	0	2	**131**	18	20	129	32	0	1	**182**	52	**369**
Hourly Total	18	388	25	0	9	**440**	96	37	547	106	0	3	**693**	208	**1346**
12:00PM	4	110	16	0	1	**131**	32	5	133	29	0	1	**168**	47	**365**
12:15PM	8	104	9	0	4	**125**	26	9	144	28	0	2	**183**	26	**366**
12:30PM	7	87	5	0	0	**99**	18	2	158	36	0	1	**197**	53	**359**
12:45PM	9	101	4	0	2	**116**	28	3	146	26	0	2	**177**	59	**368**
Hourly Total	28	402	34	0	7	**471**	104	19	581	119	0	6	**725**	185	**1458**
1:00PM	9	84	8	0	0	**101**	28	2	150	24	0	1	**177**	23	**348**
1:15PM	0	98	6	0	0	**104**	25	6	119	24	0	0	**149**	30	**309**
1:30PM	7	72	11	0	1	**91**	29	6	160	37	0	0	**203**	24	**355**
1:45PM	2	87	3	0	2	**94**	15	6	131	23	0	0	**160**	20	**299**
Hourly Total	18	341	28	0	3	**390**	97	20	560	108	0	1	**689**	97	**1311**
Total	64	1131	87	0	19	**1301**	297	76	1688	333	0	10	**2107**	490	**4115**
% Approach	4.9%	86.9%	6.7%	0%	1.5%	**-**	-	3.6%	80.1%	15.8%	0%	0.5%	**-**	-	**-**
% Total	1.6%	27.5%	2.1%	0%	0.5%	**31.6%**	-	1.8%	41.0%	8.1%	0%	0.2%	**51.2%**	-	**-**
Lights	64	1117	87	0	19	**1287**	-	76	1653	331	0	10	**2070**	-	4057
% Lights	100%	98.8%	100%	0%	100%	**98.9%**	-	100%	97.9%	99.4%	0%	100%	**98.2%**	-	98.6%
Articulated Trucks	0	4	0	0	0	**4**	-	0	4	0	0	0	**4**	-	8
% Articulated Trucks	0%	0.4%	0%	0%	0%	**0.3%**	-	0%	0.2%	0%	0%	0%	**0.2%**	-	0.2%
Buses and Single-Unit Trucks	0	10	0	0	0	**10**	-	0	31	2	0	0	**33**	-	50
% Buses and Single-Unit Trucks	0%	0.9%	0%	0%	0%	**0.8%**	-	0%	1.8%	0.6%	0%	0%	**1.6%**	-	1.2%
Pedestrians	-	-	-	-	-	-	294	-	-	-	-	-	-	490	
% Pedestrians	-	-	-	-	-	-	99.0%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	3	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	1.0%	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Parking Driveway Northbound							Elm Street Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 11:45AM	0	0	0	0	0	**0**	17	29	10	17	0	0	**56**	7
12:00PM	0	0	0	0	0	**0**	31	38	7	17	0	4	**66**	11
12:15PM	0	0	0	0	0	**0**	16	24	7	23	0	4	**58**	13
12:30PM	0	0	0	0	0	**0**	12	35	2	23	0	3	**63**	17
Total	0	0	0	0	0	**0**	76	126	26	80	0	11	**243**	48
% Approach	0%	0%	0%	0%	0%	**-**	-	51.9%	10.7%	32.9%	0%	4.5%	**-**	-
% Total	0%	0%	0%	0%	0%	**0%**	-	8.6%	1.8%	5.5%	0%	0.8%	**16.7%**	-
PHF	-	-	-	-	-	**-**	-	0.829	0.650	0.870	-	0.688	**0.920**	-
Lights	0	0	0	0	0	**0**	-	124	26	79	0	11	**240**	-
% Lights	0%	0%	0%	0%	0%	**-**	-	98.4%	100%	98.8%	0%	100%	**98.8%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	0	0	0	0	**0**	-	2	0	1	0	0	**3**	-
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	**-**	-	1.6%	0%	1.3%	0%	0%	**1.2%**	-
Pedestrians	-	-	-	-	-	-	75	-	-	-	-	-	-	48
% Pedestrians	-	-	-	-	-	-	98.7%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	1	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	1.3%	-	-	-	-	-	-	0%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	North Avenue Eastbound							North Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:45AM	5	116	8	0	2	**131**	18	20	129	32	0	1	**182**	52	**369**
12:00PM	4	110	16	0	1	**131**	32	5	133	29	0	1	**168**	47	**365**
12:15PM	8	104	9	0	4	**125**	26	9	144	28	0	2	**183**	26	**366**
12:30PM	7	87	5	0	0	**99**	18	2	158	36	0	1	**197**	53	**359**
Total	24	417	38	0	7	**486**	94	36	564	125	0	5	**730**	178	**1459**
% Approach	4.9%	85.8%	7.8%	0%	1.4%	**-**	-	4.9%	77.3%	17.1%	0%	0.7%	**-**	-	**-**
% Total	1.6%	28.6%	2.6%	0%	0.5%	**33.3%**	-	2.5%	38.7%	8.6%	0%	0.3%	**50.0%**	-	**-**
PHF	0.750	0.899	0.594	-	0.438	**0.927**	-	0.450	0.892	0.868	-	0.625	**0.926**	-	0.988
Lights	24	411	38	0	7	**480**	-	36	553	124	0	5	**718**	-	1438
% Lights	100%	98.6%	100%	0%	100%	**98.8%**	-	100%	98.0%	99.2%	0%	100%	**98.4%**	-	98.6%
Articulated Trucks	0	3	0	0	0	**3**	-	0	1	0	0	0	**1**	-	4
% Articulated Trucks	0%	0.7%	0%	0%	0%	**0.6%**	-	0%	0.2%	0%	0%	0%	**0.1%**	-	0.3%
Buses and Single-Unit Trucks	0	3	0	0	0	**3**	-	0	10	1	0	0	**11**	-	17
% Buses and Single-Unit Trucks	0%	0.7%	0%	0%	0%	**0.6%**	-	0%	1.8%	0.8%	0%	0%	**1.5%**	-	1.2%
Pedestrians	-	-	-	-	-	-	93	-	-	-	-	-	-	178	
% Pedestrians	-	-	-	-	-	-	98.9%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	1	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	1.1%	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
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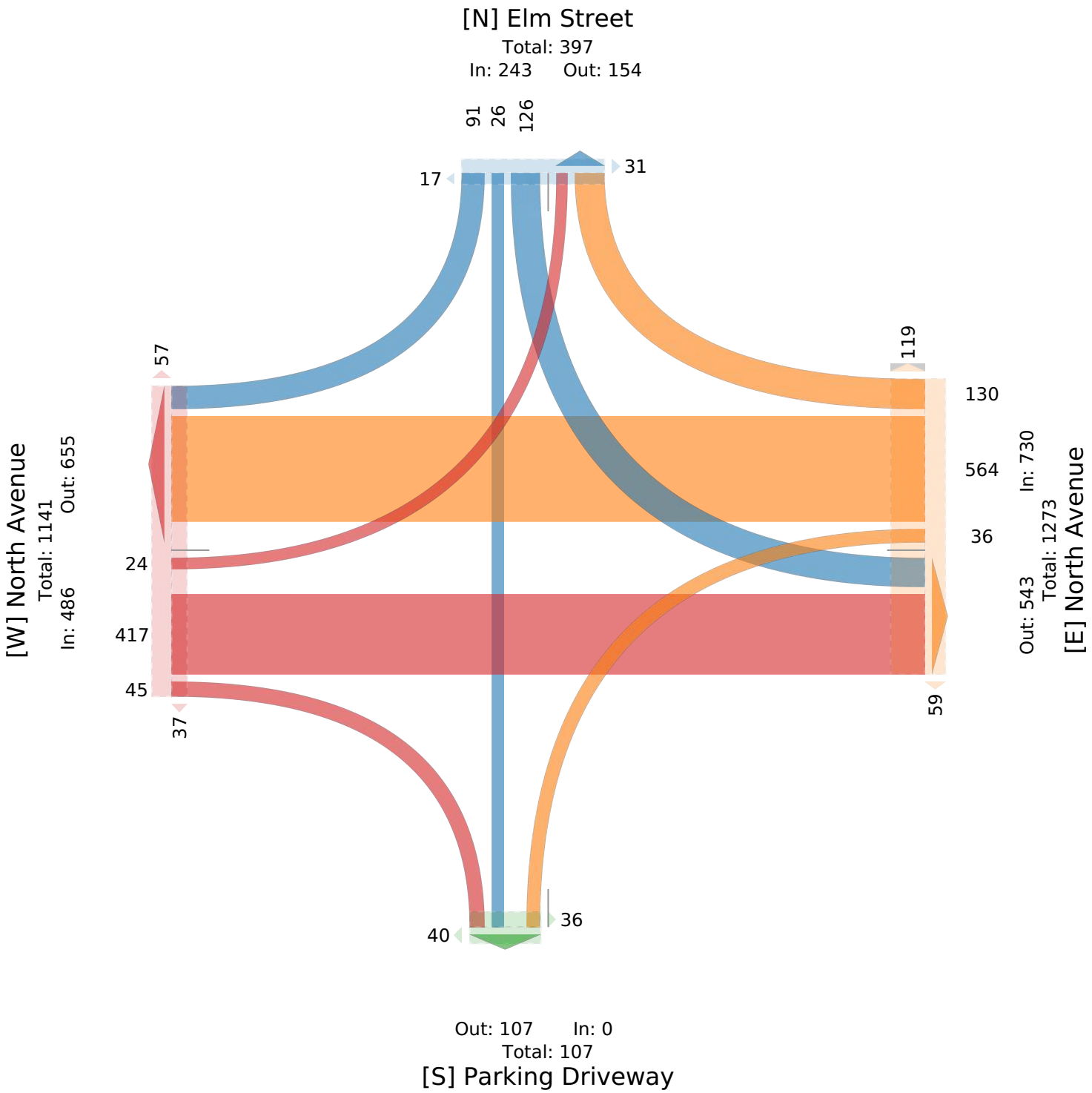

10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Parking Driveway Northbound							Elm Street Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 1:00PM	0	1	0	0	0	**1**	4	31	6	31	0	1	**69**	18
1:15PM	1	0	3	0	1	**5**	1	25	6	19	0	1	**51**	18
1:30PM	1	1	3	0	0	**5**	1	25	8	20	0	3	**56**	23
1:45PM	3	0	0	0	1	**4**	1	22	3	14	0	2	**41**	26
Total	5	2	6	0	2	**15**	7	103	23	84	0	7	**217**	85
% Approach	33.3%	13.3%	40.0%	0%	13.3%	**-**	-	47.5%	10.6%	38.7%	0%	3.2%	**-**	-
% Total	0.4%	0.2%	0.5%	0%	0.2%	**1.1%**	-	7.9%	1.8%	6.4%	0%	0.5%	**16.6%**	-
PHF	0.417	0.500	0.500	-	0.500	**0.750**	-	0.831	0.719	0.677	-	0.583	**0.786**	-
Lights	5	2	6	0	2	**15**	-	103	23	82	0	7	**215**	-
% Lights	100%	100%	100%	0%	100%	**100%**	-	100%	100%	97.6%	0%	100%	**99.1%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	0	0	0	0	0	**0**	-	0	0	2	0	0	**2**	-
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	2.4%	0%	0%	**0.9%**	-
Pedestrians	-	-	-	-	-	-	7	-	-	-	-	-	-	84
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	98.8%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	1
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	1.2%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	North Avenue Eastbound							North Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 1:00PM	9	84	8	0	0	**101**	28	2	150	24	0	1	**177**	23	**348**
1:15PM	0	98	6	0	0	**104**	25	6	119	24	0	0	**149**	30	**309**
1:30PM	7	72	11	0	1	**91**	29	6	160	37	0	0	**203**	24	**355**
1:45PM	2	87	3	0	2	**94**	15	6	131	23	0	0	**160**	20	**299**
Total	18	341	28	0	3	**390**	97	20	560	108	0	1	**689**	97	**1311**
% Approach	4.6%	87.4%	7.2%	0%	0.8%	**-**	-	2.9%	81.3%	15.7%	0%	0.1%	**-**	-	**-**
% Total	1.4%	26.0%	2.1%	0%	0.2%	**29.7%**	-	1.5%	42.7%	8.2%	0%	0.1%	**52.6%**	-	**-**
PHF	0.500	0.870	0.636	-	0.375	**0.938**	-	0.833	0.875	0.730	-	0.250	**0.849**	-	0.923
Lights	18	337	28	0	3	**386**	-	20	554	108	0	1	**683**	-	1299
% Lights	100%	98.8%	100%	0%	100%	**99.0%**	-	100%	98.9%	100%	0%	100%	**99.1%**	-	99.1%
Articulated Trucks	0	1	0	0	0	**1**	-	0	1	0	0	0	**1**	-	2
% Articulated Trucks	0%	0.3%	0%	0%	0%	**0.3%**	-	0%	0.2%	0%	0%	0%	**0.1%**	-	0.2%
Buses and Single-Unit Trucks	0	3	0	0	0	**3**	-	0	5	0	0	0	**5**	-	10
% Buses and Single-Unit Trucks	0%	0.9%	0%	0%	0%	**0.8%**	-	0%	0.9%	0%	0%	0%	**0.7%**	-	0.8%
Pedestrians	-	-	-	-	-	-	97	-	-	-	-	-	-	97	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

10. North Avenue and Elm Street - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965716, Location: 40.650228, -74.347892, Site Code: 10

Provided by: Imperial Traffic & Data Collection
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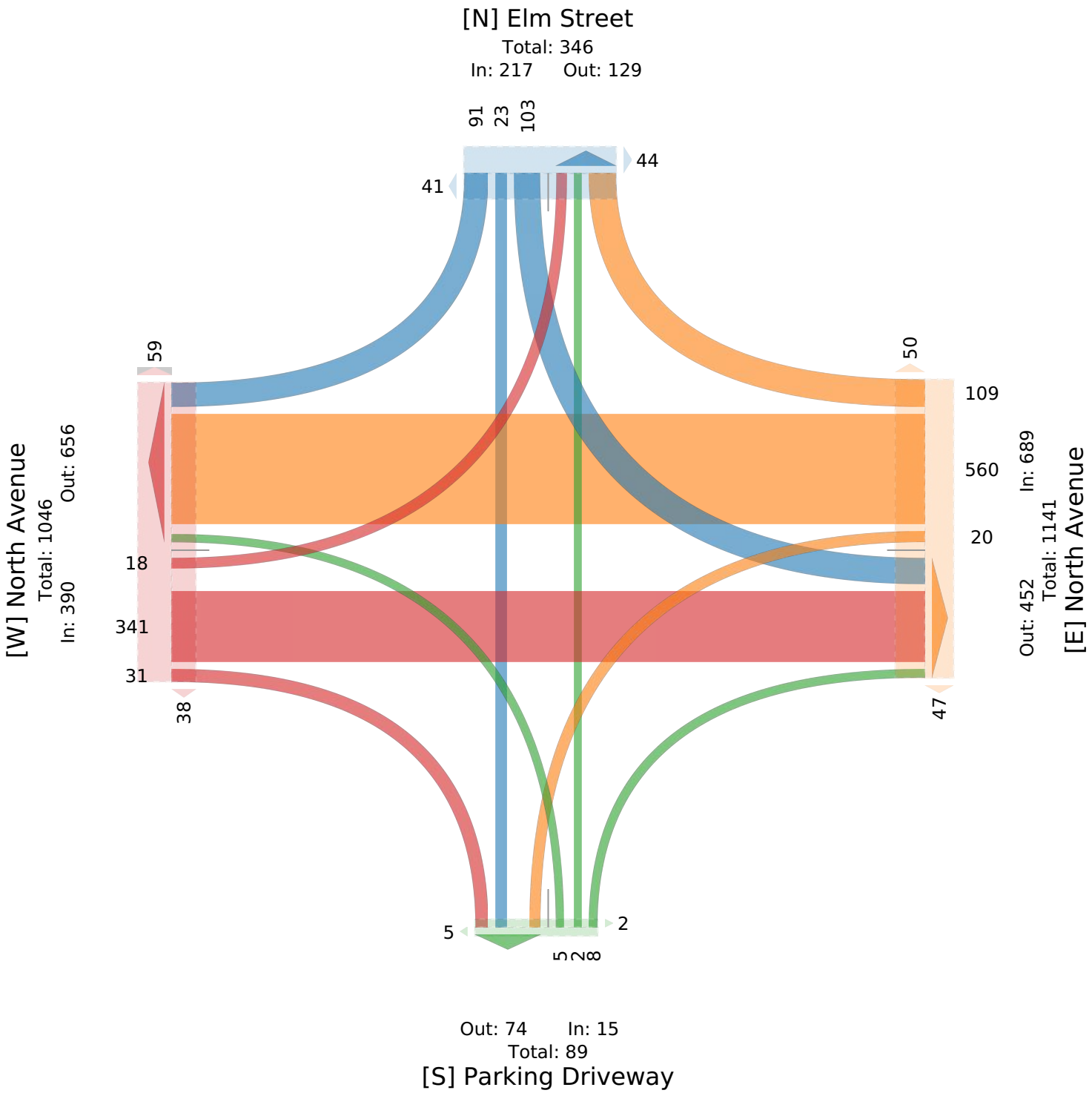

Imperial Traffic & Data Collection
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Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650228, -74.347892

Count Name: 10. North Avenue and Elm Street
Site Code: 10
Start Date: 06/18/2022

Turning Movement Data

Start Time	North Avenue Eastbound							North Avenue Westbound							Parking Driveway Northbound							Elm Street Southbound							
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	Int. Total
11:00 AM	0	7	87	7	4	30	105	0	4	151	25	0	37	180	0	0	0	0	0	38	0	0	35	7	13	2	5	57	342
11:15 AM	0	2	107	8	1	35	118	0	6	134	26	1	50	167	0	0	0	0	0	37	0	0	28	5	11	1	25	45	330
11:30 AM	0	4	78	2	2	13	86	0	7	133	23	1	69	164	0	0	0	0	0	19	0	0	38	5	9	3	27	55	305
11:45 AM	0	5	116	8	2	18	131	0	20	129	32	1	52	182	0	0	0	0	0	17	0	0	29	10	17	0	7	56	369
Hourly Total	0	18	388	25	9	96	440	0	37	547	106	3	208	693	0	0	0	0	0	111	0	0	130	27	50	6	64	213	1346
12:00 PM	0	4	110	16	1	32	131	0	5	133	29	1	47	168	0	0	0	0	0	31	0	0	38	7	17	4	11	66	365
12:15 PM	0	8	104	9	4	26	125	0	9	144	28	2	26	183	0	0	0	0	0	16	0	0	24	7	23	4	13	58	366
12:30 PM	0	7	87	5	0	18	99	0	2	158	36	1	53	197	0	0	0	0	0	12	0	0	35	2	23	3	17	63	359
12:45 PM	0	9	101	4	2	28	116	0	3	146	26	2	59	177	0	1	0	0	1	21	2	0	44	4	24	1	13	73	368
Hourly Total	0	28	402	34	7	104	471	0	19	581	119	6	185	725	0	1	0	0	1	80	2	0	141	20	87	12	54	260	1458
1:00 PM	0	9	84	8	0	28	101	0	2	150	24	1	23	177	0	0	1	0	0	4	1	0	31	6	31	1	18	69	348
1:15 PM	0	0	98	6	0	25	104	0	6	119	24	0	30	149	0	1	0	3	1	1	5	0	25	6	19	1	18	51	309
1:30 PM	0	7	72	11	1	29	91	0	6	160	37	0	24	203	0	1	1	3	0	1	5	0	25	8	20	3	23	56	355
1:45 PM	0	2	87	3	2	15	94	0	6	131	23	0	20	160	0	3	0	0	1	1	4	0	22	3	14	2	26	41	299
Hourly Total	0	18	341	28	3	97	390	0	20	560	108	1	97	689	0	5	2	6	2	7	15	0	103	23	84	7	85	217	1311
Grand Total	0	64	1131	87	19	297	1301	0	76	1688	333	10	490	2107	0	6	2	6	3	198	17	0	374	70	221	25	203	690	4115
Approach %	0.0	4.9	86.9	6.7	1.5	-	-	0.0	3.6	80.1	15.8	0.5	-	-	0.0	35.3	11.8	35.3	17.6	-	-	0.0	54.2	10.1	32.0	3.6	-	-	-
Total %	0.0	1.6	27.5	2.1	0.5	-	31.6	0.0	1.8	41.0	8.1	0.2	-	51.2	0.0	0.1	0.0	0.1	0.1	-	0.4	0.0	9.1	1.7	5.4	0.6	-	16.8	-
Lights	0	64	1117	87	19	-	1287	0	76	1653	331	10	-	2070	0	6	2	6	3	-	17	0	372	69	218	24	-	683	4057
% Lights	-	100.0	98.8	100.0	100.0	-	98.9	-	100.0	97.9	99.4	100.0	-	98.2	-	100.0	100.0	100.0	100.0	-	100.0	-	99.5	98.6	98.6	96.0	-	99.0	98.6
Mediums	0	0	10	0	0	-	10	0	0	31	2	0	-	33	0	0	0	0	0	-	0	0	2	1	3	1	-	7	50
% Mediums	-	0.0	0.9	0.0	0.0	-	0.8	-	0.0	1.8	0.6	0.0	-	1.6	-	0.0	0.0	0.0	0.0	-	0.0	-	0.5	1.4	1.4	4.0	-	1.0	1.2
Articulated Trucks	0	0	4	0	0	-	4	0	0	4	0	0	-	4	0	0	0	0	0	-	0	0	0	0	0	0	-	0	8
% Articulated Trucks	-	0.0	0.4	0.0	0.0	-	0.3	-	0.0	0.2	0.0	0.0	-	0.2	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	-	0	-	-	-	-	-	-	4	-	-	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	-	1.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	2.0	-	-	-	-	-	-	2.0	-	-
Pedestrians	-	-	-	-	-	294	-	-	-	-	-	-	490	-	-	-	-	-	-	194	-	-	-	-	-	-	199	-	-
% Pedestrians	-	-	-	-	-	99.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	98.0	-	-	-	-	-	-	98.0	-	-

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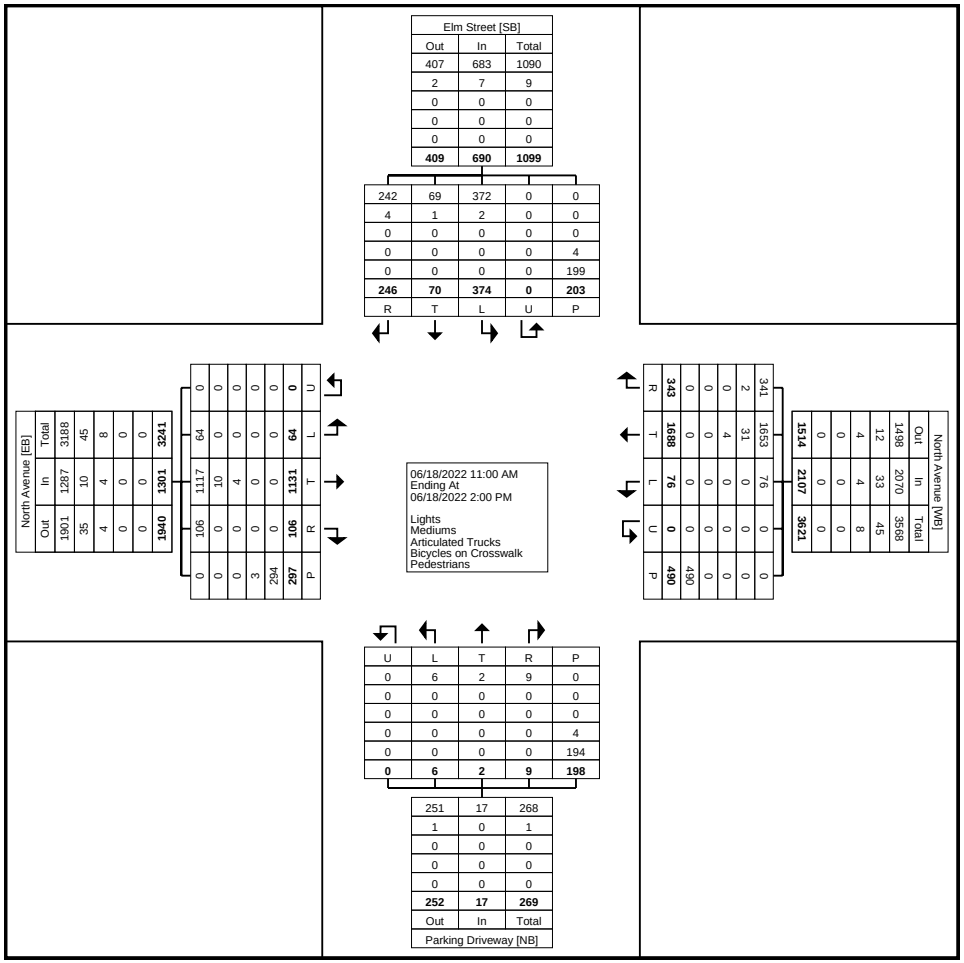
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650228, -74.347892

Count Name: 10. North Avenue and Elm Street
Site Code: 10
Start Date: 06/18/2022



Turning Movement Data Plot

Imperial Traffic & Data Collection
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Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650228, -74.347892

Count Name: 10. North Avenue and Elm Street
Site Code: 10
Start Date: 06/18/2022

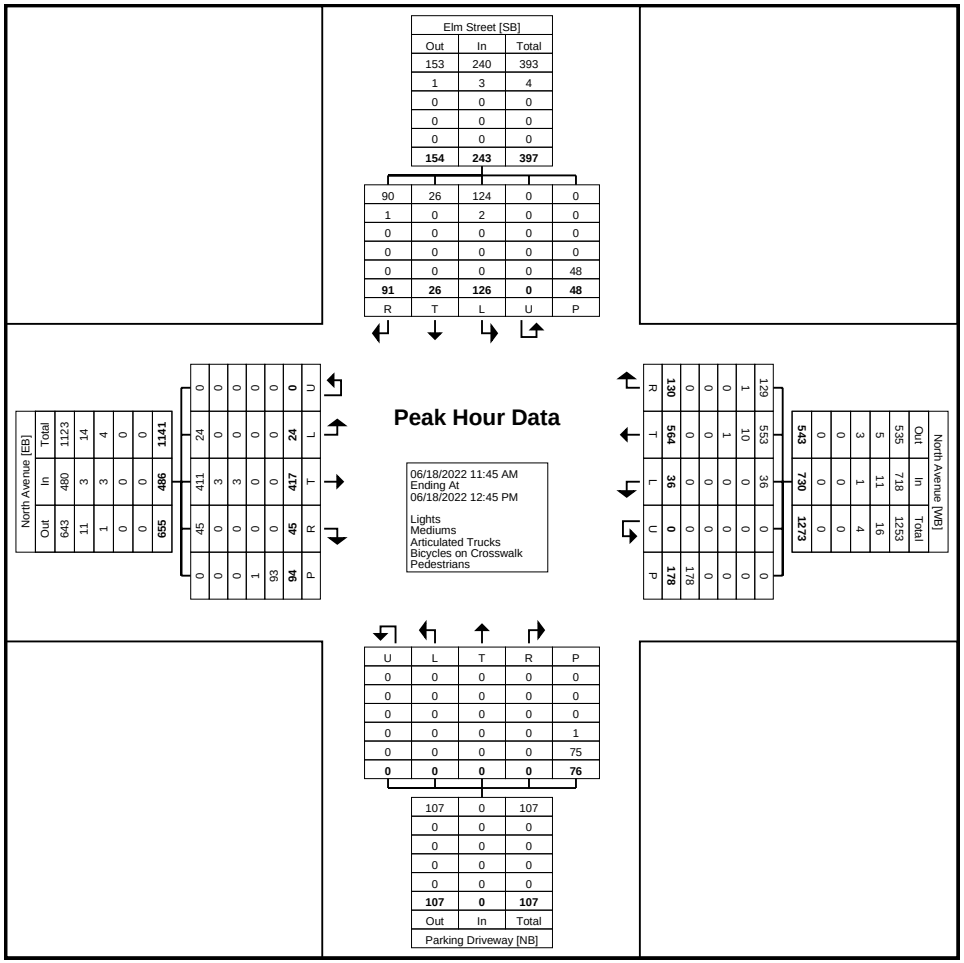
Turning Movement Peak Hour Data (11:45 AM)

Start Time	North Avenue Eastbound							North Avenue Westbound							Parking Driveway Northbound							Elm Street Southbound							
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	Int. Total
11:45 AM	0	5	116	8	2	18	131	0	20	129	32	1	52	182	0	0	0	0	0	17	0	0	29	10	17	0	7	56	369
12:00 PM	0	4	110	16	1	32	131	0	5	133	29	1	47	168	0	0	0	0	0	31	0	0	38	7	17	4	11	66	365
12:15 PM	0	8	104	9	4	26	125	0	9	144	28	2	26	183	0	0	0	0	0	16	0	0	24	7	23	4	13	58	366
12:30 PM	0	7	87	5	0	18	99	0	2	158	36	1	53	197	0	0	0	0	0	12	0	0	35	2	23	3	17	63	359
Total	0	24	417	38	7	94	486	0	36	564	125	5	178	730	0	0	0	0	0	76	0	0	126	26	80	11	48	243	1459
Approach %	0.0	4.9	85.8	7.8	1.4	-	-	0.0	4.9	77.3	17.1	0.7	-	-	0.0	0.0	0.0	0.0	0.0	-	-	0.0	51.9	10.7	32.9	4.5	-	-	-
Total %	0.0	1.6	28.6	2.6	0.5	-	33.3	0.0	2.5	38.7	8.6	0.3	-	50.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	8.6	1.8	5.5	0.8	-	16.7	-
PHF	0.000	0.750	0.899	0.594	0.438	-	0.927	0.000	0.450	0.892	0.868	0.625	-	0.926	0.000	0.000	0.000	0.000	0.000	-	0.000	0.000	0.829	0.650	0.870	0.688	-	0.920	0.988
Lights	0	24	411	38	7	-	480	0	36	553	124	5	-	718	0	0	0	0	0	-	0	0	124	26	79	11	-	240	1438
% Lights	-	100.0	98.6	100.0	100.0	-	98.8	-	100.0	98.0	99.2	100.0	-	98.4	-	-	-	-	-	-	-	-	98.4	100.0	98.8	100.0	-	98.8	98.6
Mediums	0	0	3	0	0	-	3	0	0	10	1	0	-	11	0	0	0	0	0	-	0	0	2	0	1	0	-	3	17
% Mediums	-	0.0	0.7	0.0	0.0	-	0.6	-	0.0	1.8	0.8	0.0	-	1.5	-	-	-	-	-	-	-	-	1.6	0.0	1.3	0.0	-	1.2	1.2
Articulated Trucks	0	0	3	0	0	-	3	0	0	1	0	0	-	1	0	0	0	0	0	-	0	0	0	0	0	0	-	0	4
% Articulated Trucks	-	0.0	0.7	0.0	0.0	-	0.6	-	0.0	0.2	0.0	0.0	-	0.1	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	1.1	-	-	-	-	-	-	0.0	-	-	-	-	-	-	1.3	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	93	-	-	-	-	-	-	178	-	-	-	-	-	-	75	-	-	-	-	-	-	48	-	-
% Pedestrians	-	-	-	-	-	98.9	-	-	-	-	-	-	100.0	-	-	-	-	-	-	98.7	-	-	-	-	-	-	100.0	-	-

Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650228, -74.347892

Count Name: 10. North Avenue and Elm Street
Site Code: 10
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (11:45 AM)

11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Central Avenue Northbound							Central Avenue Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 11:00AM	48	104	37	0	0	**189**	1	7	120	9	0	0	**136**	1
11:15AM	44	109	32	0	2	**187**	2	17	98	7	0	0	**122**	6
11:30AM	45	121	33	0	3	**202**	3	13	114	9	0	0	**136**	4
11:45AM	37	105	44	0	2	**188**	2	14	100	8	0	0	**122**	3
Hourly Total	174	439	146	0	7	**766**	8	51	432	33	0	0	**516**	14
12:00PM	54	126	29	0	1	**210**	0	4	109	9	0	0	**122**	6
12:15PM	32	113	34	0	2	**181**	2	13	105	8	0	0	**126**	3
12:30PM	46	126	30	0	1	**203**	0	11	121	4	0	0	**136**	5
12:45PM	35	84	20	0	2	**141**	3	12	98	15	0	0	**125**	1
Hourly Total	167	449	113	0	6	**735**	5	40	433	36	0	0	**509**	15
1:00PM	28	104	28	0	1	**161**	2	20	107	9	0	1	**137**	2
1:15PM	41	109	27	0	5	**182**	3	11	103	6	0	2	**122**	2
1:30PM	46	96	27	0	4	**173**	5	8	105	14	0	4	**131**	4
1:45PM	45	91	35	0	1	**172**	0	14	92	6	0	0	**112**	2
Hourly Total	160	400	117	0	11	**688**	10	53	407	35	0	7	**502**	10
Total	501	1288	376	0	24	**2189**	23	144	1272	104	0	7	**1527**	39
% Approach	22.9%	58.8%	17.2%	0%	1.1%	**-**	-	9.4%	83.3%	6.8%	0%	0.5%	**-**	-
% Total	6.6%	17.0%	5.0%	0%	0.3%	**28.9%**	-	1.9%	16.8%	1.4%	0%	0.1%	**20.1%**	-
Lights	491	1280	371	0	23	**2165**	-	139	1255	102	0	7	**1503**	-
% Lights	98.0%	99.4%	98.7%	0%	95.8%	**98.9%**	-	96.5%	98.7%	98.1%	0%	100%	**98.4%**	-
Articulated Trucks	1	0	0	0	0	**1**	-	1	2	0	0	0	**3**	-
% Articulated Trucks	0.2%	0%	0%	0%	0%	**0%**	-	0.7%	0.2%	0%	0%	0%	**0.2%**	-
Buses and Single-Unit Trucks	9	8	5	0	1	**23**	-	4	15	2	0	0	**21**	-
% Buses and Single-Unit Trucks	1.8%	0.6%	1.3%	0%	4.2%	**1.1%**	-	2.8%	1.2%	1.9%	0%	0%	**1.4%**	-
Pedestrians	-	-	-	-	-	-	21	-	-	-	-	-	-	36
% Pedestrians	-	-	-	-	-	-	91.3%	-	-	-	-	-	-	92.3%
Bicycles on Crosswalk	-	-	-	-	-	-	2	-	-	-	-	-	-	3
% Bicycles on Crosswalk	-	-	-	-	-	-	8.7%	-	-	-	-	-	-	7.7%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

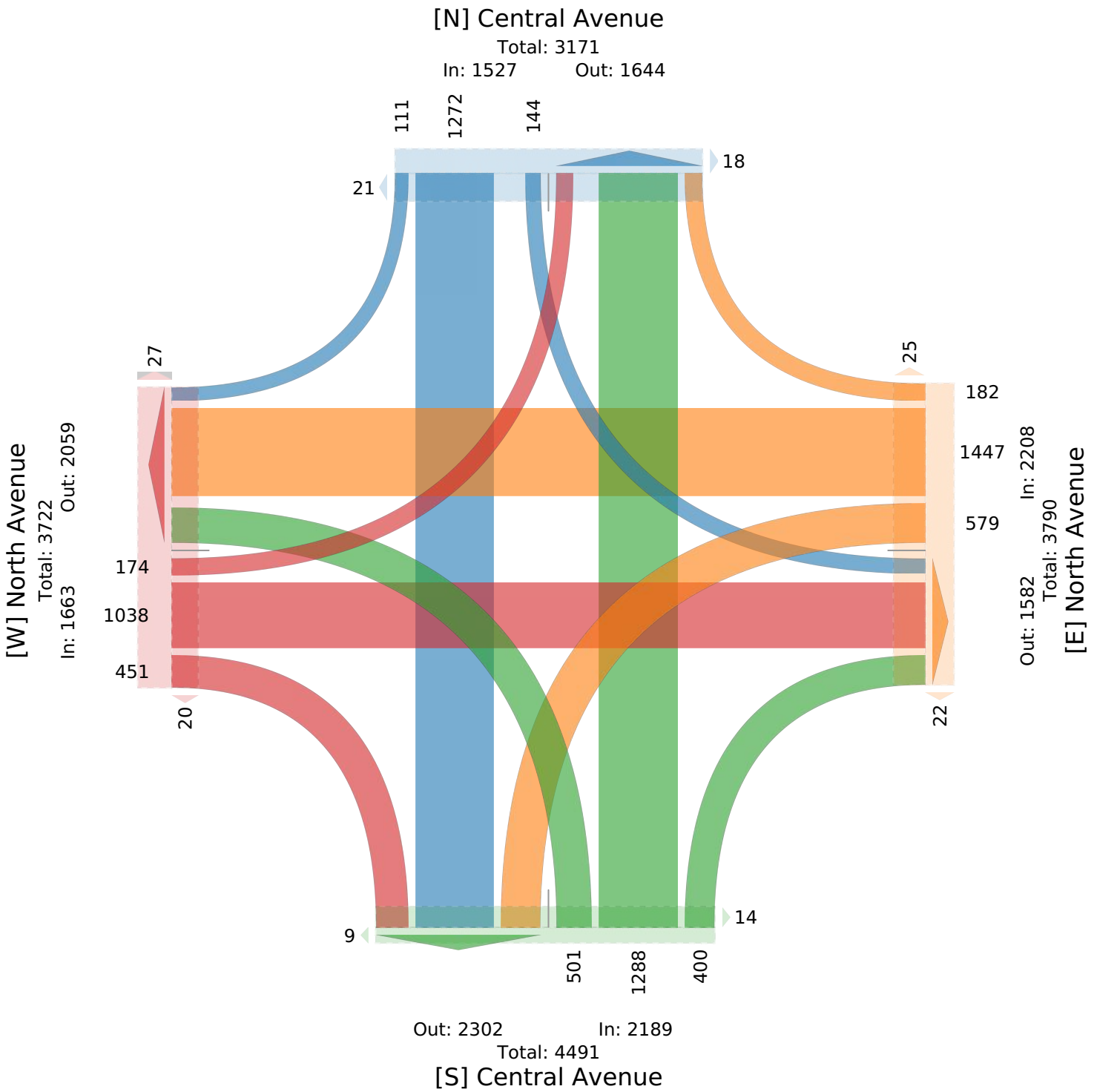
Leg Direction	North Avenue Eastbound							North Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:00AM	10	85	32	0	1	**128**	0	51	125	17	0	0	**193**	0	**646**
11:15AM	10	95	35	0	0	**140**	3	44	110	22	0	1	**177**	5	**626**
11:30AM	12	86	34	0	0	**132**	6	37	121	15	0	1	**174**	6	**644**
11:45AM	15	85	49	0	0	**149**	7	49	125	19	0	0	**193**	3	**652**
Hourly Total	47	351	150	0	1	**549**	16	181	481	73	0	2	**737**	14	**2568**
12:00PM	18	103	40	0	0	**161**	0	50	116	18	0	0	**184**	6	**677**
12:15PM	19	100	40	0	0	**159**	2	54	131	9	0	0	**194**	4	**660**
12:30PM	18	79	32	0	1	**130**	7	45	138	12	0	0	**195**	5	**664**
12:45PM	17	86	40	0	0	**143**	3	50	123	20	0	1	**194**	6	**603**
Hourly Total	72	368	152	0	1	**593**	12	199	508	59	0	1	**767**	21	**2604**
1:00PM	18	80	31	0	1	**130**	2	52	134	8	0	0	**194**	4	**622**
1:15PM	17	85	39	0	0	**141**	2	49	102	14	0	0	**165**	0	**610**
1:30PM	13	70	42	0	1	**126**	9	51	119	13	0	0	**183**	5	**613**
1:45PM	7	84	32	0	1	**124**	6	47	103	12	0	0	**162**	3	**570**
Hourly Total	55	319	144	0	3	**521**	19	199	458	47	0	0	**704**	12	**2415**
Total	174	1038	446	0	5	**1663**	47	579	1447	179	0	3	**2208**	47	**7587**
% Approach	10.5%	62.4%	26.8%	0%	0.3%	**-**	-	26.2%	65.5%	8.1%	0%	0.1%	**-**	-	**-**
% Total	2.3%	13.7%	5.9%	0%	0.1%	**21.9%**	-	7.6%	19.1%	2.4%	0%	0%	**29.1%**	-	**-**
Lights	172	1027	443	0	5	**1647**	-	572	1424	177	0	3	**2176**	-	7491
% Lights	98.9%	98.9%	99.3%	0%	100%	**99.0%**	-	98.8%	98.4%	98.9%	0%	100%	**98.6%**	-	98.7%
Articulated Trucks	0	2	1	0	0	**3**	-	1	1	0	0	0	**2**	-	9
% Articulated Trucks	0%	0.2%	0.2%	0%	0%	**0.2%**	-	0.2%	0.1%	0%	0%	0%	**0.1%**	-	0.1%
Buses and Single-Unit Trucks	2	9	2	0	0	**13**	-	6	22	2	0	0	**30**	-	87
% Buses and Single-Unit Trucks	1.1%	0.9%	0.4%	0%	0%	**0.8%**	-	1.0%	1.5%	1.1%	0%	0%	**1.4%**	-	1.1%
Pedestrians	-	-	-	-	-	-	45	-	-	-	-	-	-	45	
% Pedestrians	-	-	-	-	-	-	95.7%	-	-	-	-	-	-	95.7%	-
Bicycles on Crosswalk	-	-	-	-	-	-	2	-	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	-	4.3%	-	-	-	-	-	-	4.3%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Central Avenue Northbound							Central Avenue Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 11:45AM	37	105	44	0	2	**188**	2	14	100	8	0	0	**122**	3
12:00PM	54	126	29	0	1	**210**	0	4	109	9	0	0	**122**	6
12:15PM	32	113	34	0	2	**181**	2	13	105	8	0	0	**126**	3
12:30PM	46	126	30	0	1	**203**	0	11	121	4	0	0	**136**	5
Total	169	470	137	0	6	**782**	4	42	435	29	0	0	**506**	17
% Approach	21.6%	60.1%	17.5%	0%	0.8%	**-**	-	8.3%	86.0%	5.7%	0%	0%	**-**	-
% Total	6.4%	17.7%	5.2%	0%	0.2%	**29.5%**	-	1.6%	16.4%	1.1%	0%	0%	**19.1%**	-
PHF	0.782	0.933	0.778	-	0.750	**0.931**	-	0.750	0.899	0.806	-	-	**0.930**	-
Lights	166	468	135	0	5	**774**	-	42	427	29	0	0	**498**	-
% Lights	98.2%	99.6%	98.5%	0%	83.3%	**99.0%**	-	100%	98.2%	100%	0%	0%	**98.4%**	-
Articulated Trucks	1	0	0	0	0	**1**	-	0	0	0	0	0	**0**	-
% Articulated Trucks	0.6%	0%	0%	0%	0%	**0.1%**	-	0%	0%	0%	0%	0%	**0%**	-
Buses and Single-Unit Trucks	2	2	2	0	1	**7**	-	0	8	0	0	0	**8**	-
% Buses and Single-Unit Trucks	1.2%	0.4%	1.5%	0%	16.7%	**0.9%**	-	0%	1.8%	0%	0%	0%	**1.6%**	-
Pedestrians	-	-	-	-	-	-	3	-	-	-	-	-	-	15
% Pedestrians	-	-	-	-	-	-	75.0%	-	-	-	-	-	-	88.2%
Bicycles on Crosswalk	-	-	-	-	-	-	1	-	-	-	-	-	-	2
% Bicycles on Crosswalk	-	-	-	-	-	-	25.0%	-	-	-	-	-	-	11.8%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	North Avenue Eastbound							North Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:45AM	15	85	49	0	0	**149**	7	49	125	19	0	0	**193**	3	**652**
12:00PM	18	103	40	0	0	**161**	0	50	116	18	0	0	**184**	6	**677**
12:15PM	19	100	40	0	0	**159**	2	54	131	9	0	0	**194**	4	**660**
12:30PM	18	79	32	0	1	**130**	7	45	138	12	0	0	**195**	5	**664**
Total	70	367	161	0	1	**599**	16	198	510	58	0	0	**766**	18	**2653**
% Approach	11.7%	61.3%	26.9%	0%	0.2%	**-**	-	25.8%	66.6%	7.6%	0%	0%	**-**	-	**-**
% Total	2.6%	13.8%	6.1%	0%	0%	**22.6%**	-	7.5%	19.2%	2.2%	0%	0%	**28.9%**	-	**-**
PHF	0.921	0.891	0.821	-	0.250	**0.930**	-	0.917	0.924	0.763	-	-	**0.982**	-	0.980
Lights	70	362	158	0	1	**591**	-	194	500	57	0	0	**751**	-	2614
% Lights	100%	98.6%	98.1%	0%	100%	**98.7%**	-	98.0%	98.0%	98.3%	0%	0%	**98.0%**	-	98.5%
Articulated Trucks	0	2	1	0	0	**3**	-	1	0	0	0	0	**1**	-	5
% Articulated Trucks	0%	0.5%	0.6%	0%	0%	**0.5%**	-	0.5%	0%	0%	0%	0%	**0.1%**	-	0.2%
Buses and Single-Unit Trucks	0	3	2	0	0	**5**	-	3	10	1	0	0	**14**	-	34
% Buses and Single-Unit Trucks	0%	0.8%	1.2%	0%	0%	**0.8%**	-	1.5%	2.0%	1.7%	0%	0%	**1.8%**	-	1.3%
Pedestrians	-	-	-	-	-	-	16	-	-	-	-	-	-	17	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	94.4%	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	5.6%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
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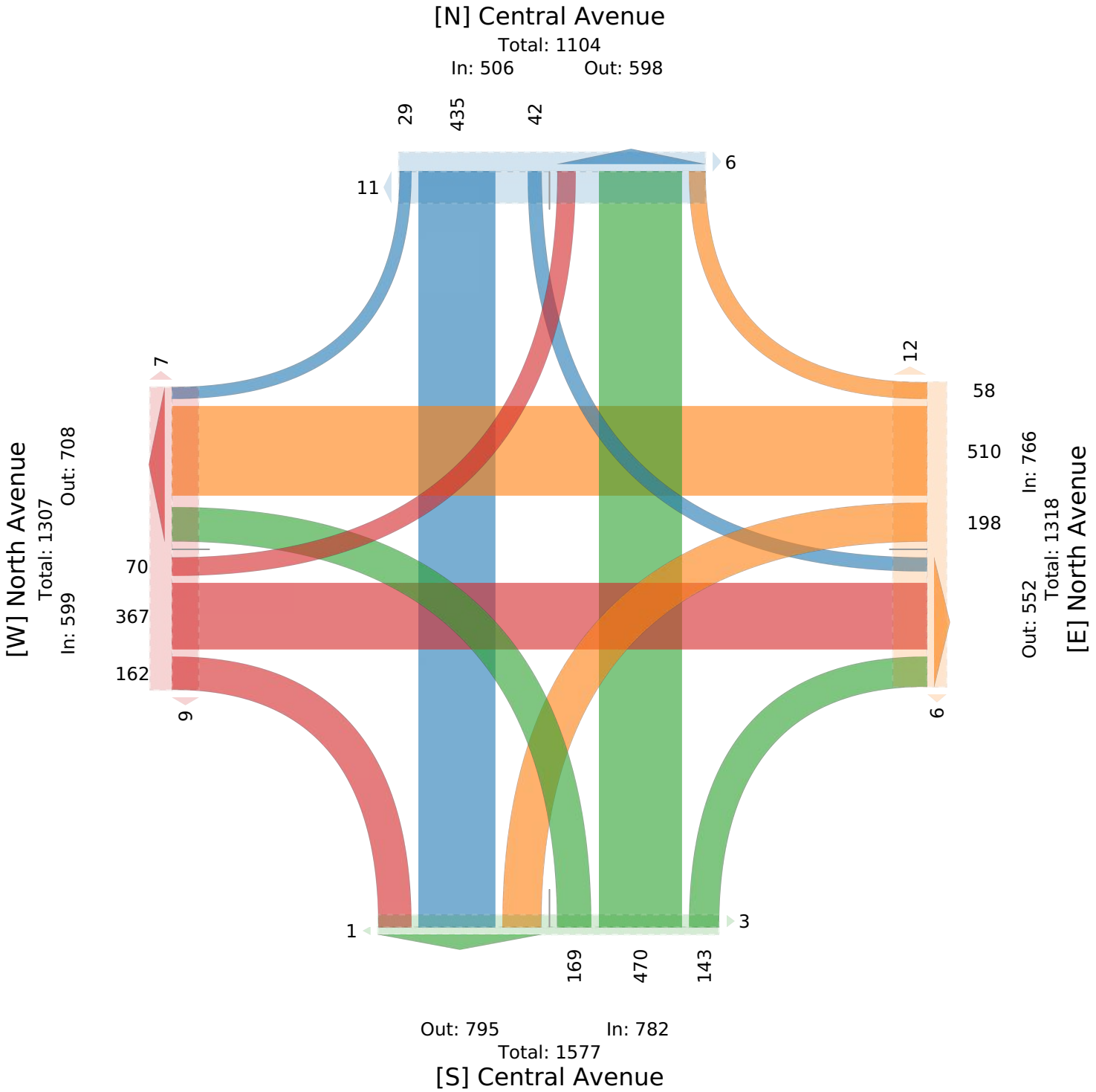


11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Central Avenue Northbound							Central Avenue Southbound						
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*
2022-06-18 1:00PM	28	104	28	0	1	**161**	2	20	107	9	0	1	**137**	2
1:15PM	41	109	27	0	5	**182**	3	11	103	6	0	2	**122**	2
1:30PM	46	96	27	0	4	**173**	5	8	105	14	0	4	**131**	4
1:45PM	45	91	35	0	1	**172**	0	14	92	6	0	0	**112**	2
Total	160	400	117	0	11	**688**	10	53	407	35	0	7	**502**	10
% Approach	23.3%	58.1%	17.0%	0%	1.6%	**-**	-	10.6%	81.1%	7.0%	0%	1.4%	**-**	-
% Total	6.6%	16.6%	4.8%	0%	0.5%	**28.5%**	-	2.2%	16.9%	1.4%	0%	0.3%	**20.8%**	-
PHF	0.870	0.917	0.836	-	0.550	**0.945**	-	0.663	0.951	0.625	-	0.438	**0.916**	-
Lights	159	398	115	0	11	**683**	-	52	405	34	0	7	**498**	-
% Lights	99.4%	99.5%	98.3%	0%	100%	**99.3%**	-	98.1%	99.5%	97.1%	0%	100%	**99.2%**	-
Articulated Trucks	0	0	0	0	0	**0**	-	1	1	0	0	0	**2**	-
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	1.9%	0.2%	0%	0%	0%	**0.4%**	-
Buses and Single-Unit Trucks	1	2	2	0	0	**5**	-	0	1	1	0	0	**2**	-
% Buses and Single-Unit Trucks	0.6%	0.5%	1.7%	0%	0%	**0.7%**	-	0%	0.2%	2.9%	0%	0%	**0.4%**	-
Pedestrians	-	-	-	-	-	-	10	-	-	-	-	-	-	10
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

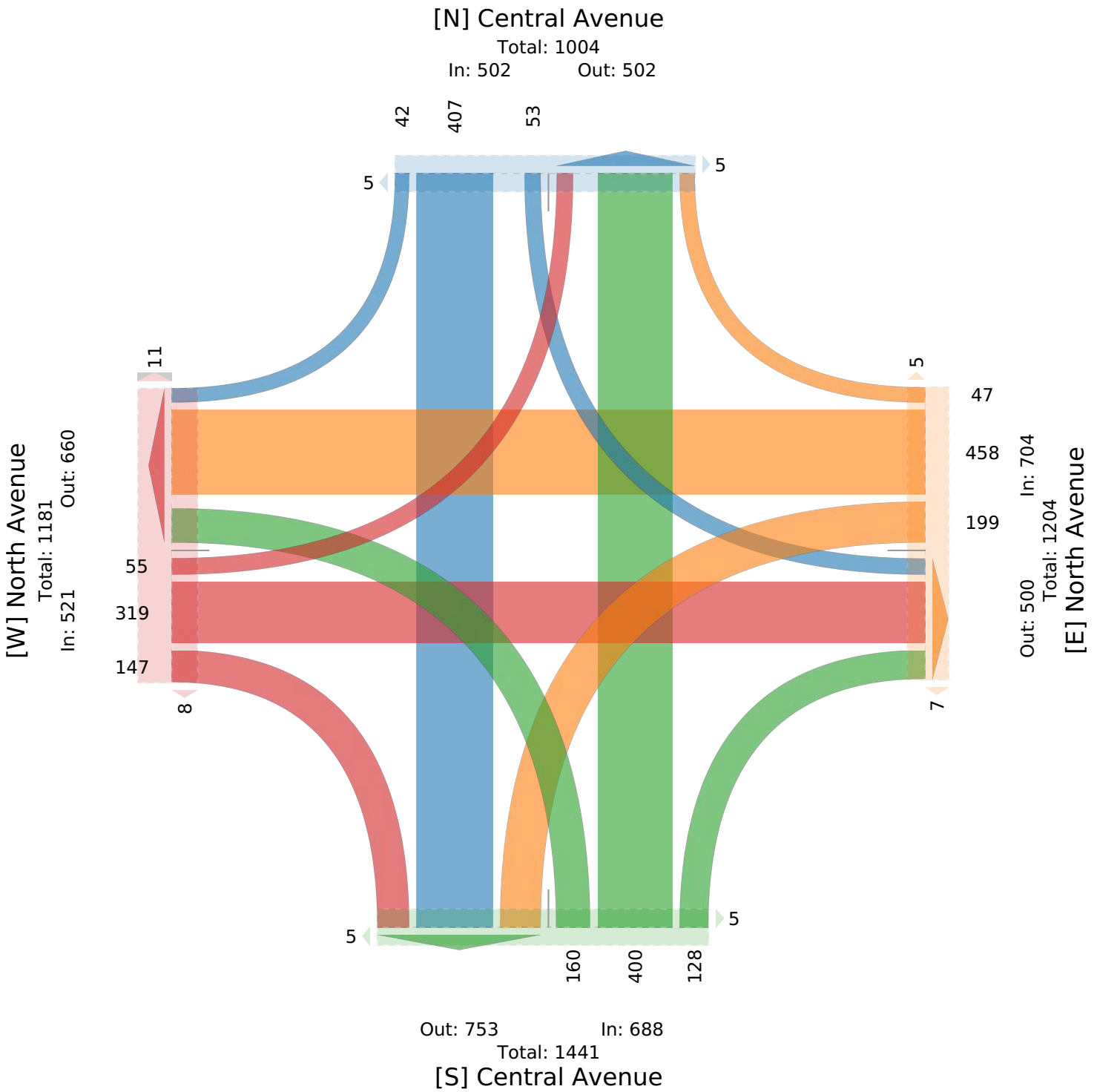
Leg Direction	North Avenue Eastbound							North Avenue Westbound							
Time	L	T	R	U	RR	**App**	Ped*	L	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 1:00PM	18	80	31	0	1	**130**	2	52	134	8	0	0	**194**	4	**622**
1:15PM	17	85	39	0	0	**141**	2	49	102	14	0	0	**165**	0	**610**
1:30PM	13	70	42	0	1	**126**	9	51	119	13	0	0	**183**	5	**613**
1:45PM	7	84	32	0	1	**124**	6	47	103	12	0	0	**162**	3	**570**
Total	55	319	144	0	3	**521**	19	199	458	47	0	0	**704**	12	**2415**
% Approach	10.6%	61.2%	27.6%	0%	0.6%	**-**	-	28.3%	65.1%	6.7%	0%	0%	**-**	-	**-**
% Total	2.3%	13.2%	6.0%	0%	0.1%	**21.6%**	-	8.2%	19.0%	1.9%	0%	0%	**29.2%**	-	**-**
PHF	0.764	0.938	0.857	-	0.750	**0.924**	-	0.957	0.854	0.839	-	-	**0.907**	-	0.971
Lights	55	316	144	0	3	**518**	-	199	454	47	0	0	**700**	-	2399
% Lights	100%	99.1%	100%	0%	100%	**99.4%**	-	100%	99.1%	100%	0%	0%	**99.4%**	-	99.3%
Articulated Trucks	0	0	0	0	0	**0**	-	0	0	0	0	0	**0**	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	3	0	0	0	**3**	-	0	4	0	0	0	**4**	-	14
% Buses and Single-Unit Trucks	0%	0.9%	0%	0%	0%	**0.6%**	-	0%	0.9%	0%	0%	0%	**0.6%**	-	0.6%
Pedestrians	-	-	-	-	-	-	19	-	-	-	-	-	-	12	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

11. Central Avenue and North Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965718, Location: 40.650552, -74.345391, Site Code: 11

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650552, -74.345391

Count Name: 11. Central Avenue and North Avenue
Site Code: 11
Start Date: 06/18/2022

Turning Movement Data

Start Time	North Avenue Eastbound							North Avenue Westbound							Central Avenue Northbound							Central Avenue Southbound							
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	Int. Total
11:00 AM	0	10	85	32	1	0	128	0	51	125	17	0	0	193	0	48	104	37	0	1	189	0	7	120	9	0	1	136	646
11:15 AM	0	10	95	35	0	3	140	0	44	110	22	1	5	177	0	44	109	32	2	2	187	0	17	98	7	0	6	122	626
11:30 AM	0	12	86	34	0	6	132	0	37	121	15	1	6	174	0	45	121	33	3	3	202	0	13	114	9	0	4	136	644
11:45 AM	0	15	85	49	0	7	149	0	49	125	19	0	3	193	0	37	105	44	2	2	188	0	14	100	8	0	3	122	652
Hourly Total	0	47	351	150	1	16	549	0	181	481	73	2	14	737	0	174	439	146	7	8	766	0	51	432	33	0	14	516	2568
12:00 PM	0	18	103	40	0	0	161	0	50	116	18	0	6	184	0	54	126	29	1	0	210	0	4	109	9	0	6	122	677
12:15 PM	0	19	100	40	0	2	159	0	54	131	9	0	4	194	0	32	113	34	2	2	181	0	13	105	8	0	3	126	660
12:30 PM	0	18	79	32	1	7	130	0	45	138	12	0	5	195	0	46	126	30	1	0	203	0	11	121	4	0	5	136	664
12:45 PM	0	17	86	40	0	3	143	0	50	123	20	1	6	194	0	35	84	20	2	3	141	0	12	98	15	0	1	125	603
Hourly Total	0	72	368	152	1	12	593	0	199	508	59	1	21	767	0	167	449	113	6	5	735	0	40	433	36	0	15	509	2604
1:00 PM	0	18	80	31	1	2	130	0	52	134	8	0	4	194	0	28	104	28	1	2	161	0	20	107	9	1	2	137	622
1:15 PM	0	17	85	39	0	2	141	0	49	102	14	0	0	165	0	41	109	27	5	3	182	0	11	103	6	2	2	122	610
1:30 PM	0	13	70	42	1	9	126	0	51	119	13	0	5	183	0	46	96	27	4	5	173	0	8	105	14	4	4	131	613
1:45 PM	0	7	84	32	1	6	124	0	47	103	12	0	3	162	0	45	91	35	1	0	172	0	14	92	6	0	2	112	570
Hourly Total	0	55	319	144	3	19	521	0	199	458	47	0	12	704	0	160	400	117	11	10	688	0	53	407	35	7	10	502	2415
Grand Total	0	174	1038	446	5	47	1663	0	579	1447	179	3	47	2208	0	501	1288	376	24	23	2189	0	144	1272	104	7	39	1527	7587
Approach %	0.0	10.5	62.4	26.8	0.3	-	-	0.0	26.2	65.5	8.1	0.1	-	-	0.0	22.9	58.8	17.2	1.1	-	-	0.0	9.4	83.3	6.8	0.5	-	-	-
Total %	0.0	2.3	13.7	5.9	0.1	-	21.9	0.0	7.6	19.1	2.4	0.0	-	29.1	0.0	6.6	17.0	5.0	0.3	-	28.9	0.0	1.9	16.8	1.4	0.1	-	20.1	-
Lights	0	172	1027	443	5	-	1647	0	572	1424	177	3	-	2176	0	491	1280	371	23	-	2165	0	139	1255	102	7	-	1503	7491
% Lights	-	98.9	98.9	99.3	100.0	-	99.0	-	98.8	98.4	98.9	100.0	-	98.6	-	98.0	99.4	98.7	95.8	-	98.9	-	96.5	98.7	98.1	100.0	-	98.4	98.7
Mediums	0	2	9	2	0	-	13	0	6	22	2	0	-	30	0	9	8	5	1	-	23	0	4	15	2	0	-	21	87
% Mediums	-	1.1	0.9	0.4	0.0	-	0.8	-	1.0	1.5	1.1	0.0	-	1.4	-	1.8	0.6	1.3	4.2	-	1.1	-	2.8	1.2	1.9	0.0	-	1.4	1.1
Articulated Trucks	0	0	2	1	0	-	3	0	1	1	0	0	-	2	0	1	0	0	0	-	1	0	1	2	0	0	-	3	9
% Articulated Trucks	-	0.0	0.2	0.2	0.0	-	0.2	-	0.2	0.1	0.0	0.0	-	0.1	-	0.2	0.0	0.0	0.0	-	0.0	-	0.7	0.2	0.0	0.0	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	-	4.3	-	-	-	-	-	-	4.3	-	-	-	-	-	-	8.7	-	-	-	-	-	-	7.7	-	-
Pedestrians	-	-	-	-	-	45	-	-	-	-	-	-	45	-	-	-	-	-	-	21	-	-	-	-	-	-	36	-	-
% Pedestrians	-	-	-	-	-	95.7	-	-	-	-	-	-	95.7	-	-	-	-	-	-	91.3	-	-	-	-	-	-	92.3	-	-

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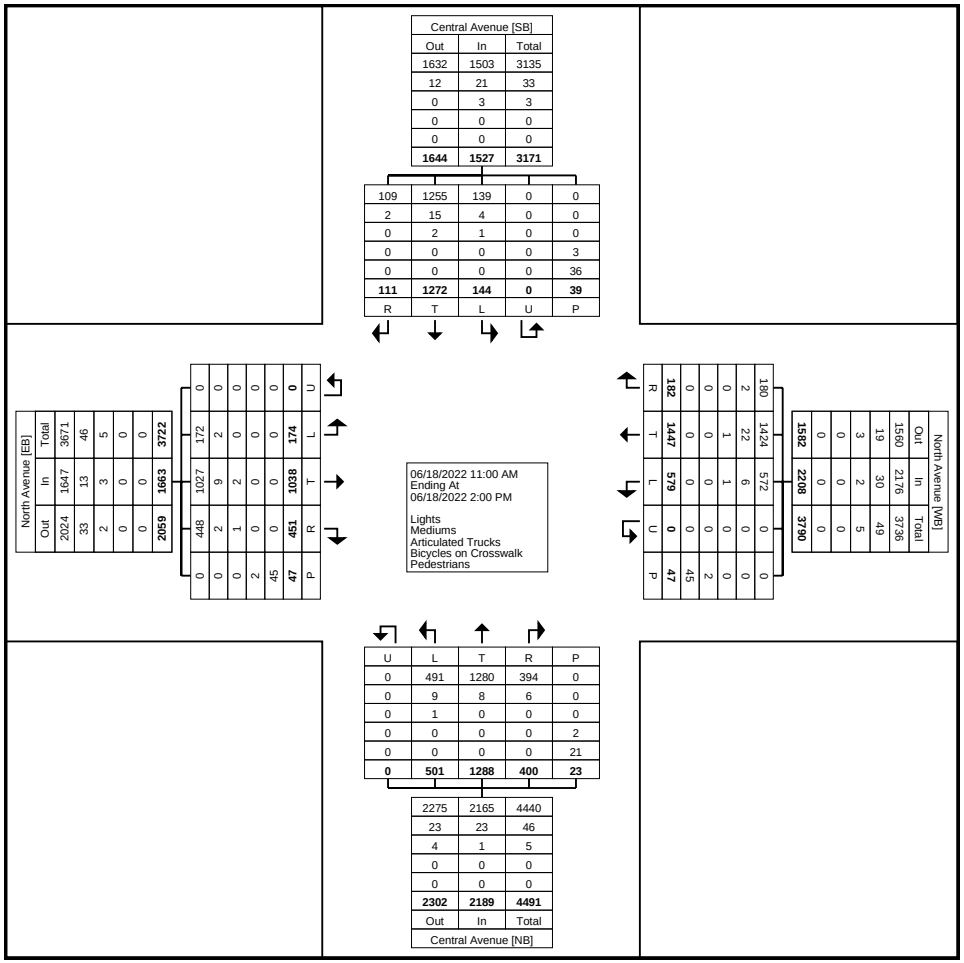
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650552, -74.345391

Count Name: 11. Central Avenue and North Avenue
Site Code: 11
Start Date: 06/18/2022



Turning Movement Data Plot

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650552, -74.345391

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Count Name: 11. Central Avenue and North Avenue
Site Code: 11
Start Date: 06/18/2022

Turning Movement Peak Hour Data (11:45 AM)

Start Time	North Avenue Eastbound							North Avenue Westbound							Central Avenue Northbound							Central Avenue Southbound							
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	Int. Total
11:45 AM	0	15	85	49	0	7	149	0	49	125	19	0	3	193	0	37	105	44	2	2	188	0	14	100	8	0	3	122	652
12:00 PM	0	18	103	40	0	0	161	0	50	116	18	0	6	184	0	54	126	29	1	0	210	0	4	109	9	0	6	122	677
12:15 PM	0	19	100	40	0	2	159	0	54	131	9	0	4	194	0	32	113	34	2	2	181	0	13	105	8	0	3	126	660
12:30 PM	0	18	79	32	1	7	130	0	45	138	12	0	5	195	0	46	126	30	1	0	203	0	11	121	4	0	5	136	664
Total	0	70	367	161	1	16	599	0	198	510	58	0	18	766	0	169	470	137	6	4	782	0	42	435	29	0	17	506	2653
Approach %	0.0	11.7	61.3	26.9	0.2	-	-	0.0	25.8	66.6	7.6	0.0	-	-	0.0	21.6	60.1	17.5	0.8	-	-	0.0	8.3	86.0	5.7	0.0	-	-	-
Total %	0.0	2.6	13.8	6.1	0.0	-	22.6	0.0	7.5	19.2	2.2	0.0	-	28.9	0.0	6.4	17.7	5.2	0.2	-	29.5	0.0	1.6	16.4	1.1	0.0	-	19.1	-
PHF	0.000	0.921	0.891	0.821	0.250	-	0.930	0.000	0.917	0.924	0.763	0.000	-	0.982	0.000	0.782	0.933	0.778	0.750	-	0.931	0.000	0.750	0.899	0.806	0.000	-	0.930	0.980
Lights	0	70	362	158	1	-	591	0	194	500	57	0	-	751	0	166	468	135	5	-	774	0	42	427	29	0	-	498	2614
% Lights	-	100.0	98.6	98.1	100.0	-	98.7	-	98.0	98.0	98.3	-	-	98.0	-	98.2	99.6	98.5	83.3	-	99.0	-	100.0	98.2	100.0	-	-	98.4	98.5
Mediums	0	0	3	2	0	-	5	0	3	10	1	0	-	14	0	2	2	2	1	-	7	0	0	8	0	0	-	8	34
% Mediums	-	0.0	0.8	1.2	0.0	-	0.8	-	1.5	2.0	1.7	-	-	1.8	-	1.2	0.4	1.5	16.7	-	0.9	-	0.0	1.8	0.0	-	-	1.6	1.3
Articulated Trucks	0	0	2	1	0	-	3	0	1	0	0	0	-	1	0	1	0	0	0	-	1	0	0	0	0	0	-	0	5
% Articulated Trucks	-	0.0	0.5	0.6	0.0	-	0.5	-	0.5	0.0	0.0	-	-	0.1	-	0.6	0.0	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	-	0.0	-	-	-	-	-	-	5.6	-	-	-	-	-	-	25.0	-	-	-	-	-	-	11.8	-	-
Pedestrians	-	-	-	-	-	16	-	-	-	-	-	-	17	-	-	-	-	-	-	3	-	-	-	-	-	-	15	-	-
% Pedestrians	-	-	-	-	-	100.0	-	-	-	-	-	-	94.4	-	-	-	-	-	-	75.0	-	-	-	-	-	-	88.2	-	-

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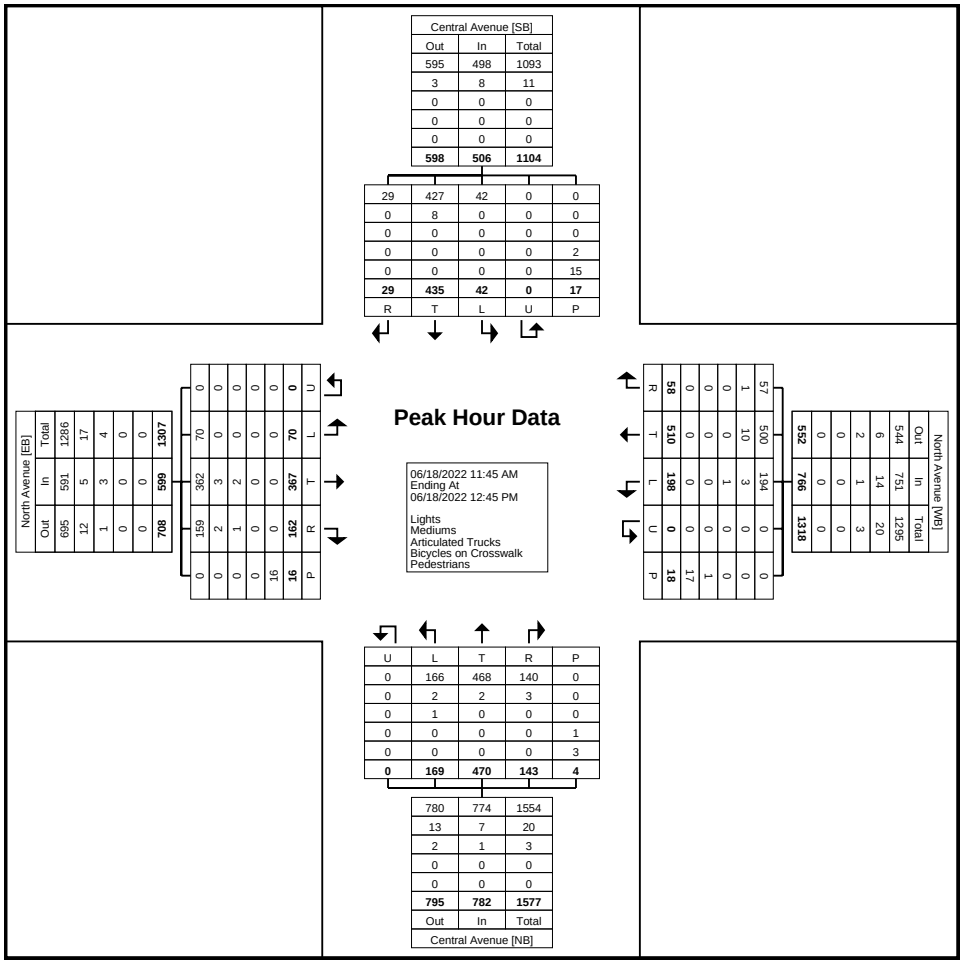
Setup: NR/DR
Location: 40.650552, -74.345391

Count Name: 11. Central Avenue and North Avenue
Site Code: 11
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (11:45 AM)

13. Broad Street and Mountain Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965729, Location: 40.652919, -74.347123, Site Code: 13

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg / Direction	Mountain Avenue Southbound						Broad Street Eastbound					Broad Street Westbound						
Time	L	R	U	RR	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:00AM	0	0	0	101	**101**	13	91	73	0	**164**	0	100	7	0	0	**107**	14	**372**
11:15AM	0	0	0	105	**105**	12	92	89	0	**181**	0	93	7	0	0	**100**	3	**386**
11:30AM	0	0	0	100	**100**	12	90	97	0	**187**	0	92	8	0	0	**100**	4	**387**
11:45AM	0	0	0	101	**101**	23	93	103	0	**196**	0	111	13	0	0	**124**	6	**421**
Hourly Total	0	0	0	407	**407**	60	366	362	0	**728**	0	396	35	0	0	**431**	27	**1566**
12:00PM	0	0	0	114	**114**	10	105	85	0	**190**	0	112	10	0	0	**122**	8	**426**
12:15PM	1	0	0	114	**115**	12	99	96	0	**195**	0	90	5	0	0	**95**	3	**405**
12:30PM	0	0	0	81	**81**	10	94	84	0	**178**	0	126	11	0	0	**137**	11	**396**
12:45PM	0	0	0	105	**105**	12	82	83	0	**165**	0	95	13	0	0	**108**	4	**378**
Hourly Total	1	0	0	414	**415**	44	380	348	0	**728**	0	423	39	0	0	**462**	26	**1605**
1:00PM	0	0	0	111	**111**	15	87	76	0	**163**	0	104	11	0	0	**115**	12	**389**
1:15PM	0	0	0	94	**94**	16	96	81	0	**177**	0	101	11	0	1	**113**	2	**384**
1:30PM	0	0	0	95	**95**	18	89	92	0	**181**	0	91	12	0	0	**103**	4	**379**
1:45PM	0	0	0	97	**97**	8	92	67	0	**159**	0	94	14	0	0	**108**	5	**364**
Hourly Total	0	0	0	397	**397**	57	364	316	0	**680**	0	390	48	0	1	**439**	23	**1516**
Total	1	0	0	1218	**1219**	161	1110	1026	0	**2136**	0	1209	122	0	1	**1332**	76	**4687**
% Approach	0.1%	0%	0%	99.9%	**-**	-	52.0%	48.0%	0%	**-**	-	90.8%	9.2%	0%	0.1%	**-**	-	**-**
% Total	0%	0%	0%	26.0%	**26.0%**	-	23.7%	21.9%	0%	**45.6%**	-	25.8%	2.6%	0%	0%	**28.4%**	-	**-**
Lights	1	0	0	1195	**1196**	-	1096	1017	0	**2113**	-	1195	122	0	1	**1318**	-	4627
% Lights	100%	0%	0%	98.1%	**98.1%**	-	98.7%	99.1%	0%	**98.9%**	-	98.8%	100%	0%	100%	**98.9%**	-	98.7%
Articulated Trucks	0	0	0	5	**5**	-	1	1	0	**2**	-	3	0	0	0	**3**	-	10
% Articulated Trucks	0%	0%	0%	0.4%	**0.4%**	-	0.1%	0.1%	0%	**0.1%**	-	0.2%	0%	0%	0%	**0.2%**	-	0.2%
Buses and Single-Unit Trucks	0	0	0	18	**18**	-	13	8	0	**21**	-	11	0	0	0	**11**	-	50
% Buses and Single-Unit Trucks	0%	0%	0%	1.5%	**1.5%**	-	1.2%	0.8%	0%	**1.0%**	-	0.9%	0%	0%	0%	**0.8%**	-	1.1%
Pedestrians	-	-	-	-	-	142	-	-	-	-	0	-	-	-	-	-	67	
% Pedestrians	-	-	-	-	-	88.2%	-	-	-	-	-	-	-	-	-	-	88.2%	-
Bicycles on Crosswalk	-	-	-	-	-	19	-	-	-	-	0	-	-	-	-	-	9	
% Bicycles on Crosswalk	-	-	-	-	-	11.8%	-	-	-	-	-	-	-	-	-	-	11.8%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

13. Broad Street and Mountain Avenue - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965729, Location: 40.652919, -74.347123, Site Code: 13

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
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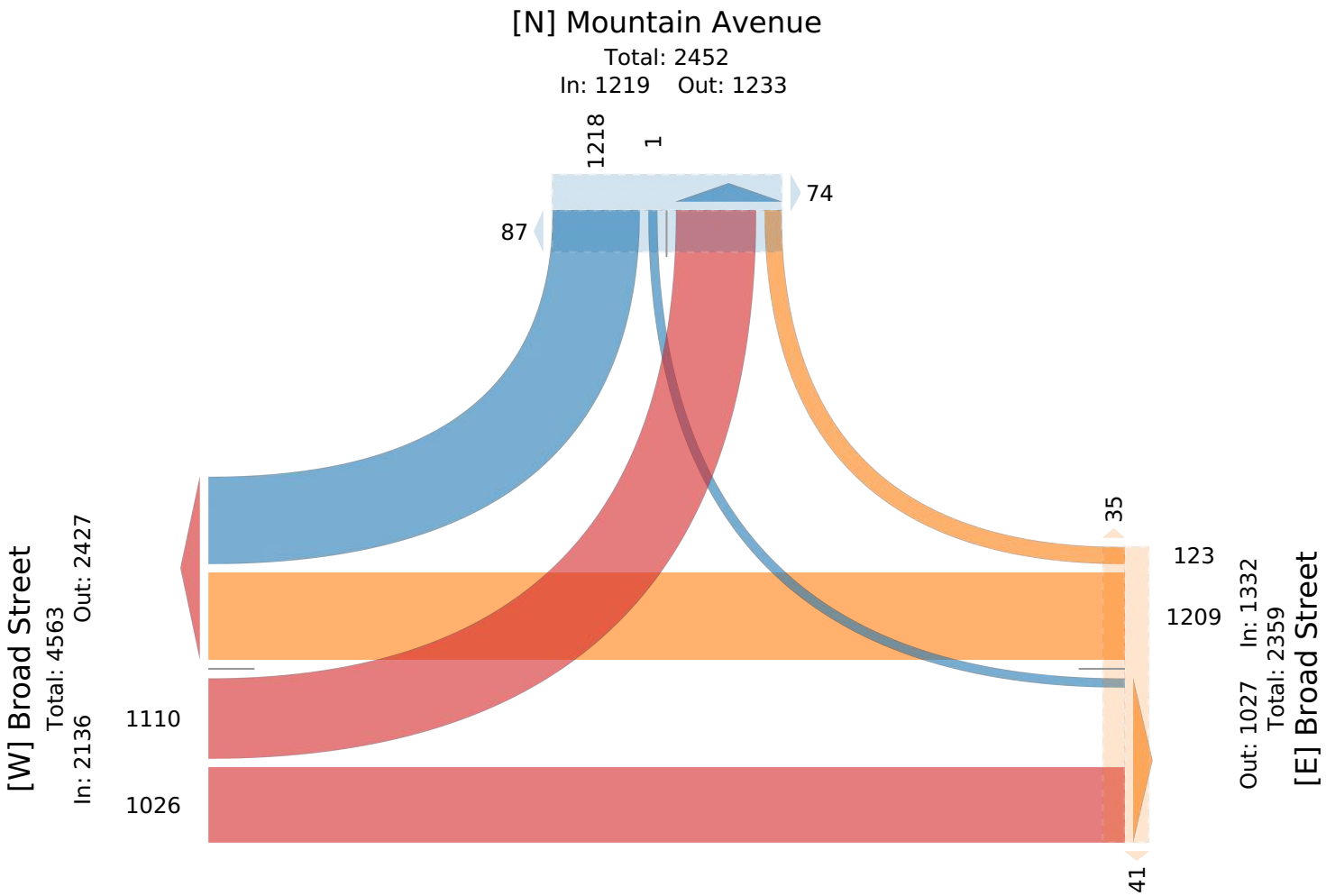


13. Broad Street and Mountain Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965729, Location: 40.652919, -74.347123, Site Code: 13

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

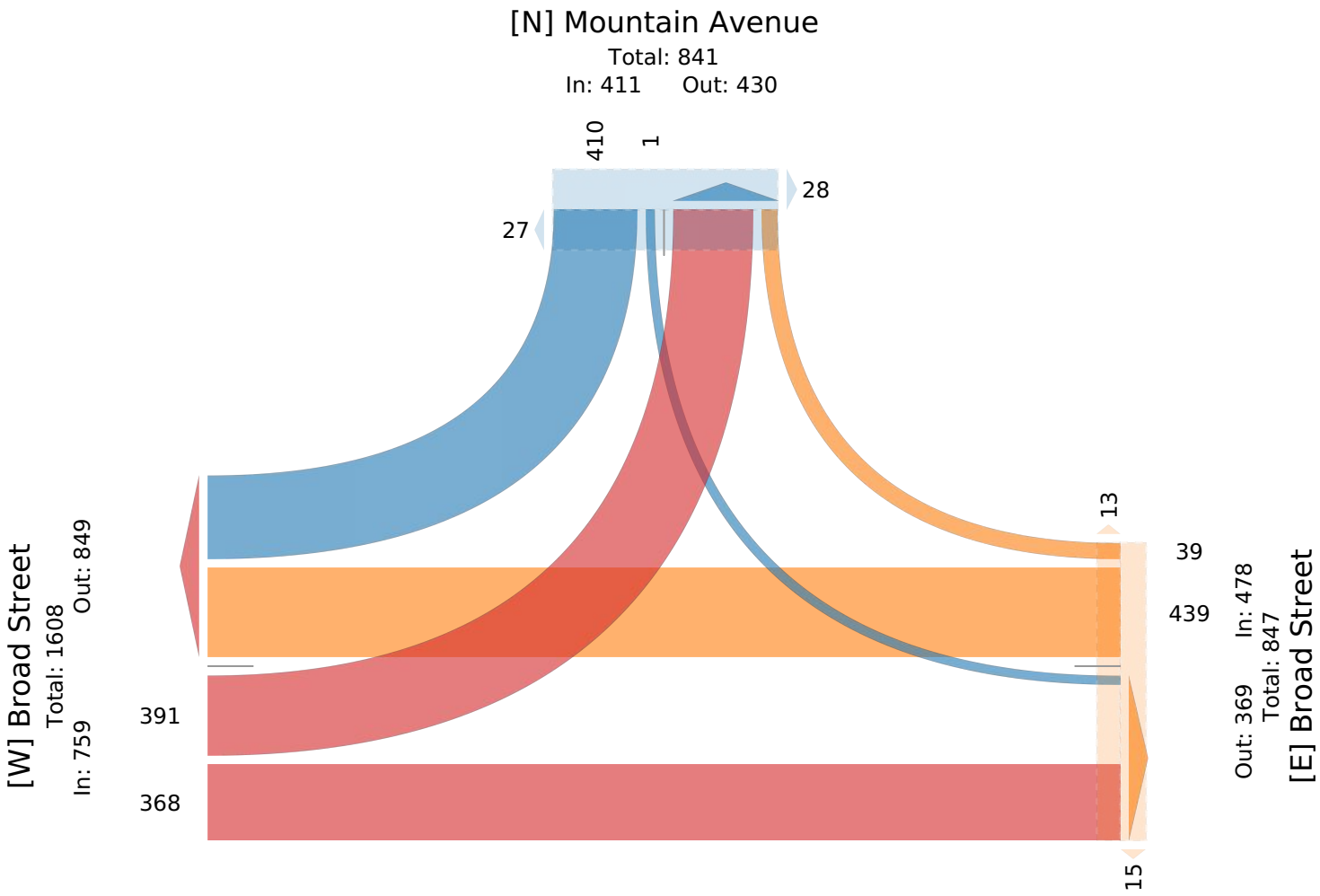
Leg Direction	Mountain Avenue Southbound						Broad Street Eastbound					Broad Street Westbound						
Time	L	R	U	RR	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 11:45AM	0	0	0	101	**101**	23	93	103	0	**196**	0	111	13	0	0	**124**	6	**421**
12:00PM	0	0	0	114	**114**	10	105	85	0	**190**	0	112	10	0	0	**122**	8	**426**
12:15PM	1	0	0	114	**115**	12	99	96	0	**195**	0	90	5	0	0	**95**	3	**405**
12:30PM	0	0	0	81	**81**	10	94	84	0	**178**	0	126	11	0	0	**137**	11	**396**
Total	1	0	0	410	**411**	55	391	368	0	**759**	0	439	39	0	0	**478**	28	**1648**
% Approach	0.2%	0%	0%	99.8%	**-**	-	51.5%	48.5%	0%	**-**	-	91.8%	8.2%	0%	0%	**-**	-	**-**
% Total	0.1%	0%	0%	24.9%	**24.9%**	-	23.7%	22.3%	0%	**46.1%**	-	26.6%	2.4%	0%	0%	**29.0%**	-	**-**
PHF	0.250	-	-	0.899	**0.893**	-	0.931	0.893	-	**0.968**	-	0.871	0.750	-	-	**0.872**	-	0.967
Lights	1	0	0	402	**403**	-	389	364	0	**753**	-	434	39	0	0	**473**	-	1629
% Lights	100%	0%	0%	98.0%	**98.1%**	-	99.5%	98.9%	0%	**99.2%**	-	98.9%	100%	0%	0%	**99.0%**	-	98.8%
Articulated Trucks	0	0	0	0	**0**	-	0	1	0	**1**	-	1	0	0	0	**1**	-	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0.3%	0%	**0.1%**	-	0.2%	0%	0%	0%	**0.2%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	8	**8**	-	2	3	0	**5**	-	4	0	0	0	**4**	-	17
% Buses and Single-Unit Trucks	0%	0%	0%	2.0%	**1.9%**	-	0.5%	0.8%	0%	**0.7%**	-	0.9%	0%	0%	0%	**0.8%**	-	1.0%
Pedestrians	-	-	-	-	-	53	-	-	-	-	0	-	-	-	-	-	24	
% Pedestrians	-	-	-	-	-	96.4%	-	-	-	-	-	-	-	-	-	-	85.7%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	0	-	-	-	-	-	4	
% Bicycles on Crosswalk	-	-	-	-	-	3.6%	-	-	-	-	-	-	-	-	-	-	14.3%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

13. Broad Street and Mountain Avenue - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965729, Location: 40.652919, -74.347123, Site Code: 13

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



13. Broad Street and Mountain Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965729, Location: 40.652919, -74.347123, Site Code: 13

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg Direction	Mountain Avenue Southbound						Broad Street Eastbound					Broad Street Westbound						
Time	L	R	U	RR	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	RR	**App**	Ped*	**Int**
2022-06-18 1:00PM	0	0	0	111	**111**	15	87	76	0	**163**	0	104	11	0	0	**115**	12	**389**
1:15PM	0	0	0	94	**94**	16	96	81	0	**177**	0	101	11	0	1	**113**	2	**384**
1:30PM	0	0	0	95	**95**	18	89	92	0	**181**	0	91	12	0	0	**103**	4	**379**
1:45PM	0	0	0	97	**97**	8	92	67	0	**159**	0	94	14	0	0	**108**	5	**364**
Total	0	0	0	397	**397**	57	364	316	0	**680**	0	390	48	0	1	**439**	23	**1516**
% Approach	0%	0%	0%	100%	**-**	-	53.5%	46.5%	0%	**-**	-	88.8%	10.9%	0%	0.2%	**-**	-	**-**
% Total	0%	0%	0%	26.2%	**26.2%**	-	24.0%	20.8%	0%	**44.9%**	-	25.7%	3.2%	0%	0.1%	**29.0%**	-	**-**
PHF	-	-	-	0.894	**0.894**	-	0.948	0.859	-	**0.939**	-	0.938	0.857	-	0.250	**0.954**	-	0.974
Lights	0	0	0	394	**394**	-	358	314	0	**672**	-	386	48	0	1	**435**	-	1501
% Lights	0%	0%	0%	99.2%	**99.2%**	-	98.4%	99.4%	0%	**98.8%**	-	99.0%	100%	0%	100%	**99.1%**	-	99.0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	**0**	-	1	0	0	0	**1**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0.3%	0%	0%	0%	**0.2%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	3	**3**	-	6	2	0	**8**	-	3	0	0	0	**3**	-	14
% Buses and Single-Unit Trucks	0%	0%	0%	0.8%	**0.8%**	-	1.6%	0.6%	0%	**1.2%**	-	0.8%	0%	0%	0%	**0.7%**	-	0.9%
Pedestrians	-	-	-	-	-	45	-	-	-	-	0	-	-	-	-	-	19	
% Pedestrians	-	-	-	-	-	78.9%	-	-	-	-	-	-	-	-	-	-	82.6%	-
Bicycles on Crosswalk	-	-	-	-	-	12	-	-	-	-	0	-	-	-	-	-	4	
% Bicycles on Crosswalk	-	-	-	-	-	21.1%	-	-	-	-	-	-	-	-	-	-	17.4%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

13. Broad Street and Mountain Avenue - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965729, Location: 40.652919, -74.347123, Site Code: 13

Provided by: Imperial Traffic & Data Collection
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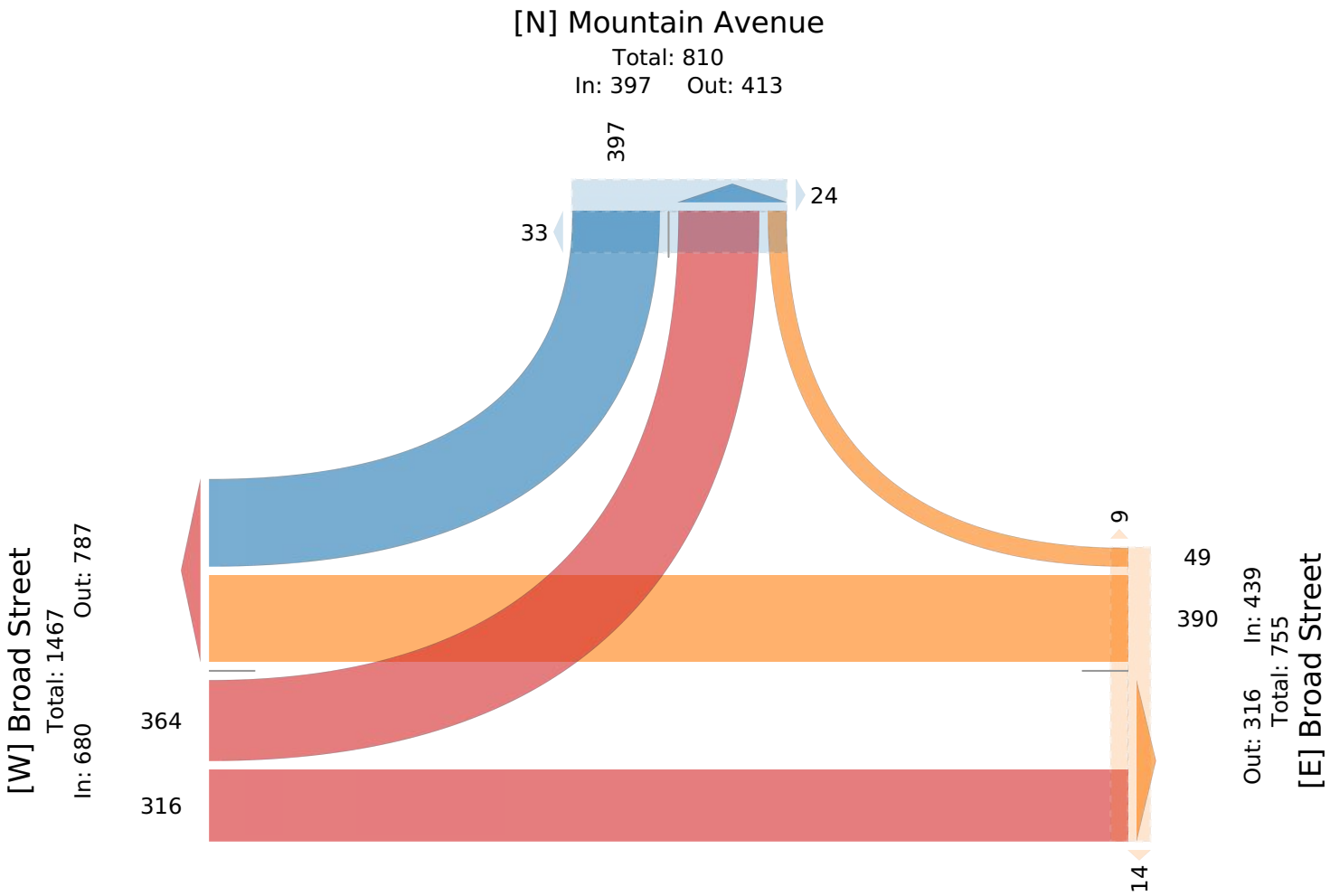
Cherry Hill, NJ, 08003, US



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PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.652919, -74.347123

Count Name: 13. Broad Street and Mountain Avenue
Site Code: 13
Start Date: 06/18/2022

Turning Movement Data

Start Time	Broad Street Eastbound					Broad Street Westbound						Mountain Avenue Southbound						
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Right	Right on Red	Peds	App. Total	Int. Total
11:00 AM	0	91	73	0	164	0	100	7	0	14	107	0	0	0	101	13	101	372
11:15 AM	0	92	89	0	181	0	93	7	0	3	100	0	0	0	105	12	105	386
11:30 AM	0	90	97	0	187	0	92	8	0	4	100	0	0	0	100	12	100	387
11:45 AM	0	93	103	0	196	0	111	13	0	6	124	0	0	0	101	23	101	421
Hourly Total	0	366	362	0	728	0	396	35	0	27	431	0	0	0	407	60	407	1566
12:00 PM	0	105	85	0	190	0	112	10	0	8	122	0	0	0	114	10	114	426
12:15 PM	0	99	96	0	195	0	90	5	0	3	95	0	1	0	114	12	115	405
12:30 PM	0	94	84	0	178	0	126	11	0	11	137	0	0	0	81	10	81	396
12:45 PM	0	82	83	0	165	0	95	13	0	4	108	0	0	0	105	12	105	378
Hourly Total	0	380	348	0	728	0	423	39	0	26	462	0	1	0	414	44	415	1605
1:00 PM	0	87	76	0	163	0	104	11	0	12	115	0	0	0	111	15	111	389
1:15 PM	0	96	81	0	177	0	101	11	1	2	113	0	0	0	94	16	94	384
1:30 PM	0	89	92	0	181	0	91	12	0	4	103	0	0	0	95	18	95	379
1:45 PM	0	92	67	0	159	0	94	14	0	5	108	0	0	0	97	8	97	364
Hourly Total	0	364	316	0	680	0	390	48	1	23	439	0	0	0	397	57	397	1516
Grand Total	0	1110	1026	0	2136	0	1209	122	1	76	1332	0	1	0	1218	161	1219	4687
Approach %	0.0	52.0	48.0	-	-	0.0	90.8	9.2	0.1	-	-	0.0	0.1	0.0	99.9	-	-	-
Total %	0.0	23.7	21.9	-	45.6	0.0	25.8	2.6	0.0	-	28.4	0.0	0.0	0.0	26.0	-	26.0	-
Lights	0	1096	1017	-	2113	0	1195	122	1	-	1318	0	1	0	1195	-	1196	4627
% Lights	-	98.7	99.1	-	98.9	-	98.8	100.0	100.0	-	98.9	-	100.0	-	98.1	-	98.1	98.7
Mediums	0	13	8	-	21	0	11	0	0	-	11	0	0	0	18	-	18	50
% Mediums	-	1.2	0.8	-	1.0	-	0.9	0.0	0.0	-	0.8	-	0.0	-	1.5	-	1.5	1.1
Articulated Trucks	0	1	1	-	2	0	3	0	0	-	3	0	0	0	5	-	5	10
% Articulated Trucks	-	0.1	0.1	-	0.1	-	0.2	0.0	0.0	-	0.2	-	0.0	-	0.4	-	0.4	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	-	9	-	-	-	-	-	19	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	11.8	-	-	-	-	-	11.8	-	-
Pedestrians	-	-	-	0	-	-	-	-	-	67	-	-	-	-	-	142	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	88.2	-	-	-	-	-	88.2	-	-

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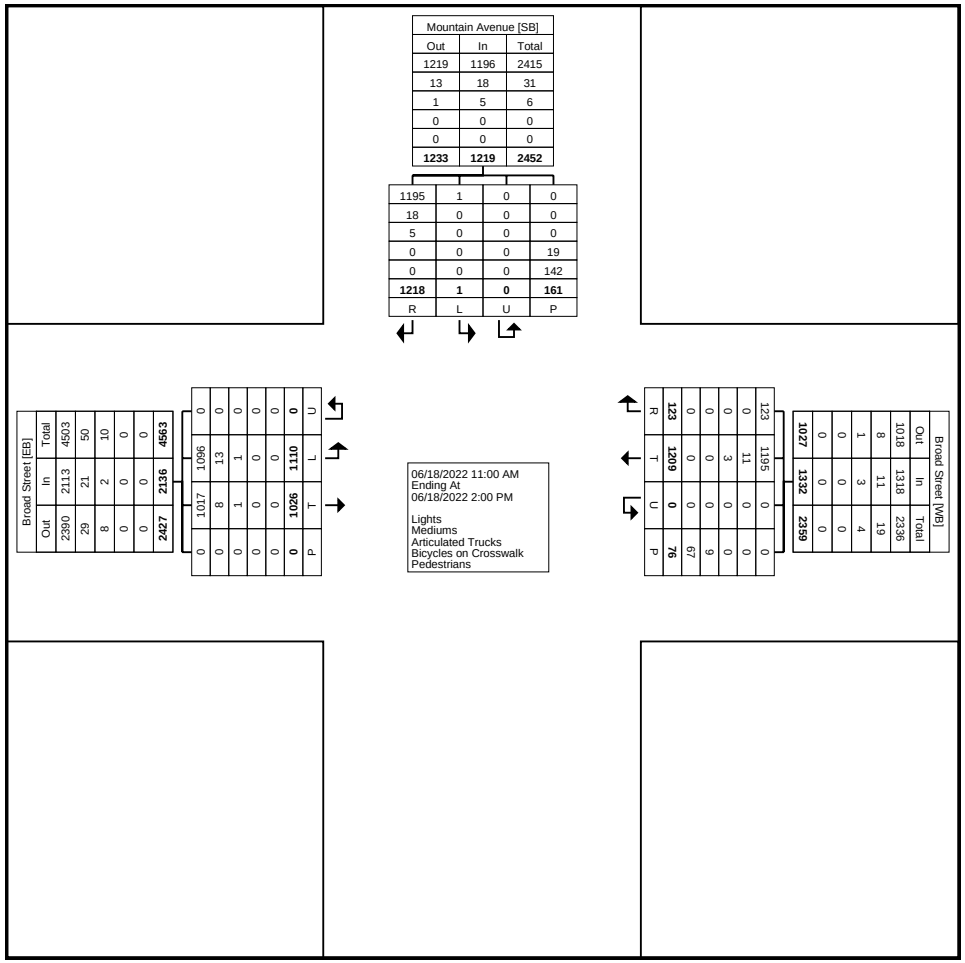
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.652919, -74.347123

Count Name: 13. Broad Street and Mountain Avenue
Site Code: 13
Start Date: 06/18/2022



Turning Movement Data Plot

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Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.652919, -74.347123

Count Name: 13. Broad Street and Mountain Avenue
Site Code: 13
Start Date: 06/18/2022

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Broad Street Eastbound					Broad Street Westbound						Mountain Avenue Southbound						
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Right	Right on Red	Peds	App. Total	Int. Total
11:45 AM	0	93	103	0	196	0	111	13	0	6	124	0	0	0	101	23	101	421
12:00 PM	0	105	85	0	190	0	112	10	0	8	122	0	0	0	114	10	114	426
12:15 PM	0	99	96	0	195	0	90	5	0	3	95	0	1	0	114	12	115	405
12:30 PM	0	94	84	0	178	0	126	11	0	11	137	0	0	0	81	10	81	396
Total	0	391	368	0	759	0	439	39	0	28	478	0	1	0	410	55	411	1648
Approach %	0.0	51.5	48.5	-	-	0.0	91.8	8.2	0.0	-	-	0.0	0.2	0.0	99.8	-	-	-
Total %	0.0	23.7	22.3	-	46.1	0.0	26.6	2.4	0.0	-	29.0	0.0	0.1	0.0	24.9	-	24.9	-
PHF	0.000	0.931	0.893	-	0.968	0.000	0.871	0.750	0.000	-	0.872	0.000	0.250	0.000	0.899	-	0.893	0.967
Lights	0	389	364	-	753	0	434	39	0	-	473	0	1	0	402	-	403	1629
% Lights	-	99.5	98.9	-	99.2	-	98.9	100.0	-	-	99.0	-	100.0	-	98.0	-	98.1	98.8
Mediums	0	2	3	-	5	0	4	0	0	-	4	0	0	0	8	-	8	17
% Mediums	-	0.5	0.8	-	0.7	-	0.9	0.0	-	-	0.8	-	0.0	-	2.0	-	1.9	1.0
Articulated Trucks	0	0	1	-	1	0	1	0	0	-	1	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.3	-	0.1	-	0.2	0.0	-	-	0.2	-	0.0	-	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	14.3	-	-	-	-	-	3.6	-	-
Pedestrians	-	-	-	0	-	-	-	-	-	24	-	-	-	-	-	53	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	85.7	-	-	-	-	-	96.4	-	-

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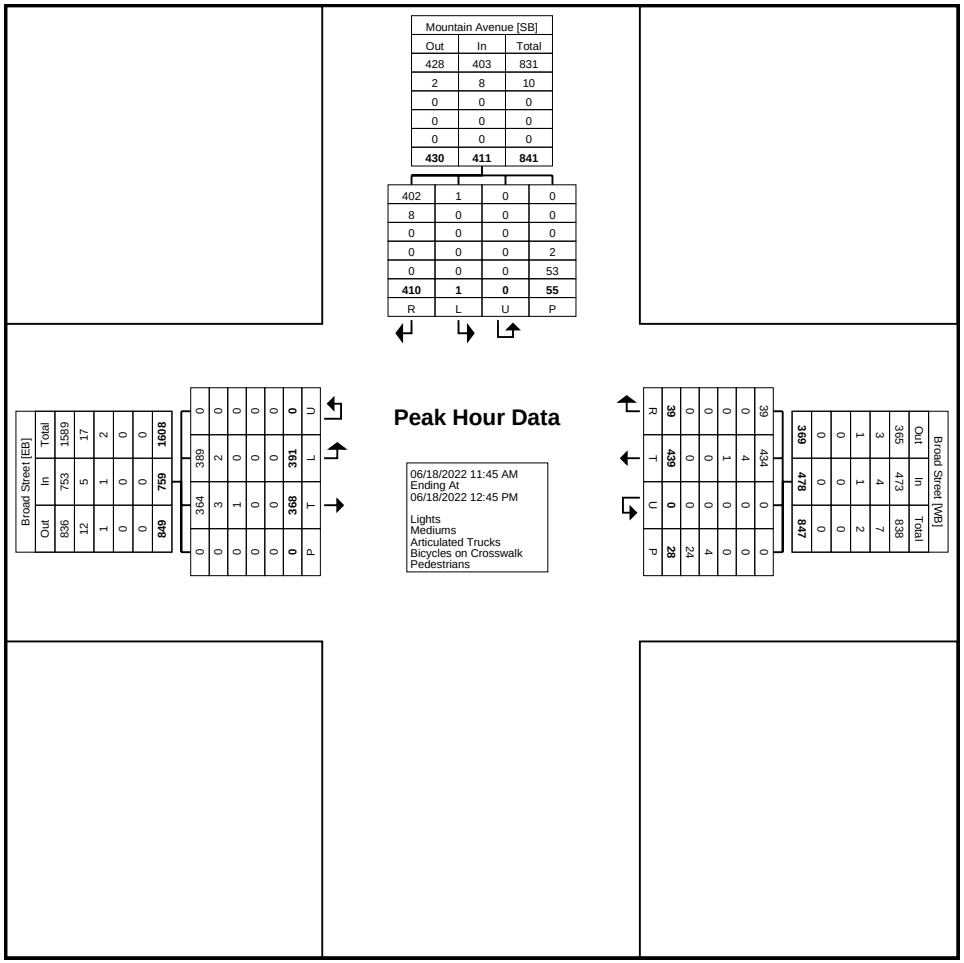

Turning Movement Peak Hour Data Plot (11:45 AM)

19. South Avenue and Boulevard - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965752, Location: 40.648909, -74.345889, Site Code: 19

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

Leg / Direction	Boulevard Northbound						Driveway Southbound					South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	4	0	20	0	**24**	2	0	0	2	**2**	-	0	173	6	0	**179**	3	11	136	0	0	**147**	2	**352**
11:15AM	10	0	26	0	**36**	1	0	0	6	**6**	-	0	136	9	0	**145**	0	9	146	0	0	**155**	1	**342**
11:30AM	9	0	21	0	**30**	2	0	0	1	**1**	-	0	134	10	0	**144**	1	7	129	0	0	**136**	0	**311**
11:45AM	13	0	24	0	**37**	2	0	0	4	**4**	-	0	146	6	0	**152**	1	9	131	0	0	**140**	1	**333**
Hourly Total	36	0	91	0	**127**	7	0	0	13	**13**	-	0	589	31	0	**620**	5	36	542	0	0	**578**	4	**1338**
12:00PM	12	0	18	0	**30**	7	0	0	3	**3**	-	0	149	13	0	**162**	5	6	119	0	0	**125**	2	**320**
12:15PM	16	0	24	0	**40**	12	0	0	4	**4**	-	1	152	6	0	**159**	3	3	111	0	0	**114**	2	**317**
12:30PM	13	0	22	0	**35**	9	1	1	9	**11**	-	0	142	9	0	**151**	3	9	113	0	0	**122**	1	**319**
12:45PM	4	0	29	0	**33**	5	0	0	5	**5**	-	0	156	11	0	**167**	2	8	129	0	0	**137**	1	**342**
Hourly Total	45	0	93	0	**138**	33	1	1	21	**23**	-	1	599	39	0	**639**	13	26	472	0	0	**498**	6	**1298**
1:00PM	17	0	31	0	**48**	1	0	0	7	**7**	-	0	138	11	0	**149**	4	8	123	0	0	**131**	2	**335**
1:15PM	8	0	22	0	**30**	3	0	0	2	**2**	-	0	154	11	0	**165**	1	7	139	0	0	**146**	0	**343**
1:30PM	9	0	19	0	**28**	0	0	0	3	**3**	-	0	130	11	0	**141**	2	7	112	0	0	**119**	2	**291**
1:45PM	5	0	18	0	**23**	1	0	0	10	**10**	-	0	144	7	0	**151**	9	7	108	0	0	**115**	2	**299**
Hourly Total	39	0	90	0	**129**	5	0	0	22	**22**	-	0	566	40	0	**606**	16	29	482	0	0	**511**	6	**1268**
Total	120	0	274	0	**394**	45	1	1	56	**58**	-	1	1754	110	0	**1865**	34	91	1496	0	0	**1587**	16	**3904**
% Approach	30.5%	0%	69.5%	0%	**-**	-	1.7%	1.7%	96.6%	**-**	-	0.1%	94.0%	5.9%	0%	**-**	-	5.7%	94.3%	0%	0%	**-**	-	-
% Total	3.1%	0%	7.0%	0%	**10.1%**	-	0%	0%	1.4%	**1.5%**	-	0%	44.9%	2.8%	0%	**47.8%**	-	2.3%	38.3%	0%	0%	**40.7%**	-	-
Lights	119	0	274	0	**393**	-	1	1	56	**58**	-	1	1734	109	0	**1844**	-	90	1484	0	0	**1574**	-	3869
% Lights	99.2%	0%	100%	0%	**99.7%**	-	100%	100%	100%	**100%**	-	100%	98.9%	99.1%	0%	**98.9%**	-	98.9%	99.2%	0%	0%	**99.2%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0.1%	0%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	1	0	0	0	**1**	-	0	0	0	**0**	-	0	19	1	0	**20**	-	1	12	0	0	**13**	-	34
% Buses and Single-Unit Trucks	0.8%	0%	0%	0%	**0.3%**	-	0%	0%	0%	**0%**	-	0%	1.1%	0.9%	0%	**1.1%**	-	1.1%	0.8%	0%	0%	**0.8%**	-	0.9%
Pedestrians	-	-	-	-	-	42	-	-	-	-	0	-	-	-	-	-	32	-	-	-	-	-	16	
% Pedestrians	-	-	-	-	-	93.3%	-	-	-	-	-	-	-	-	-	-	94.1%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	6.7%	-	-	-	-	-	-	-	-	-	-	5.9%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

19. South Avenue and Boulevard - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965752, Location: 40.648909, -74.345889, Site Code: 19

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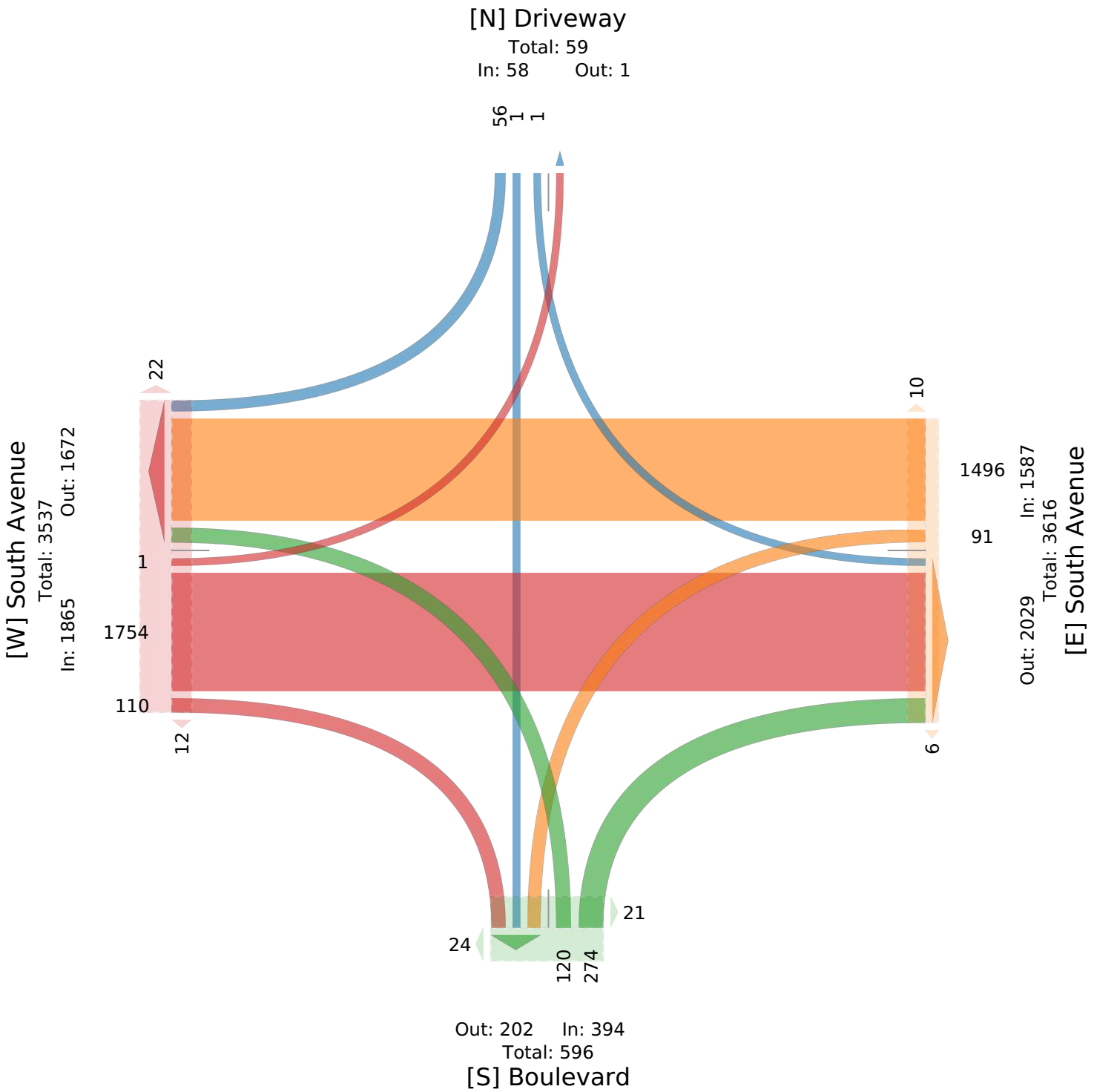


19. South Avenue and Boulevard - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12:30 PM - 1:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965752, Location: 40.648909, -74.345889, Site Code: 19

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

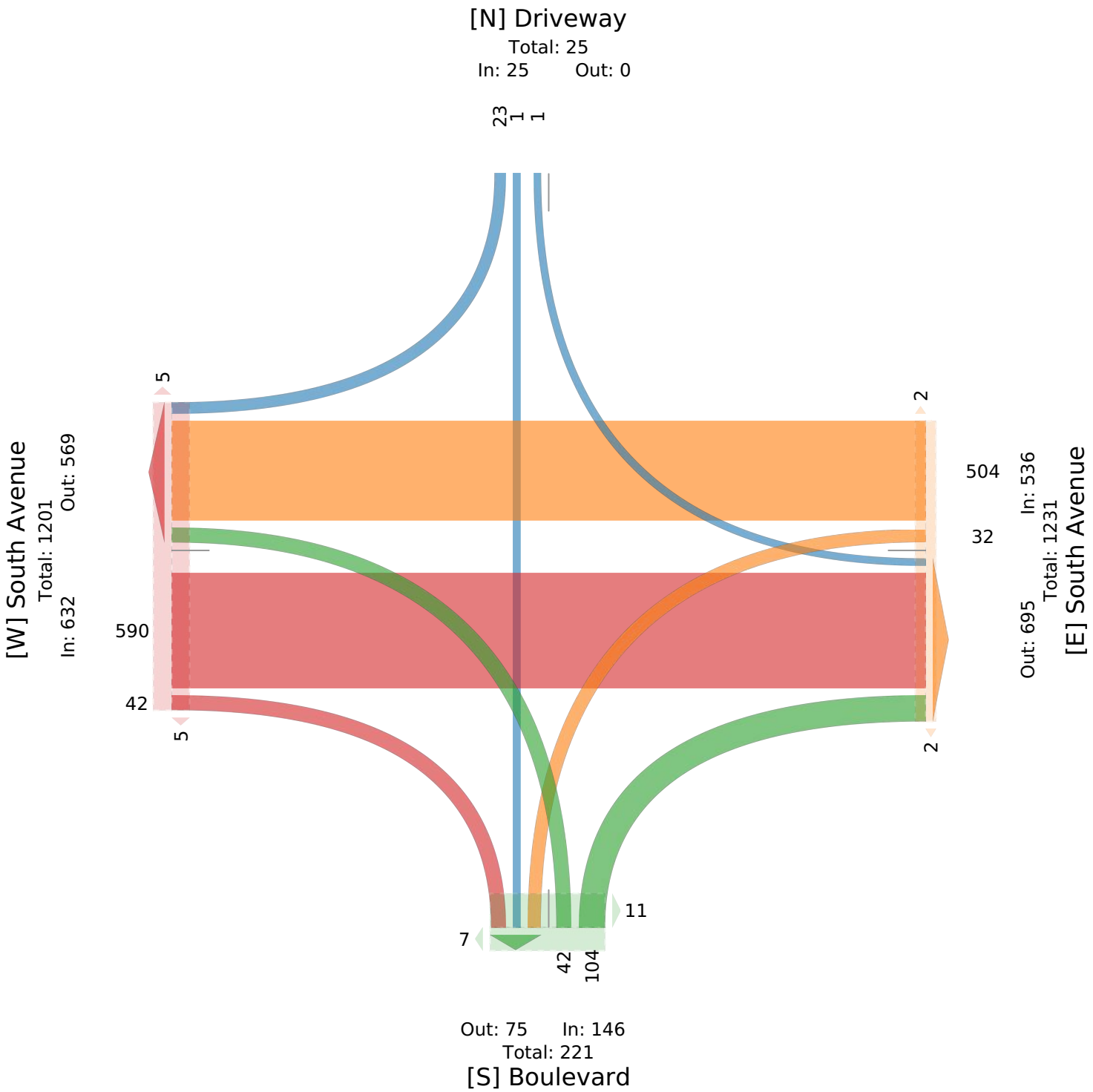
Leg Direction	Boulevard Northbound						Driveway Southbound					South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 12:30PM	13	0	22	0	**35**	9	1	1	9	**11**	-	0	142	9	0	**151**	3	9	113	0	0	**122**	1	**319**
12:45PM	4	0	29	0	**33**	5	0	0	5	**5**	-	0	156	11	0	**167**	2	8	129	0	0	**137**	1	**342**
1:00PM	17	0	31	0	**48**	1	0	0	7	**7**	-	0	138	11	0	**149**	4	8	123	0	0	**131**	2	**335**
1:15PM	8	0	22	0	**30**	3	0	0	2	**2**	-	0	154	11	0	**165**	1	7	139	0	0	**146**	0	**343**
Total	42	0	104	0	**146**	18	1	1	23	**25**	-	0	590	42	0	**632**	10	32	504	0	0	**536**	4	**1339**
% Approach	28.8%	0%	71.2%	0%	**-**	-	4.0%	4.0%	92.0%	**-**	-	0%	93.4%	6.6%	0%	**-**	-	6.0%	94.0%	0%	0%	**-**	-	-
% Total	3.1%	0%	7.8%	0%	**10.9%**	-	0.1%	0.1%	1.7%	**1.9%**	-	0%	44.1%	3.1%	0%	**47.2%**	-	2.4%	37.6%	0%	0%	**40.0%**	-	-
PHF	0.618	-	0.839	-	**0.760**	-	0.250	0.250	0.639	**0.568**	-	-	0.946	0.955	-	**0.946**	-	0.889	0.906	-	-	**0.918**	-	0.976
Lights	41	0	104	0	**145**	-	1	1	23	**25**	-	0	583	41	0	**624**	-	32	501	0	0	**533**	-	1327
% Lights	97.6%	0%	100%	0%	**99.3%**	-	100%	100%	100%	**100%**	-	0%	98.8%	97.6%	0%	**98.7%**	-	100%	99.4%	0%	0%	**99.4%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	1	0	0	0	**1**	-	0	0	0	**0**	-	0	7	1	0	**8**	-	0	3	0	0	**3**	-	12
% Buses and Single-Unit Trucks	2.4%	0%	0%	0%	**0.7%**	-	0%	0%	0%	**0%**	-	0%	1.2%	2.4%	0%	**1.3%**	-	0%	0.6%	0%	0%	**0.6%**	-	0.9%
Pedestrians	-	-	-	-	-	18	-	-	-	-	0	-	-	-	-	-	9	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	90.0%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	10.0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

19. South Avenue and Boulevard - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12:30 PM - 1:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965752, Location: 40.648909, -74.345889, Site Code: 19

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



19. South Avenue and Boulevard - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965752, Location: 40.648909, -74.345889, Site Code: 19

Provided by: Imperial Traffic & Data Collection
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Cherry Hill, NJ, 08003, US

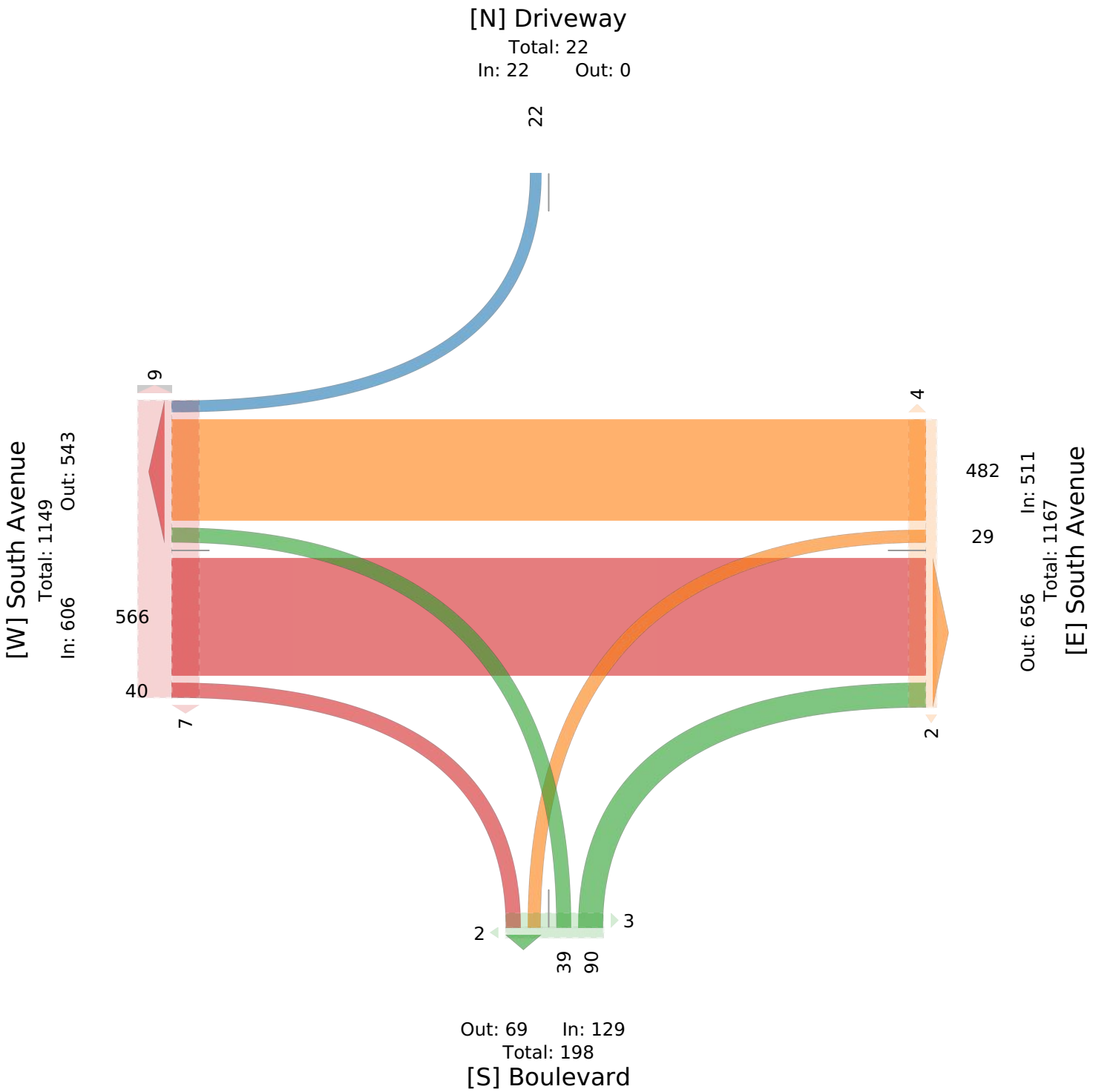
Leg / Direction	Boulevard Northbound						Driveway Southbound					South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	17	0	31	0	**48**	1	0	0	7	**7**	-	0	138	11	0	**149**	4	8	123	0	0	**131**	2	**335**
1:15PM	8	0	22	0	**30**	3	0	0	2	**2**	-	0	154	11	0	**165**	1	7	139	0	0	**146**	0	**343**
1:30PM	9	0	19	0	**28**	0	0	0	3	**3**	-	0	130	11	0	**141**	2	7	112	0	0	**119**	2	**291**
1:45PM	5	0	18	0	**23**	1	0	0	10	**10**	-	0	144	7	0	**151**	9	7	108	0	0	**115**	2	**299**
Total	39	0	90	0	**129**	5	0	0	22	**22**	-	0	566	40	0	**606**	16	29	482	0	0	**511**	6	**1268**
% Approach	30.2%	0%	69.8%	0%	**-**	-	0%	0%	100%	**-**	-	0%	93.4%	6.6%	0%	**-**	-	5.7%	94.3%	0%	0%	**-**	-	**-**
% Total	3.1%	0%	7.1%	0%	**10.2%**	-	0%	0%	1.7%	**1.7%**	-	0%	44.6%	3.2%	0%	**47.8%**	-	2.3%	38.0%	0%	0%	**40.3%**	-	**-**
PHF	0.574	-	0.726	-	**0.672**	-	-	-	0.550	**0.550**	-	-	0.919	0.909	-	**0.918**	-	0.906	0.867	-	-	**0.875**	-	0.924
Lights	38	0	90	0	**128**	-	0	0	22	**22**	-	0	559	40	0	**599**	-	29	478	0	0	**507**	-	1256
% Lights	97.4%	0%	100%	0%	**99.2%**	-	0%	0%	100%	**100%**	-	0%	98.8%	100%	0%	**98.8%**	-	100%	99.2%	0%	0%	**99.2%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0.2%	0%	0%	**0.2%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	1	0	0	0	**1**	-	0	0	0	**0**	-	0	6	0	0	**6**	-	0	4	0	0	**4**	-	11
% Buses and Single-Unit Trucks	2.6%	0%	0%	0%	**0.8%**	-	0%	0%	0%	**0%**	-	0%	1.1%	0%	0%	**1.0%**	-	0%	0.8%	0%	0%	**0.8%**	-	0.9%
Pedestrians	-	-	-	-	-	5	-	-	-	-	0	-	-	-	-	-	15	-	-	-	-	-	6	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	93.8%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	6.3%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

19. South Avenue and Boulevard - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965752, Location: 40.648909, -74.345889, Site Code: 19

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



Imperial Traffic & Data Collection
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Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648909, -74.345889

Count Name: 19. South Avenue and Boulevard
Site Code: 19
Start Date: 06/18/2022

Turning Movement Data

Start Time	South Avenue Eastbound						South Avenue Westbound						Boulevard Northbound						Driveway Southbound				
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	0	173	6	3	179	0	11	136	0	2	147	0	4	0	20	2	24	0	0	2	2	352
11:15 AM	0	0	136	9	0	145	0	9	146	0	1	155	0	10	0	26	1	36	0	0	6	6	342
11:30 AM	0	0	134	10	1	144	0	7	129	0	0	136	0	9	0	21	2	30	0	0	1	1	311
11:45 AM	0	0	146	6	1	152	0	9	131	0	1	140	0	13	0	24	2	37	0	0	4	4	333
Hourly Total	0	0	589	31	5	620	0	36	542	0	4	578	0	36	0	91	7	127	0	0	13	13	1338
12:00 PM	0	0	149	13	5	162	0	6	119	0	2	125	0	12	0	18	7	30	0	0	3	3	320
12:15 PM	0	1	152	6	3	159	0	3	111	0	2	114	0	16	0	24	12	40	0	0	4	4	317
12:30 PM	0	0	142	9	3	151	0	9	113	0	1	122	0	13	0	22	9	35	1	1	9	11	319
12:45 PM	0	0	156	11	2	167	0	8	129	0	1	137	0	4	0	29	5	33	0	0	5	5	342
Hourly Total	0	1	599	39	13	639	0	26	472	0	6	498	0	45	0	93	33	138	1	1	21	23	1298
1:00 PM	0	0	138	11	4	149	0	8	123	0	2	131	0	17	0	31	1	48	0	0	7	7	335
1:15 PM	0	0	154	11	1	165	0	7	139	0	0	146	0	8	0	22	3	30	0	0	2	2	343
1:30 PM	0	0	130	11	2	141	0	7	112	0	2	119	0	9	0	19	0	28	0	0	3	3	291
1:45 PM	0	0	144	7	9	151	0	7	108	0	2	115	0	5	0	18	1	23	0	0	10	10	299
Hourly Total	0	0	566	40	16	606	0	29	482	0	6	511	0	39	0	90	5	129	0	0	22	22	1268
Grand Total	0	1	1754	110	34	1865	0	91	1496	0	16	1587	0	120	0	274	45	394	1	1	56	58	3904
Approach %	0.0	0.1	94.0	5.9	-	-	0.0	5.7	94.3	0.0	-	-	0.0	30.5	0.0	69.5	-	-	1.7	1.7	96.6	-	-
Total %	0.0	0.0	44.9	2.8	-	47.8	0.0	2.3	38.3	0.0	-	40.7	0.0	3.1	0.0	7.0	-	10.1	0.0	0.0	1.4	1.5	-
Lights	0	1	1734	109	-	1844	0	90	1484	0	-	1574	0	119	0	274	-	393	1	1	56	58	3869
% Lights	-	100.0	98.9	99.1	-	98.9	-	98.9	99.2	-	-	99.2	-	99.2	-	100.0	-	99.7	100.0	100.0	100.0	100.0	99.1
Mediums	0	0	19	1	-	20	0	1	12	0	-	13	0	1	0	0	-	1	0	0	0	0	34
% Mediums	-	0.0	1.1	0.9	-	1.1	-	1.1	0.8	-	-	0.8	-	0.8	-	0.0	-	0.3	0.0	0.0	0.0	0.0	0.9
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	1
% Articulated Trucks	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	-	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	-
% Bicycles on Crosswalk	-	-	-	-	5.9	-	-	-	-	-	0.0	-	-	-	-	-	6.7	-	-	-	-	-	-
Pedestrians	-	-	-	-	32	-	-	-	-	-	16	-	-	-	-	-	42	-	-	-	-	-	-
% Pedestrians	-	-	-	-	94.1	-	-	-	-	-	100.0	-	-	-	-	-	93.3	-	-	-	-	-	-

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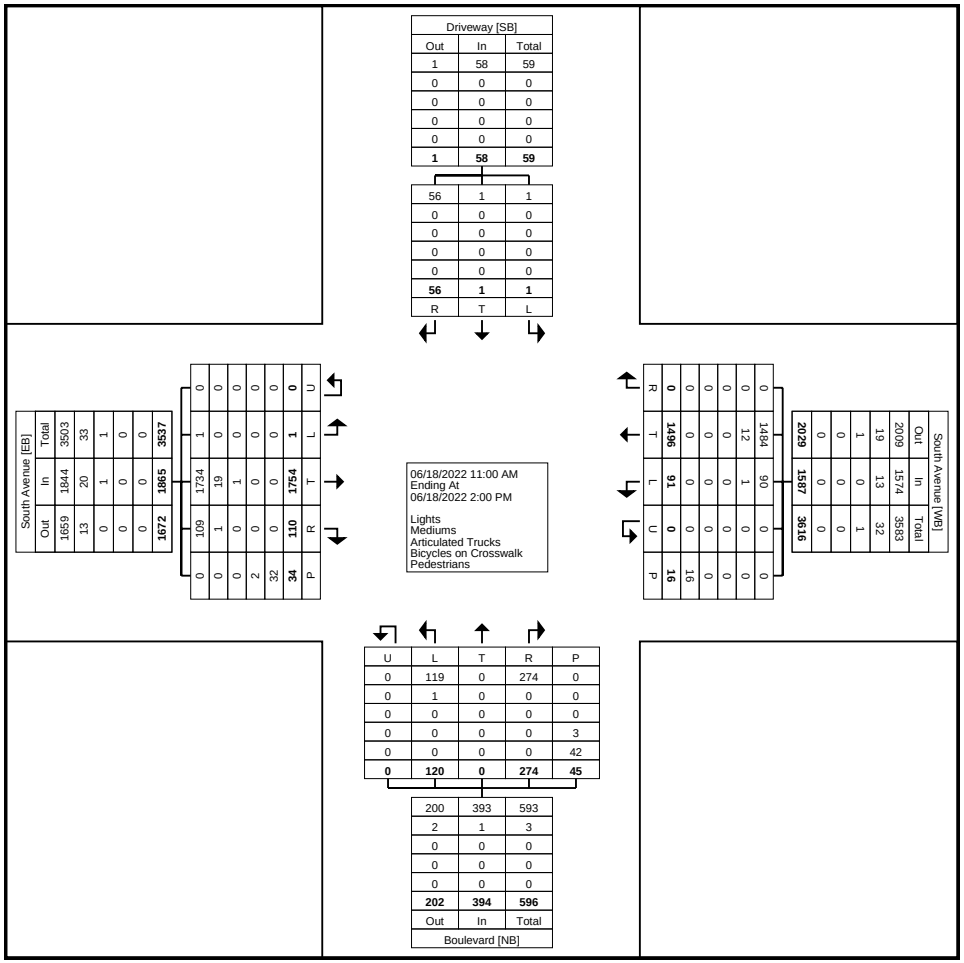
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648909, -74.345889

Count Name: 19. South Avenue and Boulevard
Site Code: 19
Start Date: 06/18/2022



Turning Movement Data Plot

Imperial Traffic & Data Collection
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Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648909, -74.345889

Count Name: 19. South Avenue and Boulevard
Site Code: 19
Start Date: 06/18/2022

Turning Movement Peak Hour Data (12:30 PM)

Start Time	South Avenue Eastbound						South Avenue Westbound						Boulevard Northbound						Driveway Southbound				
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Int. Total
12:30 PM	0	0	142	9	3	151	0	9	113	0	1	122	0	13	0	22	9	35	1	1	9	11	319
12:45 PM	0	0	156	11	2	167	0	8	129	0	1	137	0	4	0	29	5	33	0	0	5	5	342
1:00 PM	0	0	138	11	4	149	0	8	123	0	2	131	0	17	0	31	1	48	0	0	7	7	335
1:15 PM	0	0	154	11	1	165	0	7	139	0	0	146	0	8	0	22	3	30	0	0	2	2	343
Total	0	0	590	42	10	632	0	32	504	0	4	536	0	42	0	104	18	146	1	1	23	25	1339
Approach %	0.0	0.0	93.4	6.6	-	-	0.0	6.0	94.0	0.0	-	-	0.0	28.8	0.0	71.2	-	-	4.0	4.0	92.0	-	-
Total %	0.0	0.0	44.1	3.1	-	47.2	0.0	2.4	37.6	0.0	-	40.0	0.0	3.1	0.0	7.8	-	10.9	0.1	0.1	1.7	1.9	-
PHF	0.000	0.000	0.946	0.955	-	0.946	0.000	0.889	0.906	0.000	-	0.918	0.000	0.618	0.000	0.839	-	0.760	0.250	0.250	0.639	0.568	0.976
Lights	0	0	583	41	-	624	0	32	501	0	-	533	0	41	0	104	-	145	1	1	23	25	1327
% Lights	-	-	98.8	97.6	-	98.7	-	100.0	99.4	-	-	99.4	-	97.6	-	100.0	-	99.3	100.0	100.0	100.0	100.0	99.1
Mediums	0	0	7	1	-	8	0	0	3	0	-	3	0	1	0	0	-	1	0	0	0	0	12
% Mediums	-	-	1.2	2.4	-	1.3	-	0.0	0.6	-	-	0.6	-	2.4	-	0.0	-	0.7	0.0	0.0	0.0	0.0	0.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0
% Articulated 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	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-
% Bicycles on Crosswalk	-	-	-	-	10.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	-	-	9	-	-	-	-	-	4	-	-	-	-	-	18	-	-	-	-	-	-
% Pedestrians	-	-	-	-	90.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-

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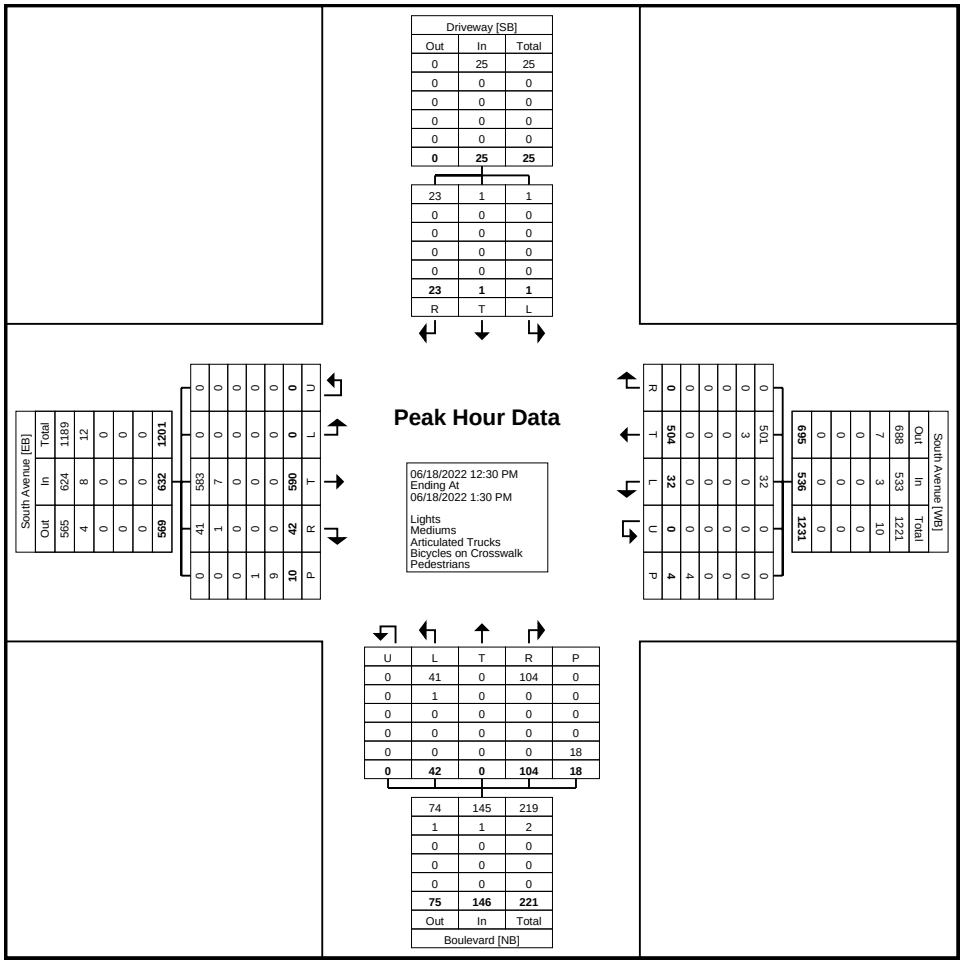
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648909, -74.345889

Count Name: 19. South Avenue and Boulevard
Site Code: 19
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (12:30 PM)

20. South Avenue and east of Boulevard - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965751, Location: 40.649075, -74.344837, Site Code: 20

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

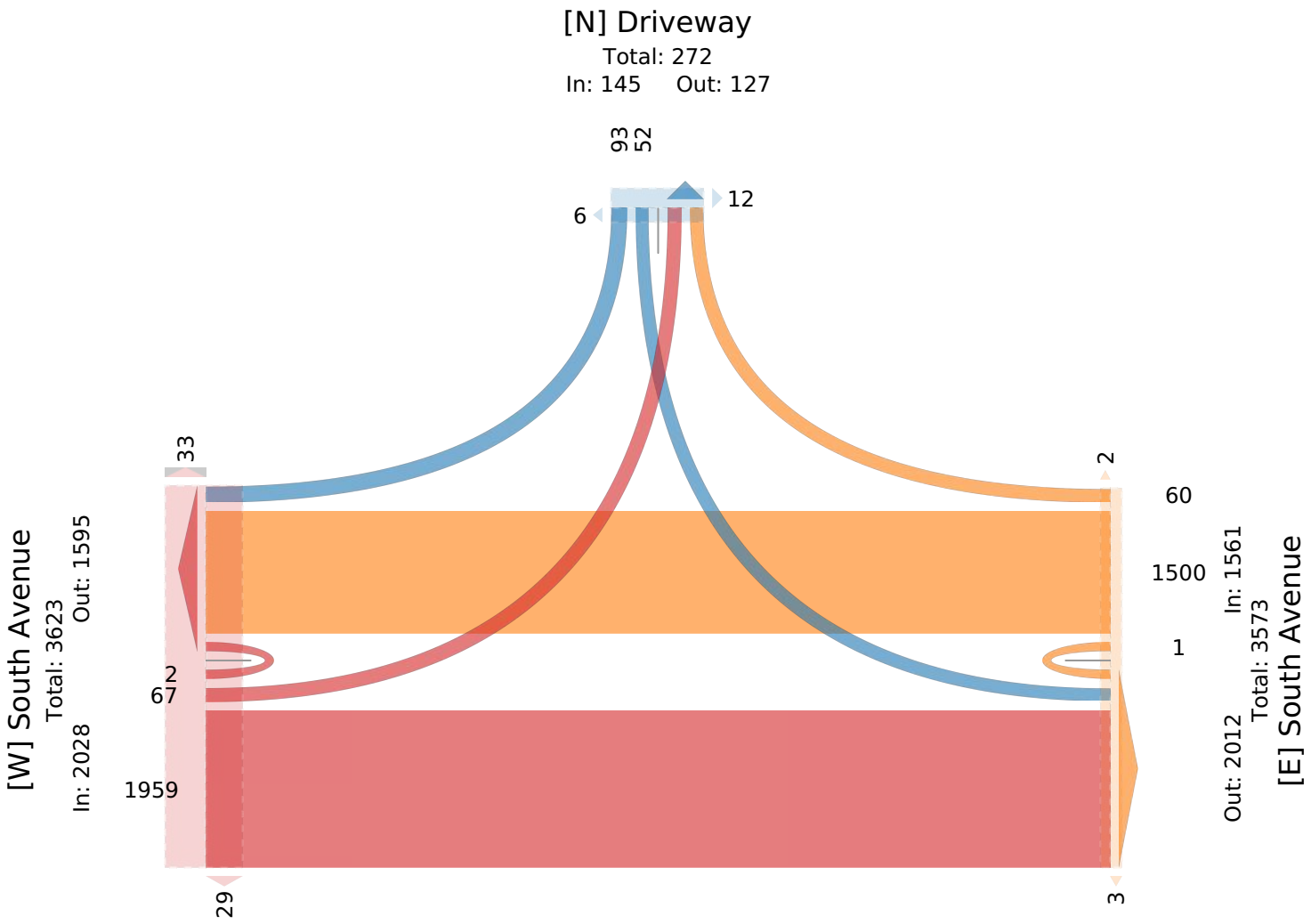
Leg Direction	Driveway Southbound					South Avenue Eastbound					South Avenue Westbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	3	9	0	**12**	2	5	188	0	**193**	1	139	4	0	**143**	0	**348**
11:15AM	3	12	0	**15**	2	7	155	0	**162**	5	142	3	0	**145**	0	**322**
11:30AM	6	9	0	**15**	0	6	152	1	**159**	5	129	3	0	**132**	1	**306**
11:45AM	6	7	0	**13**	1	2	160	0	**162**	1	132	6	0	**138**	0	**313**
Hourly Total	18	37	0	**55**	5	20	655	1	**676**	12	542	16	0	**558**	1	**1289**
12:00PM	4	10	0	**14**	1	5	162	0	**167**	3	115	6	0	**121**	1	**302**
12:15PM	6	10	0	**16**	2	8	171	0	**179**	4	104	9	0	**113**	0	**308**
12:30PM	3	9	0	**12**	1	10	155	0	**165**	11	114	6	0	**120**	0	**297**
12:45PM	6	8	0	**14**	3	3	180	0	**183**	7	133	6	1	**140**	1	**337**
Hourly Total	19	37	0	**56**	7	26	668	0	**694**	25	466	27	1	**494**	2	**1244**
1:00PM	2	4	0	**6**	0	3	162	0	**165**	5	123	5	0	**128**	0	**299**
1:15PM	4	7	0	**11**	1	8	170	0	**178**	14	142	7	0	**149**	0	**338**
1:30PM	7	4	0	**11**	1	3	150	1	**154**	3	114	4	0	**118**	1	**283**
1:45PM	2	4	0	**6**	4	7	154	0	**161**	3	113	1	0	**114**	1	**281**
Hourly Total	15	19	0	**34**	6	21	636	1	**658**	25	492	17	0	**509**	2	**1201**
Total	52	93	0	**145**	18	67	1959	2	**2028**	62	1500	60	1	**1561**	5	**3734**
% Approach	35.9%	64.1%	0%	**-**	-	3.3%	96.6%	0.1%	**-**	-	96.1%	3.8%	0.1%	**-**	-	**-**
% Total	1.4%	2.5%	0%	**3.9%**	-	1.8%	52.5%	0.1%	**54.3%**	-	40.2%	1.6%	0%	**41.8%**	-	**-**
Lights	52	93	0	**145**	-	66	1941	2	**2009**	-	1485	60	1	**1546**	-	3700
% Lights	100%	100%	0%	**100%**	-	98.5%	99.1%	100%	**99.1%**	-	99.0%	100%	100%	**99.0%**	-	99.1%
Articulated Trucks	0	0	0	**0**	-	0	1	0	**1**	-	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0.1%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	**0**	-	1	17	0	**18**	-	15	0	0	**15**	-	33
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	1.5%	0.9%	0%	**0.9%**	-	1.0%	0%	0%	**1.0%**	-	0.9%
Pedestrians	-	-	-	-	17	-	-	-	-	62	-	-	-	-	5	
% Pedestrians	-	-	-	-	94.4%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	5.6%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

20. South Avenue and east of Boulevard - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965751, Location: 40.649075, -74.344837, Site Code: 20

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



20. South Avenue and east of Boulevard - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965751, Location: 40.649075, -74.344837, Site Code: 20

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

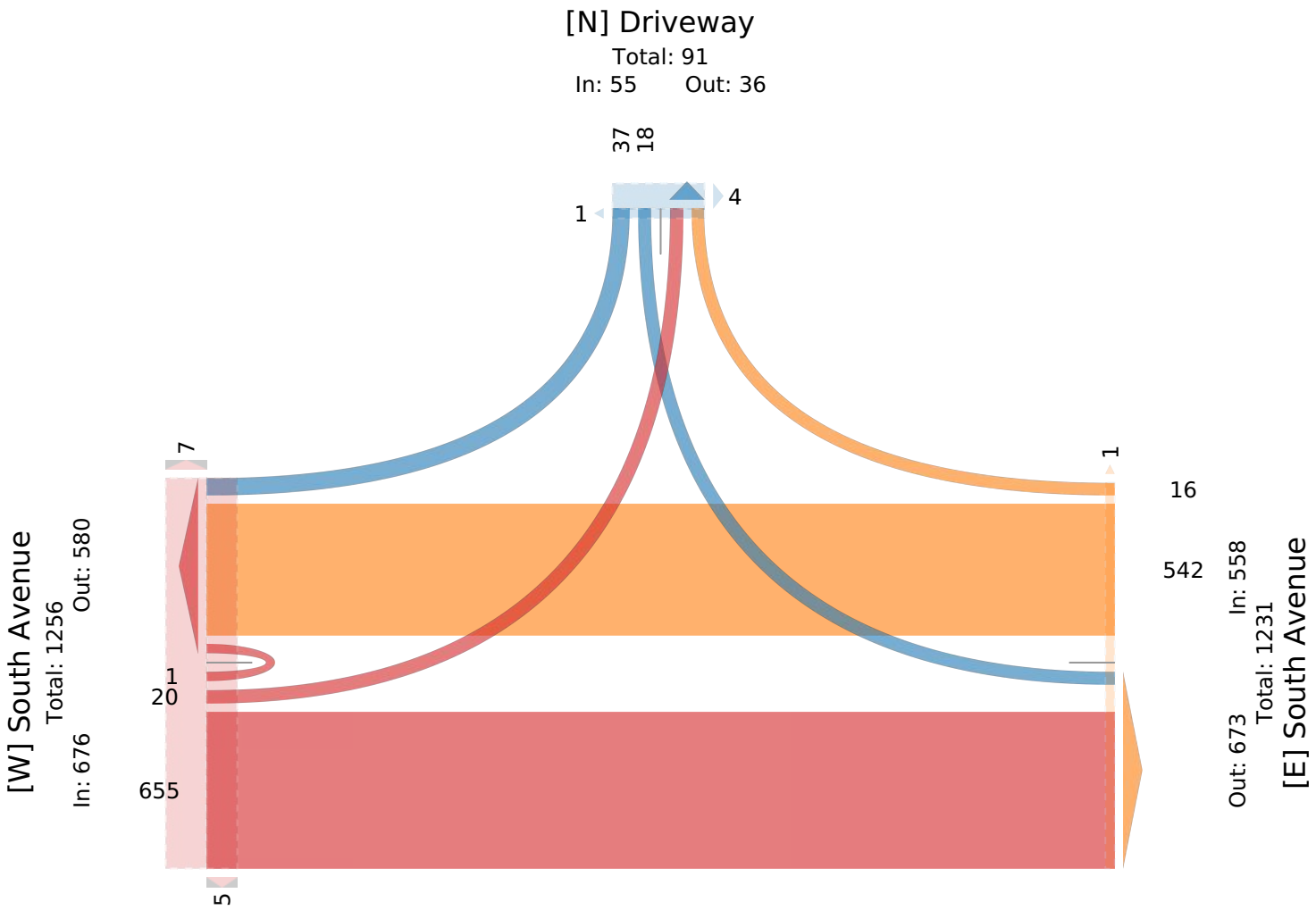
Leg Direction	Driveway Southbound					South Avenue Eastbound					South Avenue Westbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	3	9	0	**12**	2	5	188	0	**193**	1	139	4	0	**143**	0	**348**
11:15AM	3	12	0	**15**	2	7	155	0	**162**	5	142	3	0	**145**	0	**322**
11:30AM	6	9	0	**15**	0	6	152	1	**159**	5	129	3	0	**132**	1	**306**
11:45AM	6	7	0	**13**	1	2	160	0	**162**	1	132	6	0	**138**	0	**313**
Total	18	37	0	**55**	5	20	655	1	**676**	12	542	16	0	**558**	1	**1289**
% Approach	32.7%	67.3%	0%	**-**	-	3.0%	96.9%	0.1%	**-**	-	97.1%	2.9%	0%	**-**	-	**-**
% Total	1.4%	2.9%	0%	**4.3%**	-	1.6%	50.8%	0.1%	**52.4%**	-	42.0%	1.2%	0%	**43.3%**	-	**-**
PHF	0.750	0.771	-	**0.917**	-	0.714	0.871	0.250	**0.876**	-	0.954	0.667	-	**0.962**	-	0.926
Lights	18	37	0	**55**	-	20	649	1	**670**	-	536	16	0	**552**	-	1277
% Lights	100%	100%	0%	**100%**	-	100%	99.1%	100%	**99.1%**	-	98.9%	100%	0%	**98.9%**	-	99.1%
Articulated Trucks	0	0	0	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	**0**	-	0	6	0	**6**	-	6	0	0	**6**	-	12
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	0%	0.9%	0%	**0.9%**	-	1.1%	0%	0%	**1.1%**	-	0.9%
Pedestrians	-	-	-	-	4	-	-	-	-	12	-	-	-	-	1	
% Pedestrians	-	-	-	-	80.0%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	20.0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

20. South Avenue and east of Boulevard - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11 AM - 12 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965751, Location: 40.649075, -74.344837, Site Code: 20

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



20. South Avenue and east of Boulevard - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965751, Location: 40.649075, -74.344837, Site Code: 20

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

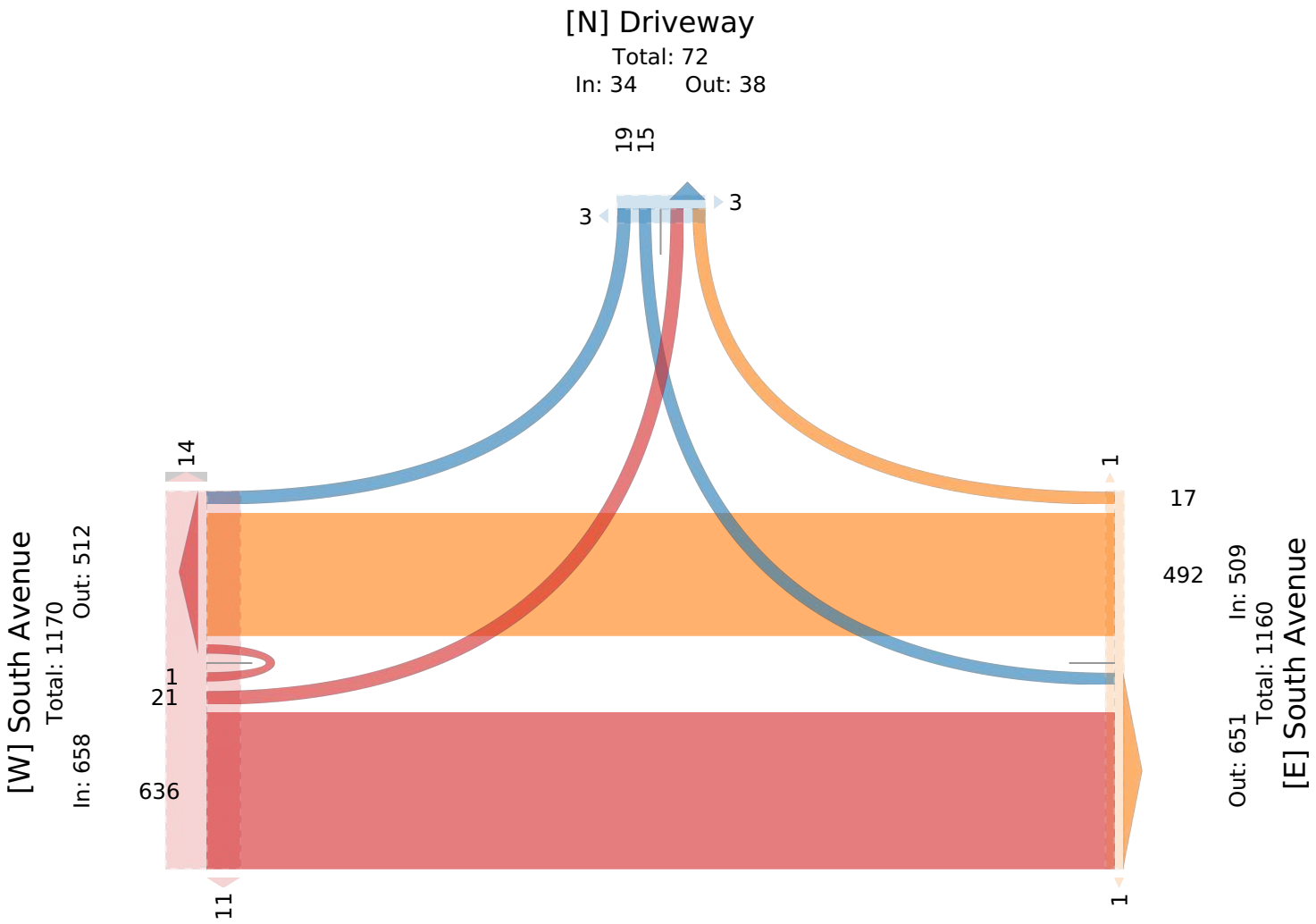
Leg Direction	Driveway Southbound					South Avenue Eastbound					South Avenue Westbound					
Time	L	R	U	**App**	Ped*	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	2	4	0	**6**	0	3	162	0	**165**	5	123	5	0	**128**	0	**299**
1:15PM	4	7	0	**11**	1	8	170	0	**178**	14	142	7	0	**149**	0	**338**
1:30PM	7	4	0	**11**	1	3	150	1	**154**	3	114	4	0	**118**	1	**283**
1:45PM	2	4	0	**6**	4	7	154	0	**161**	3	113	1	0	**114**	1	**281**
Total	15	19	0	**34**	6	21	636	1	**658**	25	492	17	0	**509**	2	**1201**
% Approach	44.1%	55.9%	0%	**-**	-	3.2%	96.7%	0.2%	**-**	-	96.7%	3.3%	0%	**-**	-	**-**
% Total	1.2%	1.6%	0%	**2.8%**	-	1.7%	53.0%	0.1%	**54.8%**	-	41.0%	1.4%	0%	**42.4%**	-	**-**
PHF	0.536	0.679	-	**0.773**	-	0.656	0.935	0.250	**0.924**	-	0.866	0.607	-	**0.854**	-	0.888
Lights	15	19	0	**34**	-	20	629	1	**650**	-	487	17	0	**504**	-	1188
% Lights	100%	100%	0%	**100%**	-	95.2%	98.9%	100%	**98.8%**	-	99.0%	100%	0%	**99.0%**	-	98.9%
Articulated Trucks	0	0	0	**0**	-	0	1	0	**1**	-	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	**0%**	-	0%	0.2%	0%	**0.2%**	-	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	**0**	-	1	6	0	**7**	-	5	0	0	**5**	-	12
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	4.8%	0.9%	0%	**1.1%**	-	1.0%	0%	0%	**1.0%**	-	1.0%
Pedestrians	-	-	-	-	6	-	-	-	-	25	-	-	-	-	2	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

20. South Avenue and east of Boulevard - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965751, Location: 40.649075, -74.344837, Site Code: 20

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.649075, -74.344837

Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Count Name: 20. South Avenue and east of Boulevard
Site Code: 20
Start Date: 06/18/2022

Turning Movement Data

Start Time	South Avenue Eastbound					South Avenue Westbound					Driveway Southbound					Int. Total
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
11:00 AM	0	5	188	1	193	0	139	4	0	143	0	3	9	2	12	348
11:15 AM	0	7	155	5	162	0	142	3	0	145	0	3	12	2	15	322
11:30 AM	1	6	152	5	159	0	129	3	1	132	0	6	9	0	15	306
11:45 AM	0	2	160	1	162	0	132	6	0	138	0	6	7	1	13	313
Hourly Total	1	20	655	12	676	0	542	16	1	558	0	18	37	5	55	1289
12:00 PM	0	5	162	3	167	0	115	6	1	121	0	4	10	1	14	302
12:15 PM	0	8	171	4	179	0	104	9	0	113	0	6	10	2	16	308
12:30 PM	0	10	155	11	165	0	114	6	0	120	0	3	9	1	12	297
12:45 PM	0	3	180	7	183	1	133	6	1	140	0	6	8	3	14	337
Hourly Total	0	26	668	25	694	1	466	27	2	494	0	19	37	7	56	1244
1:00 PM	0	3	162	5	165	0	123	5	0	128	0	2	4	0	6	299
1:15 PM	0	8	170	14	178	0	142	7	0	149	0	4	7	1	11	338
1:30 PM	1	3	150	3	154	0	114	4	1	118	0	7	4	1	11	283
1:45 PM	0	7	154	3	161	0	113	1	1	114	0	2	4	4	6	281
Hourly Total	1	21	636	25	658	0	492	17	2	509	0	15	19	6	34	1201
Grand Total	2	67	1959	62	2028	1	1500	60	5	1561	0	52	93	18	145	3734
Approach %	0.1	3.3	96.6	-	-	0.1	96.1	3.8	-	-	0.0	35.9	64.1	-	-	-
Total %	0.1	1.8	52.5	-	54.3	0.0	40.2	1.6	-	41.8	0.0	1.4	2.5	-	3.9	-
Lights	2	66	1941	-	2009	1	1485	60	-	1546	0	52	93	-	145	3700
% Lights	100.0	98.5	99.1	-	99.1	100.0	99.0	100.0	-	99.0	-	100.0	100.0	-	100.0	99.1
Mediums	0	1	17	-	18	0	15	0	-	15	0	0	0	-	0	33
% Mediums	0.0	1.5	0.9	-	0.9	0.0	1.0	0.0	-	1.0	-	0.0	0.0	-	0.0	0.9
Articulated Trucks	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.1	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	5.6	-	-
Pedestrians	-	-	-	62	-	-	-	-	5	-	-	-	-	17	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	94.4	-	-

Imperial Traffic & Data Collection
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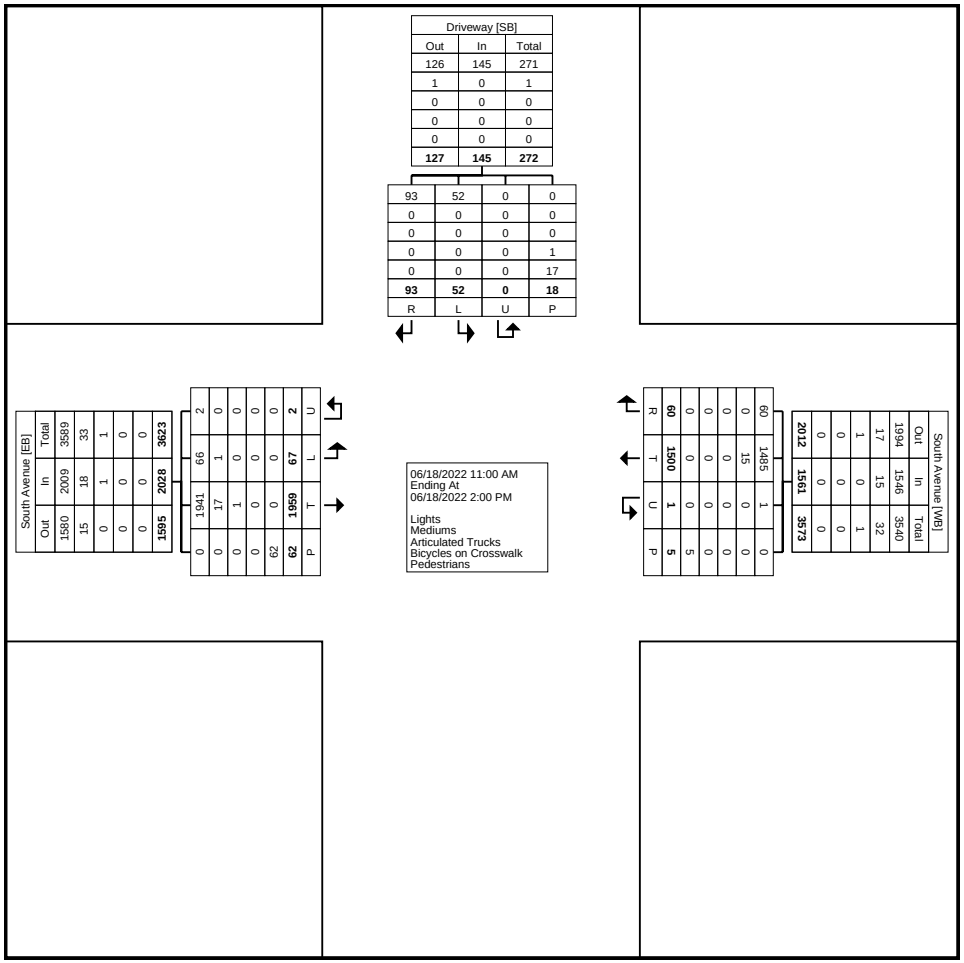
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.649075, -74.344837

Count Name: 20. South Avenue and east of Boulevard
Site Code: 20
Start Date: 06/18/2022



Turning Movement Data Plot

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.649075, -74.344837

Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Count Name: 20. South Avenue and east of Boulevard
Site Code: 20
Start Date: 06/18/2022

Turning Movement Peak Hour Data (11:00 AM)

Start Time	South Avenue Eastbound					South Avenue Westbound					Driveway Southbound					
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
11:00 AM	0	5	188	1	193	0	139	4	0	143	0	3	9	2	12	348
11:15 AM	0	7	155	5	162	0	142	3	0	145	0	3	12	2	15	322
11:30 AM	1	6	152	5	159	0	129	3	1	132	0	6	9	0	15	306
11:45 AM	0	2	160	1	162	0	132	6	0	138	0	6	7	1	13	313
Total	1	20	655	12	676	0	542	16	1	558	0	18	37	5	55	1289
Approach %	0.1	3.0	96.9	-	-	0.0	97.1	2.9	-	-	0.0	32.7	67.3	-	-	-
Total %	0.1	1.6	50.8	-	52.4	0.0	42.0	1.2	-	43.3	0.0	1.4	2.9	-	4.3	-
PHF	0.250	0.714	0.871	-	0.876	0.000	0.954	0.667	-	0.962	0.000	0.750	0.771	-	0.917	0.926
Lights	1	20	649	-	670	0	536	16	-	552	0	18	37	-	55	1277
% Lights	100.0	100.0	99.1	-	99.1	-	98.9	100.0	-	98.9	-	100.0	100.0	-	100.0	99.1
Mediums	0	0	6	-	6	0	6	0	-	6	0	0	0	-	0	12
% Mediums	0.0	0.0	0.9	-	0.9	-	1.1	0.0	-	1.1	-	0.0	0.0	-	0.0	0.9
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	20.0	-	-
Pedestrians	-	-	-	12	-	-	-	-	1	-	-	-	-	4	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	80.0	-	-

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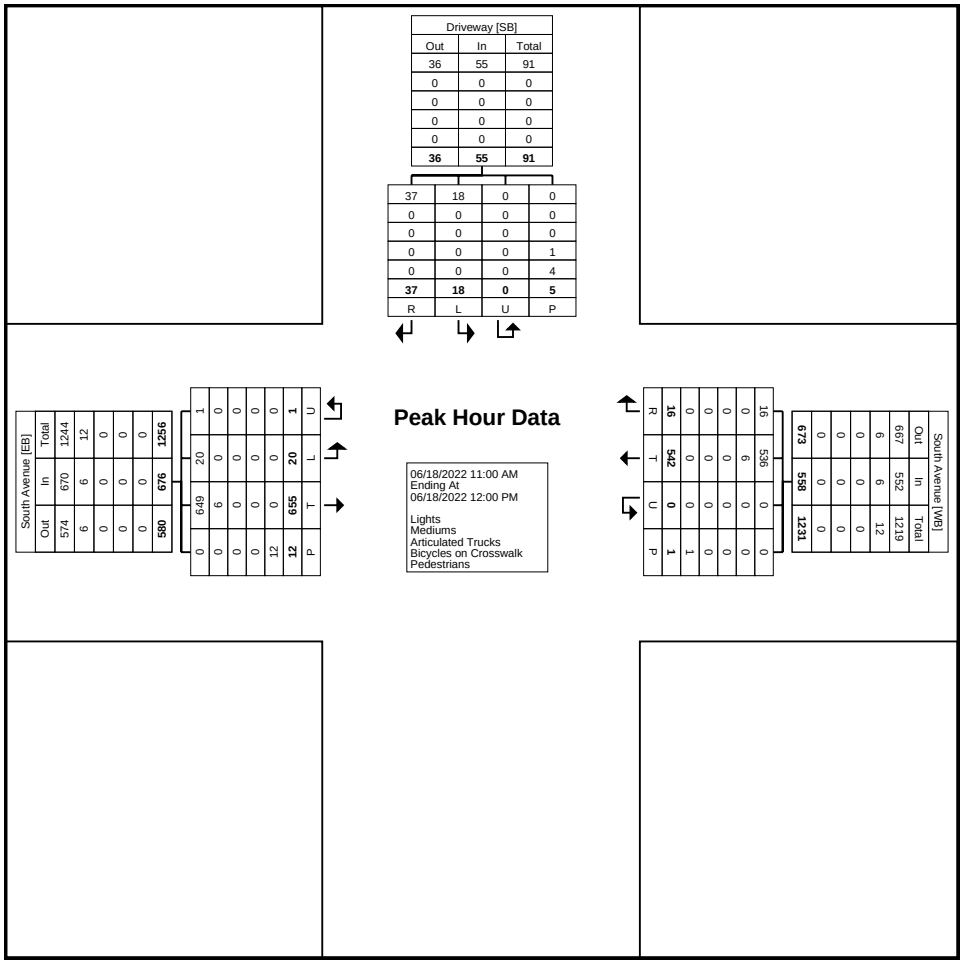
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.649075, -74.344837

Count Name: 20. South Avenue and east of Boulevard
Site Code: 20
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (11:00 AM)

22. North Avenue and Parking Lot Egress Only - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965806, Location: 40.650255, -74.347411, Site Code: 22

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

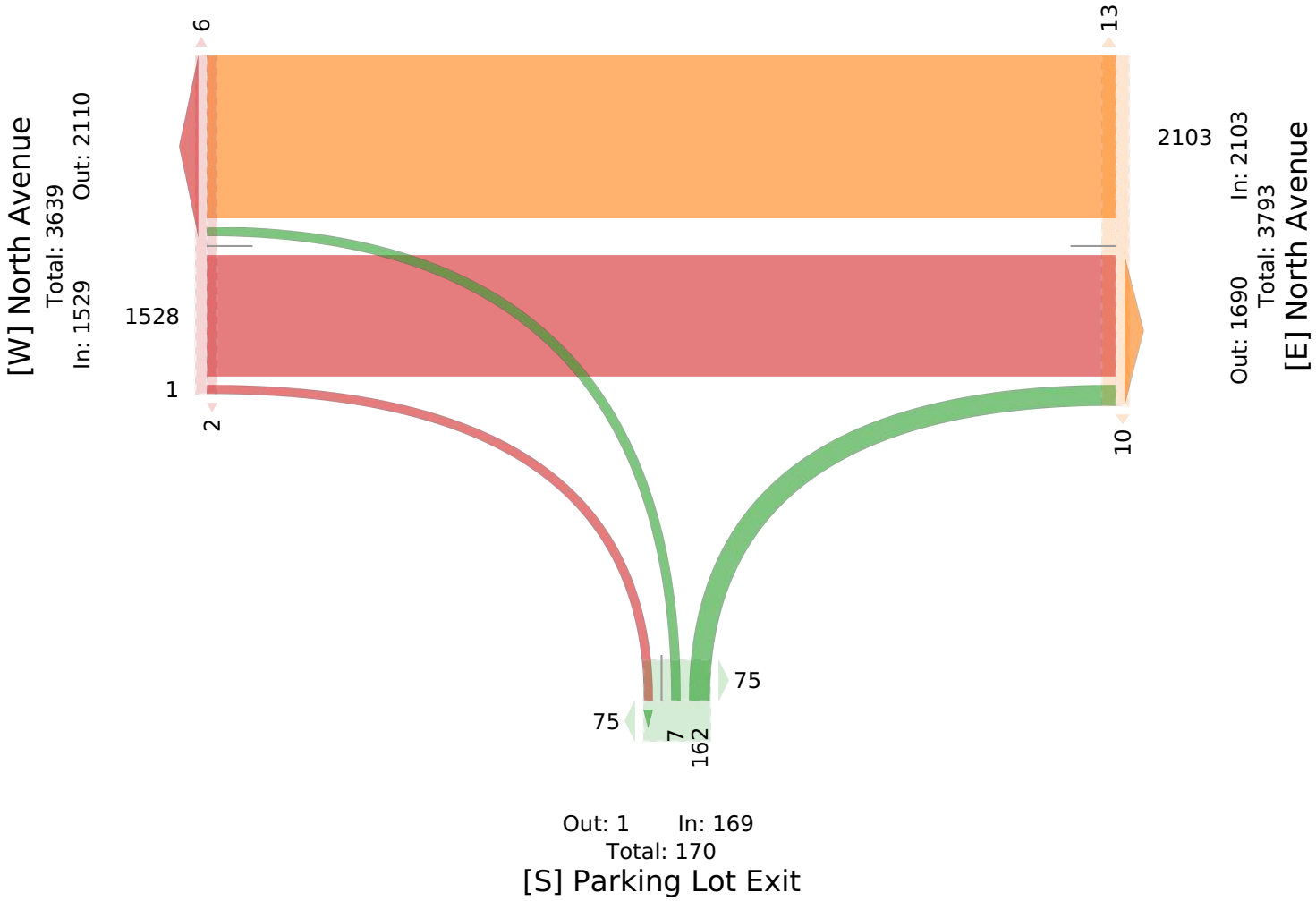
Leg Direction	Parking Lot Exit Northbound					North Avenue Eastbound					North Avenue Westbound					
Time	L	R	U	**App**	Ped*	T	R	U	**App**	Ped*	L	T	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	0	12	0	**12**	11	123	1	0	**124**	0	0	186	0	**186**	1	**322**
11:15AM	0	10	0	**10**	17	137	0	0	**137**	0	0	165	0	**165**	1	**312**
11:30AM	0	14	0	**14**	14	116	0	0	**116**	0	0	175	0	**175**	3	**305**
11:45AM	0	19	0	**19**	8	151	0	0	**151**	0	0	180	0	**180**	2	**350**
Hourly Total	0	55	0	**55**	50	527	1	0	**528**	0	0	706	0	**706**	7	**1289**
12:00PM	0	16	0	**16**	17	146	0	0	**146**	2	0	174	0	**174**	3	**336**
12:15PM	0	22	0	**22**	14	129	0	0	**129**	4	0	178	0	**178**	5	**329**
12:30PM	2	10	0	**12**	21	122	0	0	**122**	1	0	192	0	**192**	0	**326**
12:45PM	0	10	0	**10**	13	144	0	0	**144**	0	0	178	0	**178**	1	**332**
Hourly Total	2	58	0	**60**	65	541	0	0	**541**	7	0	722	0	**722**	9	**1323**
1:00PM	4	9	0	**13**	12	113	0	0	**113**	1	0	174	0	**174**	3	**300**
1:15PM	0	21	0	**21**	10	130	0	0	**130**	0	0	152	0	**152**	0	**303**
1:30PM	1	10	0	**11**	10	102	0	0	**102**	0	0	190	0	**190**	1	**303**
1:45PM	0	9	0	**9**	3	115	0	0	**115**	0	0	159	0	**159**	3	**283**
Hourly Total	5	49	0	**54**	35	460	0	0	**460**	1	0	675	0	**675**	7	**1189**
Total	7	162	0	**169**	150	1528	1	0	**1529**	8	0	2103	0	**2103**	23	**3801**
% Approach	4.1%	95.9%	0%	**-**	-	99.9%	0.1%	0%	**-**	-	0%	100%	0%	**-**	-	**-**
% Total	0.2%	4.3%	0%	**4.4%**	-	40.2%	0%	0%	**40.2%**	-	0%	55.3%	0%	**55.3%**	-	**-**
Lights	7	162	0	**169**	-	1513	1	0	**1514**	-	0	2066	0	**2066**	-	3749
% Lights	100%	100%	0%	**100%**	-	99.0%	100%	0%	**99.0%**	-	0%	98.2%	0%	**98.2%**	-	98.6%
Articulated Trucks	0	0	0	**0**	-	4	0	0	**4**	-	0	2	0	**2**	-	6
% Articulated Trucks	0%	0%	0%	**0%**	-	0.3%	0%	0%	**0.3%**	-	0%	0.1%	0%	**0.1%**	-	0.2%
Buses and Single-Unit Trucks	0	0	0	**0**	-	11	0	0	**11**	-	0	35	0	**35**	-	46
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	0.7%	0%	0%	**0.7%**	-	0%	1.7%	0%	**1.7%**	-	1.2%
Pedestrians	-	-	-	-	147	-	-	-	-	8	-	-	-	-	23	
% Pedestrians	-	-	-	-	98.0%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	2.0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

22. North Avenue and Parking Lot Egress Only - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965806, Location: 40.650255, -74.347411, Site Code: 22

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



22. North Avenue and Parking Lot Egress Only - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965806, Location: 40.650255, -74.347411, Site Code: 22

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

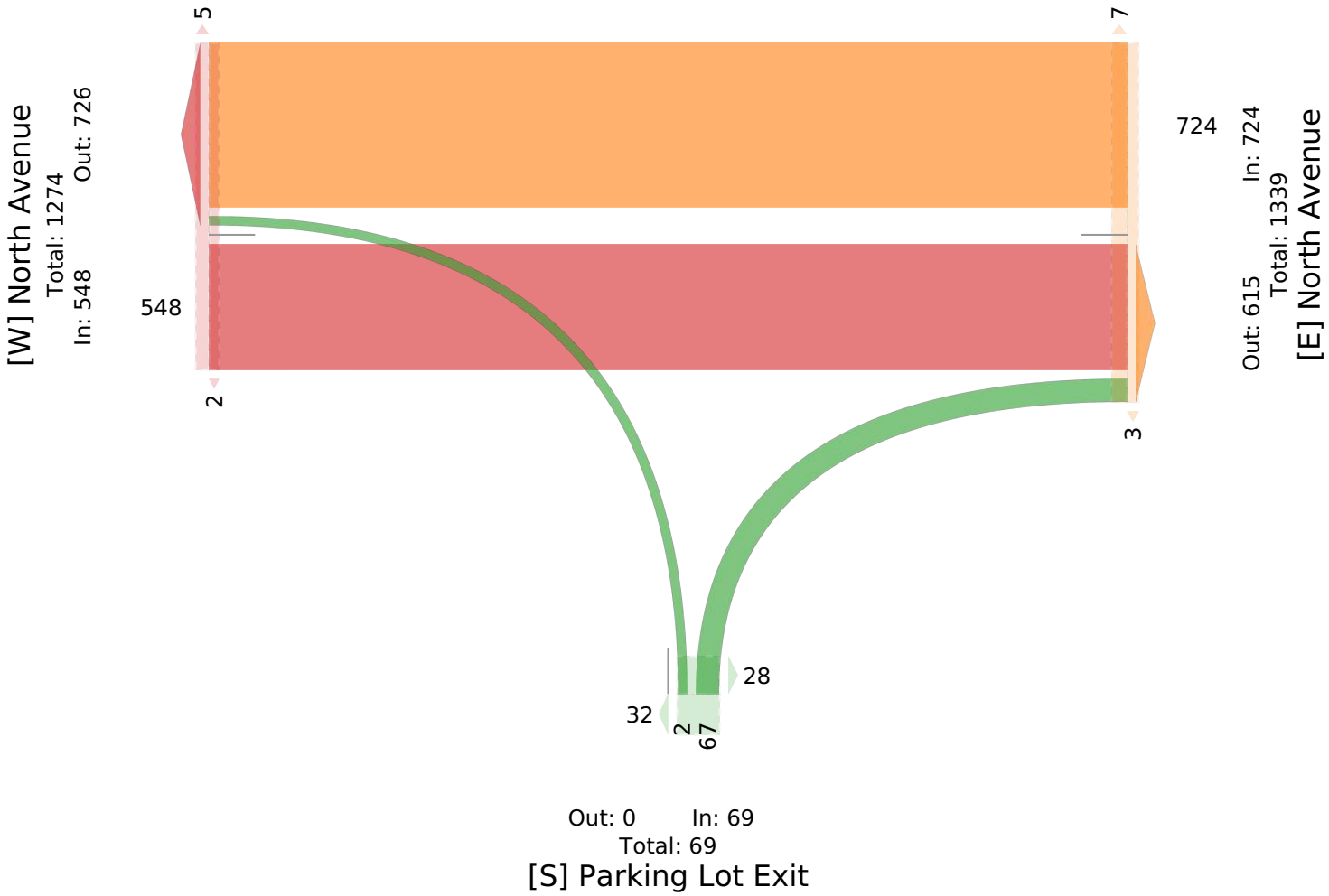
Leg Direction	Parking Lot Exit Northbound					North Avenue Eastbound					North Avenue Westbound					
Time	L	R	U	**App**	Ped*	T	R	U	**App**	Ped*	L	T	U	**App**	Ped*	**Int**
2022-06-18 11:45AM	0	19	0	**19**	8	151	0	0	**151**	0	0	180	0	**180**	2	**350**
12:00PM	0	16	0	**16**	17	146	0	0	**146**	2	0	174	0	**174**	3	**336**
12:15PM	0	22	0	**22**	14	129	0	0	**129**	4	0	178	0	**178**	5	**329**
12:30PM	2	10	0	**12**	21	122	0	0	**122**	1	0	192	0	**192**	0	**326**
Total	2	67	0	**69**	60	548	0	0	**548**	7	0	724	0	**724**	10	**1341**
% Approach	2.9%	97.1%	0%	**-**	-	100%	0%	0%	**-**	-	0%	100%	0%	**-**	-	**-**
% Total	0.1%	5.0%	0%	**5.1%**	-	40.9%	0%	0%	**40.9%**	-	0%	54.0%	0%	**54.0%**	-	**-**
PHF	0.250	0.761	-	**0.784**	-	0.907	-	-	**0.907**	-	-	0.943	-	**0.943**	-	0.958
Lights	2	67	0	**69**	-	541	0	0	**541**	-	0	712	0	**712**	-	1322
% Lights	100%	100%	0%	**100%**	-	98.7%	0%	0%	**98.7%**	-	0%	98.3%	0%	**98.3%**	-	98.6%
Articulated Trucks	0	0	0	**0**	-	3	0	0	**3**	-	0	1	0	**1**	-	4
% Articulated Trucks	0%	0%	0%	**0%**	-	0.5%	0%	0%	**0.5%**	-	0%	0.1%	0%	**0.1%**	-	0.3%
Buses and Single-Unit Trucks	0	0	0	**0**	-	4	0	0	**4**	-	0	11	0	**11**	-	15
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	0.7%	0%	0%	**0.7%**	-	0%	1.5%	0%	**1.5%**	-	1.1%
Pedestrians	-	-	-	-	60	-	-	-	-	7	-	-	-	-	10	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

22. North Avenue and Parking Lot Egress Only - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965806, Location: 40.650255, -74.347411, Site Code: 22

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



22. North Avenue and Parking Lot Egress Only - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965806, Location: 40.650255, -74.347411, Site Code: 22

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

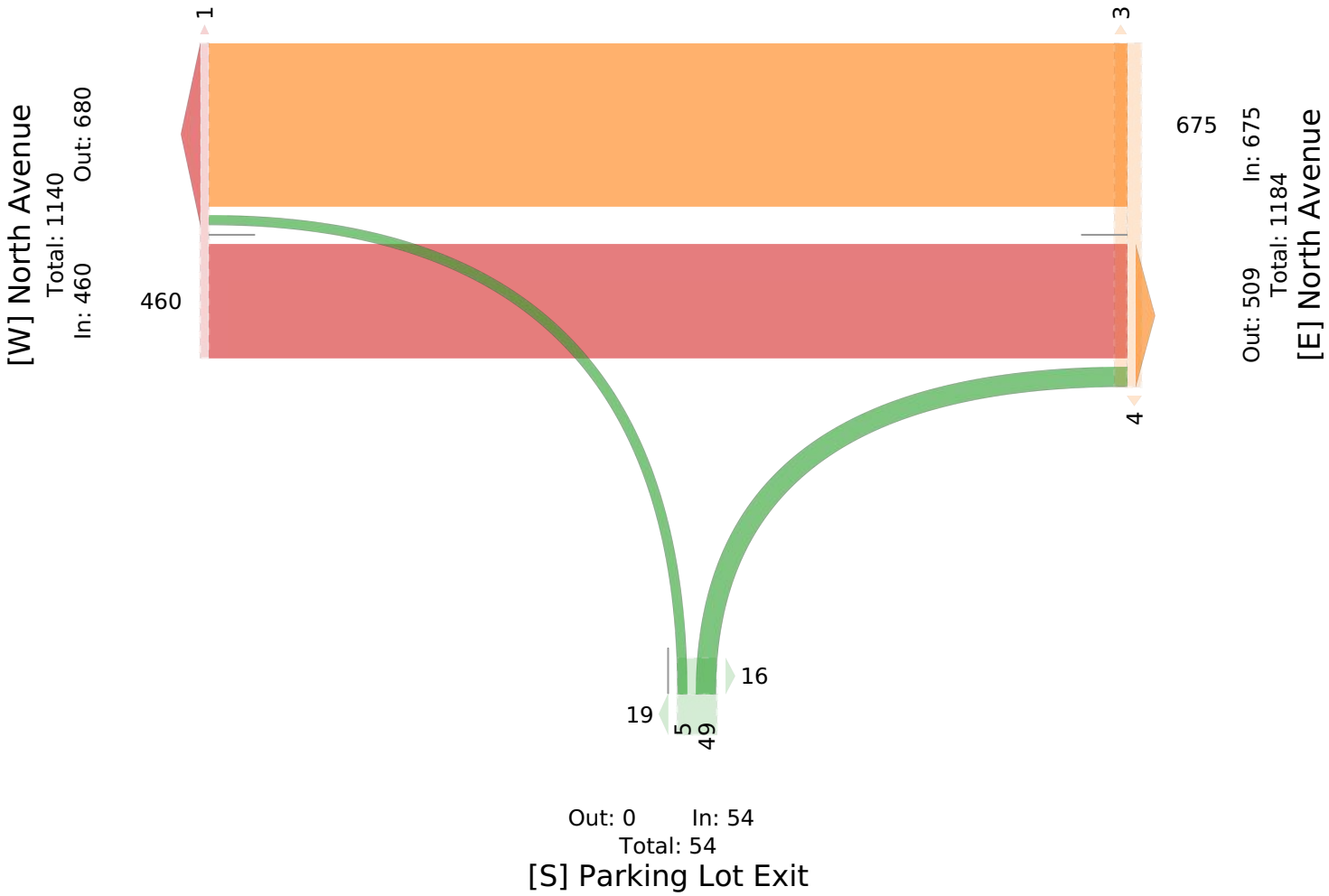
Leg / Direction	Parking Lot Exit Northbound					North Avenue Eastbound					North Avenue Westbound					
Time	L	R	U	**App**	Ped*	T	R	U	**App**	Ped*	L	T	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	4	9	0	**13**	12	113	0	0	**113**	1	0	174	0	**174**	3	**300**
1:15PM	0	21	0	**21**	10	130	0	0	**130**	0	0	152	0	**152**	0	**303**
1:30PM	1	10	0	**11**	10	102	0	0	**102**	0	0	190	0	**190**	1	**303**
1:45PM	0	9	0	**9**	3	115	0	0	**115**	0	0	159	0	**159**	3	**283**
Total	5	49	0	**54**	35	460	0	0	**460**	1	0	675	0	**675**	7	**1189**
% Approach	9.3%	90.7%	0%	**-**	-	100%	0%	0%	**-**	-	0%	100%	0%	**-**	-	**-**
% Total	0.4%	4.1%	0%	**4.5%**	-	38.7%	0%	0%	**38.7%**	-	0%	56.8%	0%	**56.8%**	-	**-**
PHF	0.313	0.583	-	**0.643**	-	0.885	-	-	**0.885**	-	-	0.888	-	**0.888**	-	0.981
Lights	5	49	0	**54**	-	456	0	0	**456**	-	0	669	0	**669**	-	1179
% Lights	100%	100%	0%	**100%**	-	99.1%	0%	0%	**99.1%**	-	0%	99.1%	0%	**99.1%**	-	99.2%
Articulated Trucks	0	0	0	**0**	-	1	0	0	**1**	-	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	**0%**	-	0.2%	0%	0%	**0.2%**	-	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	**0**	-	3	0	0	**3**	-	0	6	0	**6**	-	9
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	-	0.7%	0%	0%	**0.7%**	-	0%	0.9%	0%	**0.9%**	-	0.8%
Pedestrians	-	-	-	-	35	-	-	-	-	1	-	-	-	-	7	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

22. North Avenue and Parking Lot Egress Only - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965806, Location: 40.650255, -74.347411, Site Code: 22

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650255, -74.347411

Count Name: 22. North Avenue and Parking Lot Egress Only
Site Code: 22
Start Date: 06/18/2022

Turning Movement Data

Start Time	North Avenue Eastbound					North Avenue Westbound					Parking Lot Exit Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
11:00 AM	0	123	1	0	124	0	0	186	1	186	0	0	12	11	12	322
11:15 AM	0	137	0	0	137	0	0	165	1	165	0	0	10	17	10	312
11:30 AM	0	116	0	0	116	0	0	175	3	175	0	0	14	14	14	305
11:45 AM	0	151	0	0	151	0	0	180	2	180	0	0	19	8	19	350
Hourly Total	0	527	1	0	528	0	0	706	7	706	0	0	55	50	55	1289
12:00 PM	0	146	0	2	146	0	0	174	3	174	0	0	16	17	16	336
12:15 PM	0	129	0	4	129	0	0	178	5	178	0	0	22	14	22	329
12:30 PM	0	122	0	1	122	0	0	192	0	192	0	2	10	21	12	326
12:45 PM	0	144	0	0	144	0	0	178	1	178	0	0	10	13	10	332
Hourly Total	0	541	0	7	541	0	0	722	9	722	0	2	58	65	60	1323
1:00 PM	0	113	0	1	113	0	0	174	3	174	0	4	9	12	13	300
1:15 PM	0	130	0	0	130	0	0	152	0	152	0	0	21	10	21	303
1:30 PM	0	102	0	0	102	0	0	190	1	190	0	1	10	10	11	303
1:45 PM	0	115	0	0	115	0	0	159	3	159	0	0	9	3	9	283
Hourly Total	0	460	0	1	460	0	0	675	7	675	0	5	49	35	54	1189
Grand Total	0	1528	1	8	1529	0	0	2103	23	2103	0	7	162	150	169	3801
Approach %	0.0	99.9	0.1	-	-	0.0	0.0	100.0	-	-	0.0	4.1	95.9	-	-	-
Total %	0.0	40.2	0.0	-	40.2	0.0	0.0	55.3	-	55.3	0.0	0.2	4.3	-	4.4	-
Lights	0	1513	1	-	1514	0	0	2066	-	2066	0	7	162	-	169	3749
% Lights	-	99.0	100.0	-	99.0	-	-	98.2	-	98.2	-	100.0	100.0	-	100.0	98.6
Mediums	0	11	0	-	11	0	0	35	-	35	0	0	0	-	0	46
% Mediums	-	0.7	0.0	-	0.7	-	-	1.7	-	1.7	-	0.0	0.0	-	0.0	1.2
Articulated Trucks	0	4	0	-	4	0	0	2	-	2	0	0	0	-	0	6
% Articulated Trucks	-	0.3	0.0	-	0.3	-	-	0.1	-	0.1	-	0.0	0.0	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	2.0	-	-
Pedestrians	-	-	-	8	-	-	-	-	23	-	-	-	-	147	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	98.0	-	-

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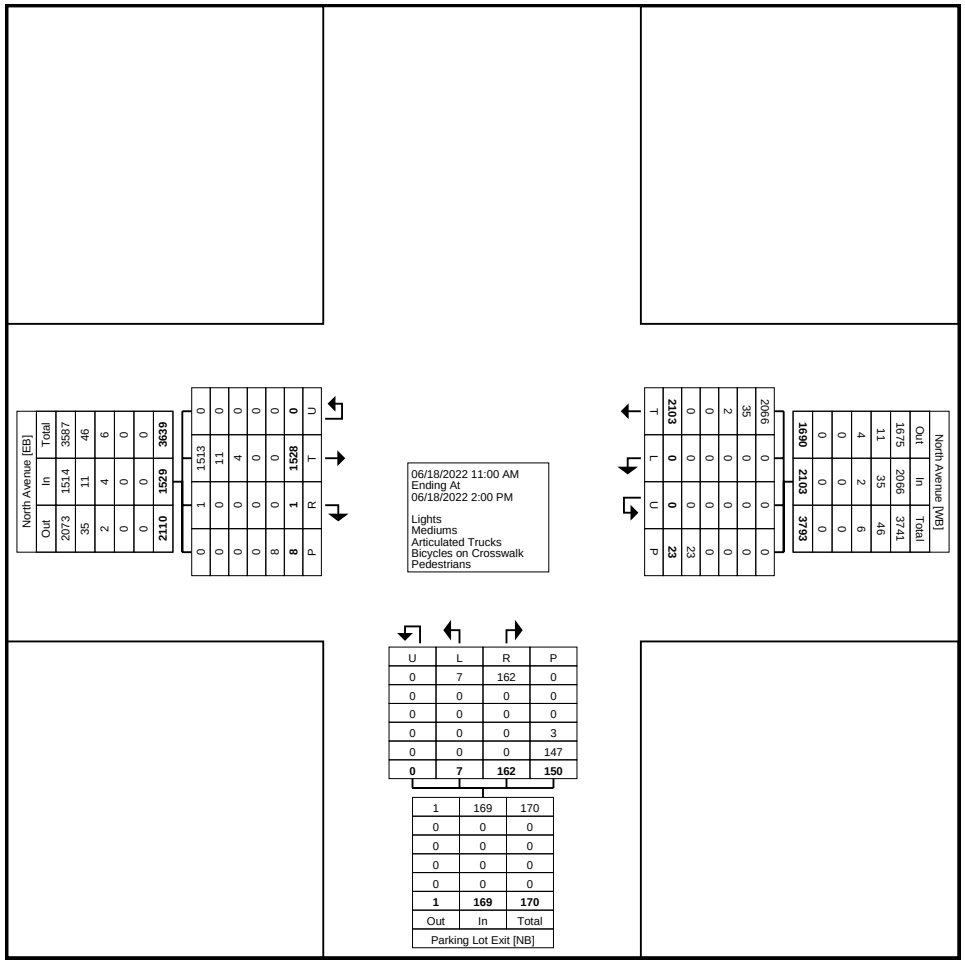
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650255, -74.347411

Count Name: 22. North Avenue and Parking Lot Egress Only
Site Code: 22
Start Date: 06/18/2022



Turning Movement Data Plot

Imperial Traffic & Data Collection
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PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650255, -74.347411

Count Name: 22. North Avenue and Parking Lot Egress Only
Site Code: 22
Start Date: 06/18/2022

Turning Movement Peak Hour Data (11:45 AM)

Start Time	North Avenue Eastbound					North Avenue Westbound					Parking Lot Exit Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
11:45 AM	0	151	0	0	151	0	0	180	2	180	0	0	19	8	19	350
12:00 PM	0	146	0	2	146	0	0	174	3	174	0	0	16	17	16	336
12:15 PM	0	129	0	4	129	0	0	178	5	178	0	0	22	14	22	329
12:30 PM	0	122	0	1	122	0	0	192	0	192	0	2	10	21	12	326
Total	0	548	0	7	548	0	0	724	10	724	0	2	67	60	69	1341
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	2.9	97.1	-	-	-
Total %	0.0	40.9	0.0	-	40.9	0.0	0.0	54.0	-	54.0	0.0	0.1	5.0	-	5.1	-
PHF	0.000	0.907	0.000	-	0.907	0.000	0.000	0.943	-	0.943	0.000	0.250	0.761	-	0.784	0.958
Lights	0	541	0	-	541	0	0	712	-	712	0	2	67	-	69	1322
% Lights	-	98.7	-	-	98.7	-	-	98.3	-	98.3	-	100.0	100.0	-	100.0	98.6
Mediums	0	4	0	-	4	0	0	11	-	11	0	0	0	-	0	15
% Mediums	-	0.7	-	-	0.7	-	-	1.5	-	1.5	-	0.0	0.0	-	0.0	1.1
Articulated Trucks	0	3	0	-	3	0	0	1	-	1	0	0	0	-	0	4
% Articulated Trucks	-	0.5	-	-	0.5	-	-	0.1	-	0.1	-	0.0	0.0	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	7	-	-	-	-	10	-	-	-	-	60	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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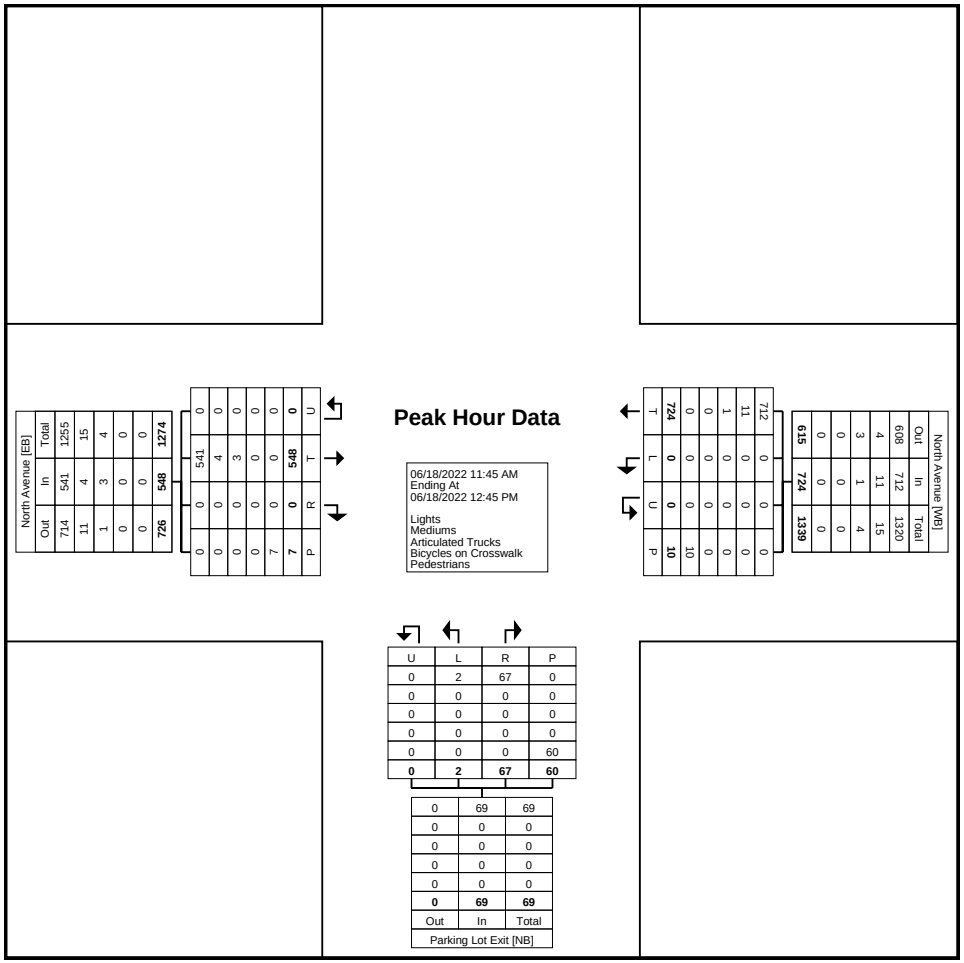
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.650255, -74.347411

Count Name: 22. North Avenue and Parking Lot Egress Only
Site Code: 22
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (11:45 AM)

23,24. North Avenue and Parking lot Driveways - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965817, Location: 40.650426, -74.346249, Site Code: 23,24

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

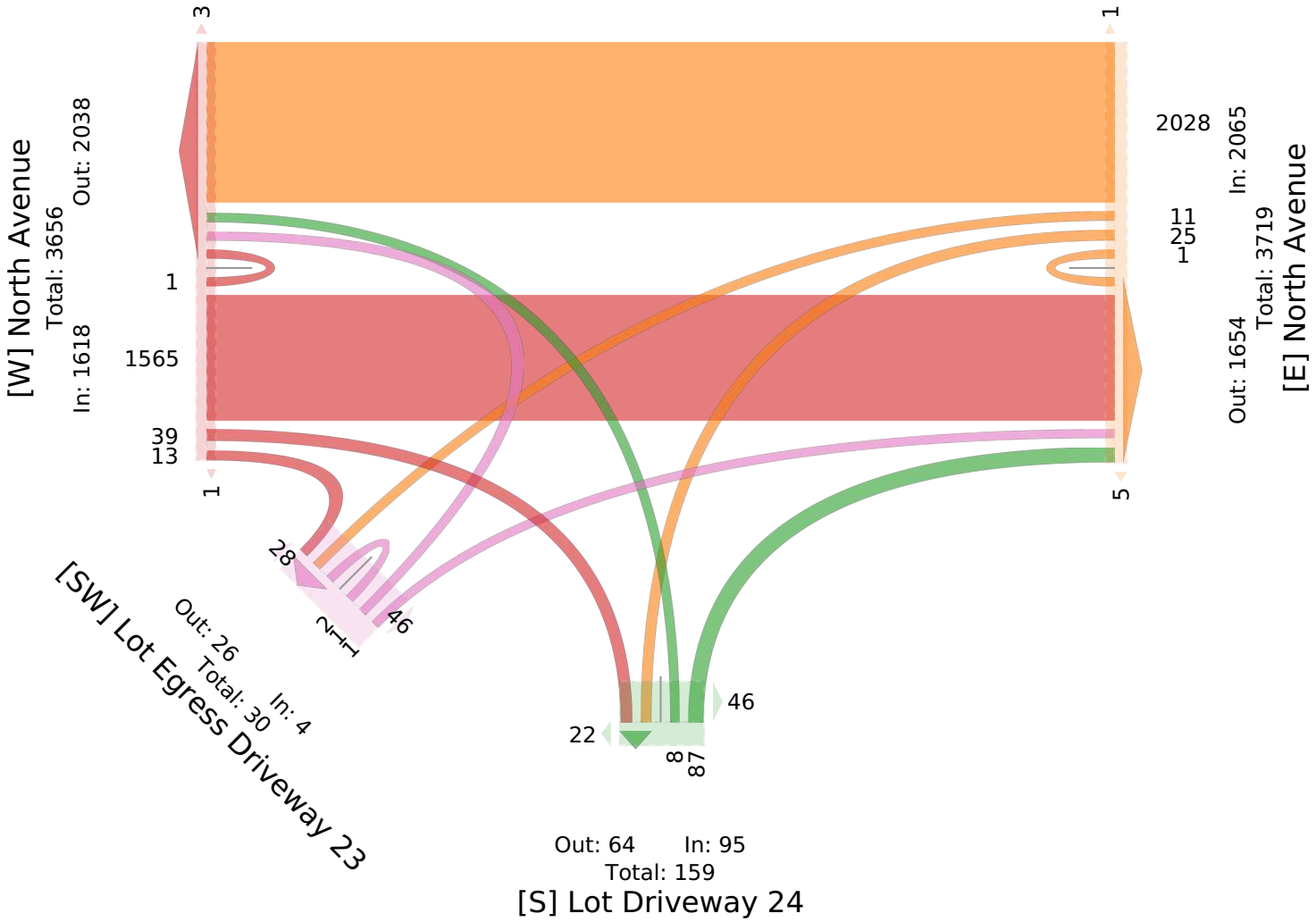
Leg	Lot Driveway 24						North Avenue						North Avenue						Lot Egress Driveway 23						
Direction	Northbound						Eastbound						Westbound						Northeastbound						
Time	HL	L	R	U	**App**	Ped*	T	R	HR	U	**App**	Ped*	L	BL	T	U	**App**	Ped*	HL	BR	HR	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	0	0	5	0	**5**	5	122	3	0	1	**126**	0	2	2	177	0	**181**	0	0	0	0	0	**0**	5	**312**
11:15AM	0	2	3	0	**5**	5	142	4	0	0	**146**	0	1	0	157	0	**158**	0	0	0	0	0	**0**	5	**309**
11:30AM	0	0	6	0	**6**	10	121	2	0	0	**123**	0	3	0	178	0	**181**	1	0	0	0	0	**0**	14	**310**
11:45AM	0	1	7	0	**8**	8	143	9	1	0	**153**	0	1	0	168	0	**169**	0	0	0	0	0	**0**	8	**330**
Hourly Total	0	3	21	0	**24**	28	528	18	1	1	**548**	0	7	2	680	0	**689**	1	0	0	0	0	**0**	32	**1261**
12:00PM	0	1	12	0	**13**	2	146	5	2	0	**153**	0	1	0	178	0	**179**	0	0	0	0	0	**0**	4	**345**
12:15PM	0	0	15	0	**15**	10	142	5	3	0	**150**	0	2	2	161	0	**165**	3	0	0	0	0	**0**	11	**330**
12:30PM	0	0	9	0	**9**	5	121	2	1	0	**124**	0	1	1	183	0	**185**	2	1	1	0	2	**4**	7	**322**
12:45PM	0	1	5	0	**6**	9	139	2	1	0	**142**	0	2	1	162	0	**165**	0	0	0	0	0	**0**	8	**313**
Hourly Total	0	2	41	0	**43**	26	548	14	7	0	**569**	0	6	4	684	0	**694**	5	1	1	0	2	**4**	30	**1310**
1:00PM	0	0	4	0	**4**	4	127	0	1	0	**128**	1	3	1	171	0	**175**	0	0	0	0	0	**0**	2	**307**
1:15PM	0	0	8	0	**8**	3	136	3	2	0	**141**	1	1	1	156	0	**158**	0	0	0	0	0	**0**	5	**307**
1:30PM	0	2	7	0	**9**	3	109	2	1	0	**112**	2	2	2	189	0	**193**	0	0	0	0	0	**0**	4	**314**
1:45PM	0	1	6	0	**7**	4	117	2	1	0	**120**	0	6	1	148	1	**156**	0	0	0	0	0	**0**	1	**283**
Hourly Total	0	3	25	0	**28**	14	489	7	5	0	**501**	4	12	5	664	1	**682**	0	0	0	0	0	**0**	12	**1211**
Total	0	8	87	0	**95**	68	1565	39	13	1	**1618**	4	25	11	2028	1	**2065**	6	1	1	0	2	**4**	74	**3782**
% Approach	0%	8.4%	91.6%	0%	**-**	-	96.7%	2.4%	0.8%	0.1%	**-**	-	1.2%	0.5%	98.2%	0%	**-**	-	25.0%	25.0%	0%	50.0%	**-**	-	**-**
% Total	0%	0.2%	2.3%	0%	**2.5%**	-	41.4%	1.0%	0.3%	0%	**42.8%**	-	0.7%	0.3%	53.6%	0%	**54.6%**	-	0%	0%	0%	0.1%	**0.1%**	-	**-**
Lights	0	8	86	0	**94**	-	1551	39	13	1	**1604**	-	25	11	1991	1	**2028**	-	1	1	0	2	**4**	-	3730
% Lights	0%	100%	98.9%	0%	**98.9%**	-	99.1%	100%	100%	100%	**99.1%**	-	100%	100%	98.2%	100%	**98.2%**	-	100%	100%	0%	100%	**100%**	-	98.6%
Articulated Trucks	0	0	0	0	**0**	-	2	0	0	0	**2**	-	0	0	3	0	**3**	-	0	0	0	0	**0**	-	5
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0.1%	0%	0%	0%	**0.1%**	-	0%	0%	0.1%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	0	1	0	**1**	-	12	0	0	0	**12**	-	0	0	34	0	**34**	-	0	0	0	0	**0**	-	47
% Buses and Single-Unit Trucks	0%	0%	1.1%	0%	**1.1%**	-	0.8%	0%	0%	0%	**0.7%**	-	0%	0%	1.7%	0%	**1.6%**	-	0%	0%	0%	0%	**0%**	-	1.2%
Pedestrians	-	-	-	-	-	64	-	-	-	-	-	4	-	-	-	-	-	6	-	-	-	-	-	71	
% Pedestrians	-	-	-	-	-	94.1%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	95.9%	-
Bicycles on Crosswalk	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	
% Bicycles on Crosswalk	-	-	-	-	-	5.9%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	4.1%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

23,24. North Avenue and Parking lot Driveways - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965817, Location: 40.650426, -74.346249, Site Code: 23,24

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



23,24. North Avenue and Parking lot Driveways - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965817, Location: 40.650426, -74.346249, Site Code: 23,24

Provided by: Imperial Traffic & Data Collection
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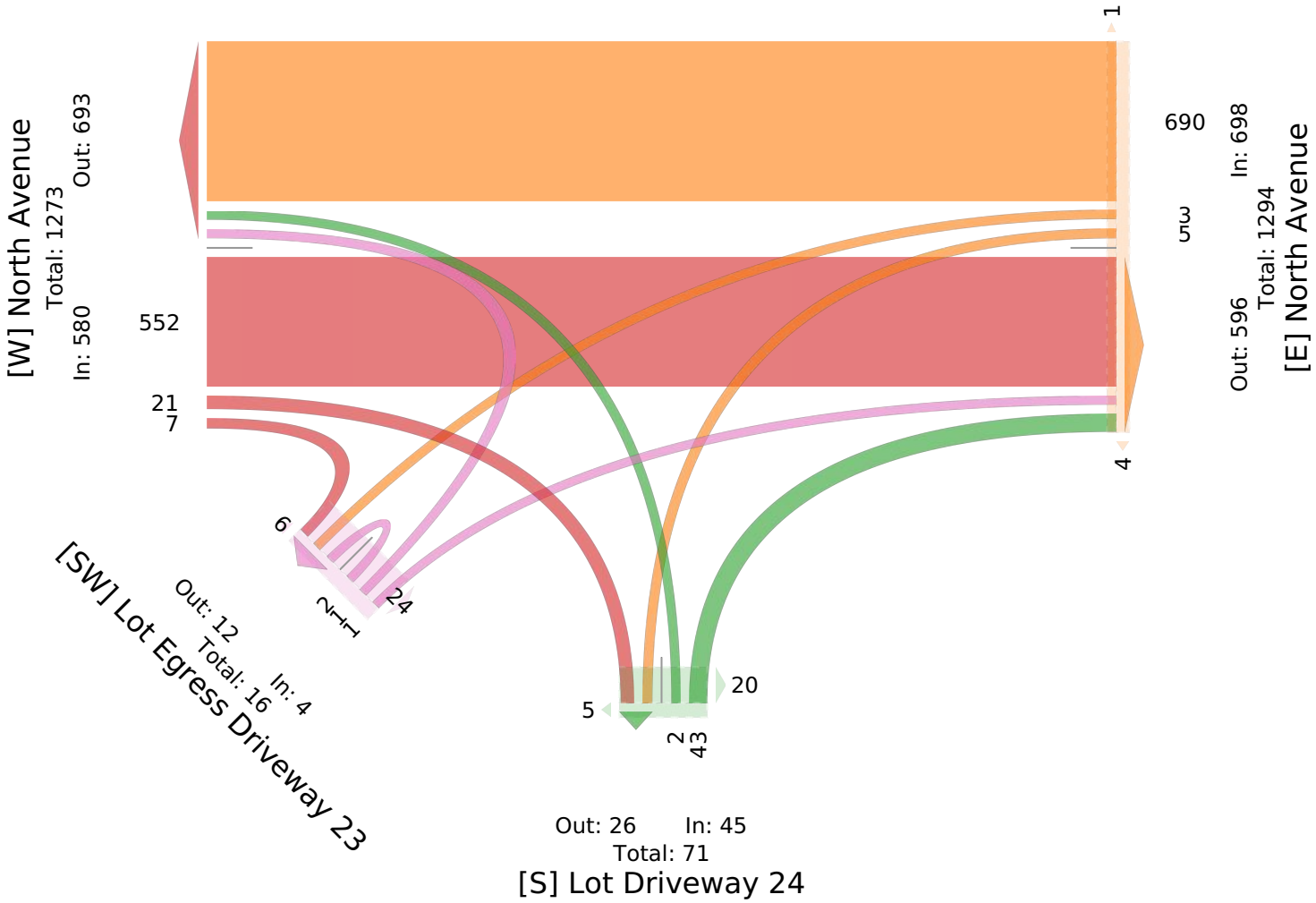
Leg	Lot Driveway 24						North Avenue						North Avenue						Lot Egress Driveway 23						
Direction	Northbound						Eastbound						Westbound						Northeastbound						
Time	HL	L	R	U	**App**	Ped*	T	R	HR	U	**App**	Ped*	L	BL	T	U	**App**	Ped*	HL	BR	HR	U	**App**	Ped*	**Int**
2022-06-18 11:45AM	0	1	7	0	**8**	8	143	9	1	0	**153**	0	1	0	168	0	**169**	0	0	0	0	0	**0**	8	**330**
12:00PM	0	1	12	0	**13**	2	146	5	2	0	**153**	0	1	0	178	0	**179**	0	0	0	0	0	**0**	4	**345**
12:15PM	0	0	15	0	**15**	10	142	5	3	0	**150**	0	2	2	161	0	**165**	3	0	0	0	0	**0**	11	**330**
12:30PM	0	0	9	0	**9**	5	121	2	1	0	**124**	0	1	1	183	0	**185**	2	1	1	0	2	**4**	7	**322**
Total	0	2	43	0	**45**	25	552	21	7	0	**580**	0	5	3	690	0	**698**	5	1	1	0	2	**4**	30	**1327**
% Approach	0%	4.4%	95.6%	0%	**-**	-	95.2%	3.6%	1.2%	0%	**-**	-	0.7%	0.4%	98.9%	0%	**-**	-	25.0%	25.0%	0%	50.0%	**-**	-	-
% Total	0%	0.2%	3.2%	0%	**3.4%**	-	41.6%	1.6%	0.5%	0%	**43.7%**	-	0.4%	0.2%	52.0%	0%	**52.6%**	-	0.1%	0.1%	0%	0.2%	**0.3%**	-	-
PHF	-	0.500	0.717	-	**0.750**	-	0.945	0.583	0.583	-	**0.948**	-	0.625	0.375	0.943	-	**0.943**	-	0.250	0.250	-	0.250	**0.250**	-	0.962
Lights	0	2	43	0	**45**	-	546	21	7	0	**574**	-	5	3	677	0	**685**	-	1	1	0	2	**4**	-	1308
% Lights	0%	100%	100%	0%	**100%**	-	98.9%	100%	100%	0%	**99.0%**	-	100%	100%	98.1%	0%	**98.1%**	-	100%	100%	0%	100%	**100%**	-	98.6%
Articulated Trucks	0	0	0	0	**0**	-	2	0	0	0	**2**	-	0	0	1	0	**1**	-	0	0	0	0	**0**	-	3
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0.4%	0%	0%	0%	**0.3%**	-	0%	0%	0.1%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0.2%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	4	0	0	0	**4**	-	0	0	12	0	**12**	-	0	0	0	0	**0**	-	16
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0.7%	0%	0%	0%	**0.7%**	-	0%	0%	1.7%	0%	**1.7%**	-	0%	0%	0%	0%	**0%**	-	1.2%
Pedestrians	-	-	-	-	-	24	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	29	
% Pedestrians	-	-	-	-	-	96.0%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	96.7%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	4.0%	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	3.3%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

23,24. North Avenue and Parking lot Driveways - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (11:45 AM - 12:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965817, Location: 40.650426, -74.346249, Site Code: 23,24

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



23,24. North Avenue and Parking lot Driveways - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965817, Location: 40.650426, -74.346249, Site Code: 23,24

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
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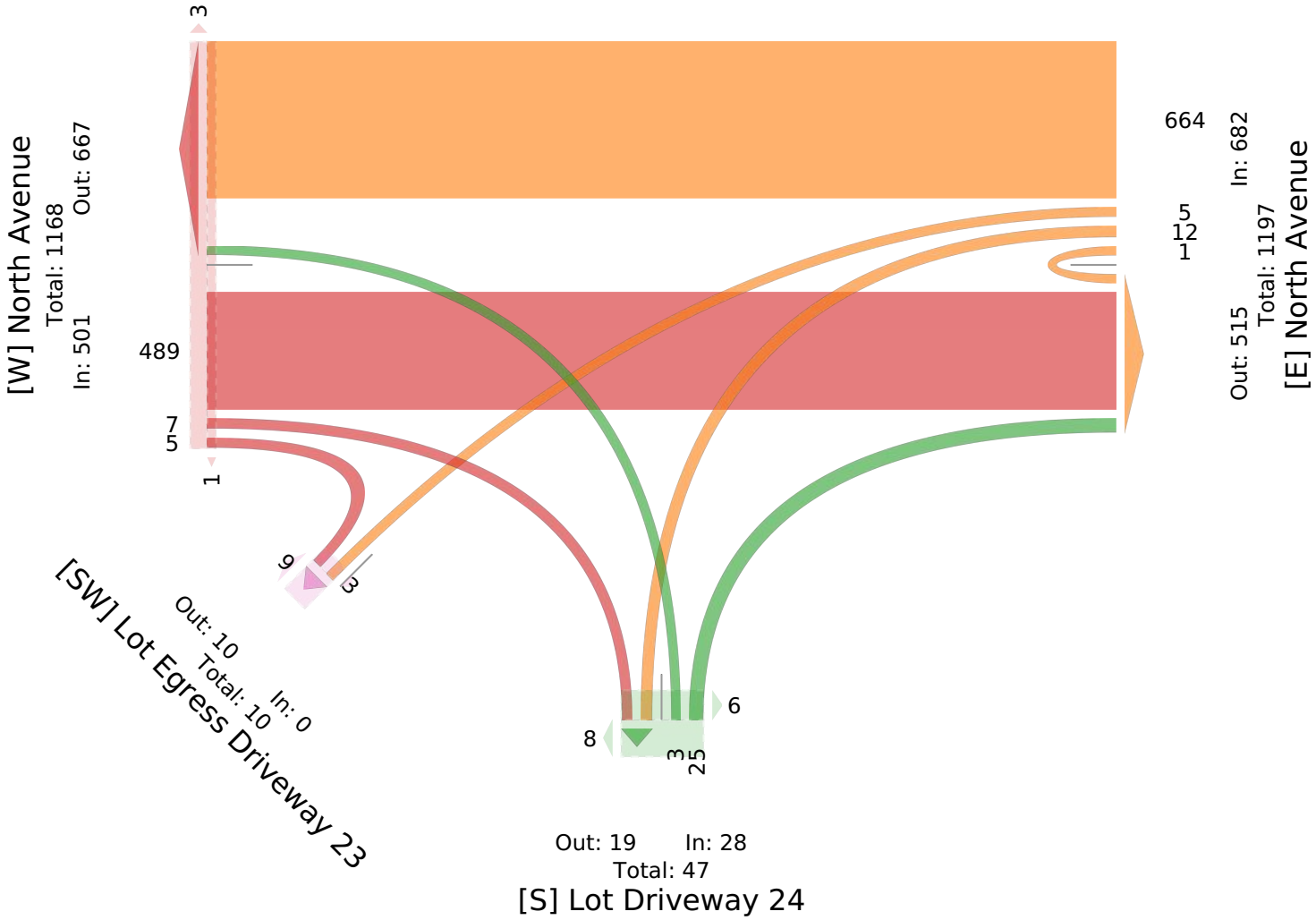
Leg Direction	Lot Driveway 24 Northbound						North Avenue Eastbound						North Avenue Westbound						Lot Egress Driveway 23 Northeastbound						
Time	HL	L	R	U	**App**	Ped*	T	R	HR	U	**App**	Ped*	L	BL	T	U	**App**	Ped*	HL	BR	HR	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	0	0	4	0	**4**	4	127	0	1	0	**128**	1	3	1	171	0	**175**	0	0	0	0	0	**0**	2	**307**
1:15PM	0	0	8	0	**8**	3	136	3	2	0	**141**	1	1	1	156	0	**158**	0	0	0	0	0	**0**	5	**307**
1:30PM	0	2	7	0	**9**	3	109	2	1	0	**112**	2	2	2	189	0	**193**	0	0	0	0	0	**0**	4	**314**
1:45PM	0	1	6	0	**7**	4	117	2	1	0	**120**	0	6	1	148	1	**156**	0	0	0	0	0	**0**	1	**283**
Total	0	3	25	0	**28**	14	489	7	5	0	**501**	4	12	5	664	1	**682**	0	0	0	0	0	**0**	12	**1211**
% Approach	0%	10.7%	89.3%	0%	**-**	-	97.6%	1.4%	1.0%	0%	**-**	-	1.8%	0.7%	97.4%	0.1%	**-**	-	0%	0%	0%	0%	**-**	-	-
% Total	0%	0.2%	2.1%	0%	**2.3%**	-	40.4%	0.6%	0.4%	0%	**41.4%**	-	1.0%	0.4%	54.8%	0.1%	**56.3%**	-	0%	0%	0%	0%	**0%**	-	-
PHF	-	0.375	0.781	-	**0.778**	-	0.899	0.583	0.625	-	**0.888**	-	0.500	0.625	0.878	0.250	**0.883**	-	-	-	-	-	**-**	-	0.964
Lights	0	3	25	0	**28**	-	485	7	5	0	**497**	-	12	5	656	1	**674**	-	0	0	0	0	**0**	-	1199
% Lights	0%	100%	100%	0%	**100%**	-	99.2%	100%	100%	0%	**99.2%**	-	100%	100%	98.8%	100%	**98.8%**	-	0%	0%	0%	0%	**-**	-	99.0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	1	0	**1**	-	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0.2%	0%	**0.1%**	-	0%	0%	0%	0%	**-**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	4	0	0	0	**4**	-	0	0	7	0	**7**	-	0	0	0	0	**0**	-	11
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0.8%	0%	0%	0%	**0.8%**	-	0%	0%	1.1%	0%	**1.0%**	-	0%	0%	0%	0%	**-**	-	0.9%
Pedestrians	-	-	-	-	-	13	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	12	
% Pedestrians	-	-	-	-	-	92.9%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	7.1%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

23,24. North Avenue and Parking lot Driveways - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965817, Location: 40.650426, -74.346249, Site Code: 23,24

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



25. South Avenue and South Lot - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965812, Location: 40.648635, -74.347943, Site Code: 25

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Leg	Business Driveway						Parking Driveway						South Avenue						South Avenue						
Direction	Northbound						Southbound						Eastbound						Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	1	0	2	0	**3**	13	1	0	3	0	**4**	0	0	167	1	0	**168**	0	1	158	0	0	**159**	3	**334**
11:15AM	0	0	0	0	**0**	7	0	0	1	0	**1**	1	0	151	1	0	**152**	0	0	179	1	0	**180**	0	**333**
11:30AM	0	0	1	0	**1**	5	0	0	2	0	**2**	3	3	145	0	0	**148**	1	0	145	0	0	**145**	3	**296**
11:45AM	0	0	0	0	**0**	10	0	0	1	0	**1**	2	1	141	0	0	**142**	1	1	163	4	0	**168**	0	**311**
Hourly Total	1	0	3	0	**4**	35	1	0	7	0	**8**	6	4	604	2	0	**610**	2	2	645	5	0	**652**	6	**1274**
12:00PM	2	0	0	0	**2**	11	1	0	0	0	**1**	5	0	161	0	0	**161**	1	0	151	0	0	**151**	1	**315**
12:15PM	0	0	1	0	**1**	5	1	0	3	0	**4**	4	0	163	0	0	**163**	0	0	157	0	0	**157**	1	**325**
12:30PM	0	0	0	0	**0**	8	2	0	0	0	**2**	1	0	147	0	0	**147**	1	0	144	0	0	**144**	0	**293**
12:45PM	0	0	0	0	**0**	2	2	0	1	0	**3**	2	1	174	0	0	**175**	0	0	159	1	0	**160**	1	**338**
Hourly Total	2	0	1	0	**3**	26	6	0	4	0	**10**	12	1	645	0	0	**646**	2	0	611	1	0	**612**	3	**1271**
1:00PM	0	0	0	0	**0**	11	1	0	1	0	**2**	2	3	148	0	0	**151**	0	0	163	1	0	**164**	0	**317**
1:15PM	0	0	0	0	**0**	2	1	0	0	0	**1**	2	0	160	1	0	**161**	0	0	171	0	0	**171**	0	**333**
1:30PM	0	0	0	0	**0**	10	0	0	2	0	**2**	2	2	144	0	0	**146**	0	0	144	0	0	**144**	1	**292**
1:45PM	0	1	0	0	**1**	15	1	0	2	0	**3**	2	2	140	1	0	**143**	0	0	135	0	0	**135**	1	**282**
Hourly Total	0	1	0	0	**1**	38	3	0	5	0	**8**	8	7	592	2	0	**601**	0	0	613	1	0	**614**	2	**1224**
Total	3	1	4	0	**8**	99	10	0	16	0	**26**	26	12	1841	4	0	**1857**	4	2	1869	7	0	**1878**	11	**3769**
% Approach	37.5%	12.5%	50.0%	0%	**-**	-	38.5%	0%	61.5%	0%	**-**	-	0.6%	99.1%	0.2%	0%	**-**	-	0.1%	99.5%	0.4%	0%	**-**	-	-
% Total	0.1%	0%	0.1%	0%	**0.2%**	-	0.3%	0%	0.4%	0%	**0.7%**	-	0.3%	48.8%	0.1%	0%	**49.3%**	-	0.1%	49.6%	0.2%	0%	**49.8%**	-	-
Lights	3	1	4	0	**8**	-	10	0	15	0	**25**	-	12	1823	4	0	**1839**	-	2	1855	7	0	**1864**	-	3736
% Lights	100%	100%	100%	0%	**100%**	-	100%	0%	93.8%	0%	**96.2%**	-	100%	99.0%	100%	0%	**99.0%**	-	100%	99.3%	100%	0%	**99.3%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	1	0	0	**1**	-	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0.1%	0%	0%	**0.1%**	-	0%	0.1%	0%	0%	**0.1%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	1	0	**1**	-	0	17	0	0	**17**	-	0	13	0	0	**13**	-	31
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	6.3%	0%	**3.8%**	-	0%	0.9%	0%	0%	**0.9%**	-	0%	0.7%	0%	0%	**0.7%**	-	0.8%
Pedestrians	-	-	-	-	-	98	-	-	-	-	-	19	-	-	-	-	-	4	-	-	-	-	-	11	
% Pedestrians	-	-	-	-	-	99.0%	-	-	-	-	-	73.1%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	1.0%	-	-	-	-	-	26.9%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

25. South Avenue and South Lot - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965812, Location: 40.648635, -74.347943, Site Code: 25

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
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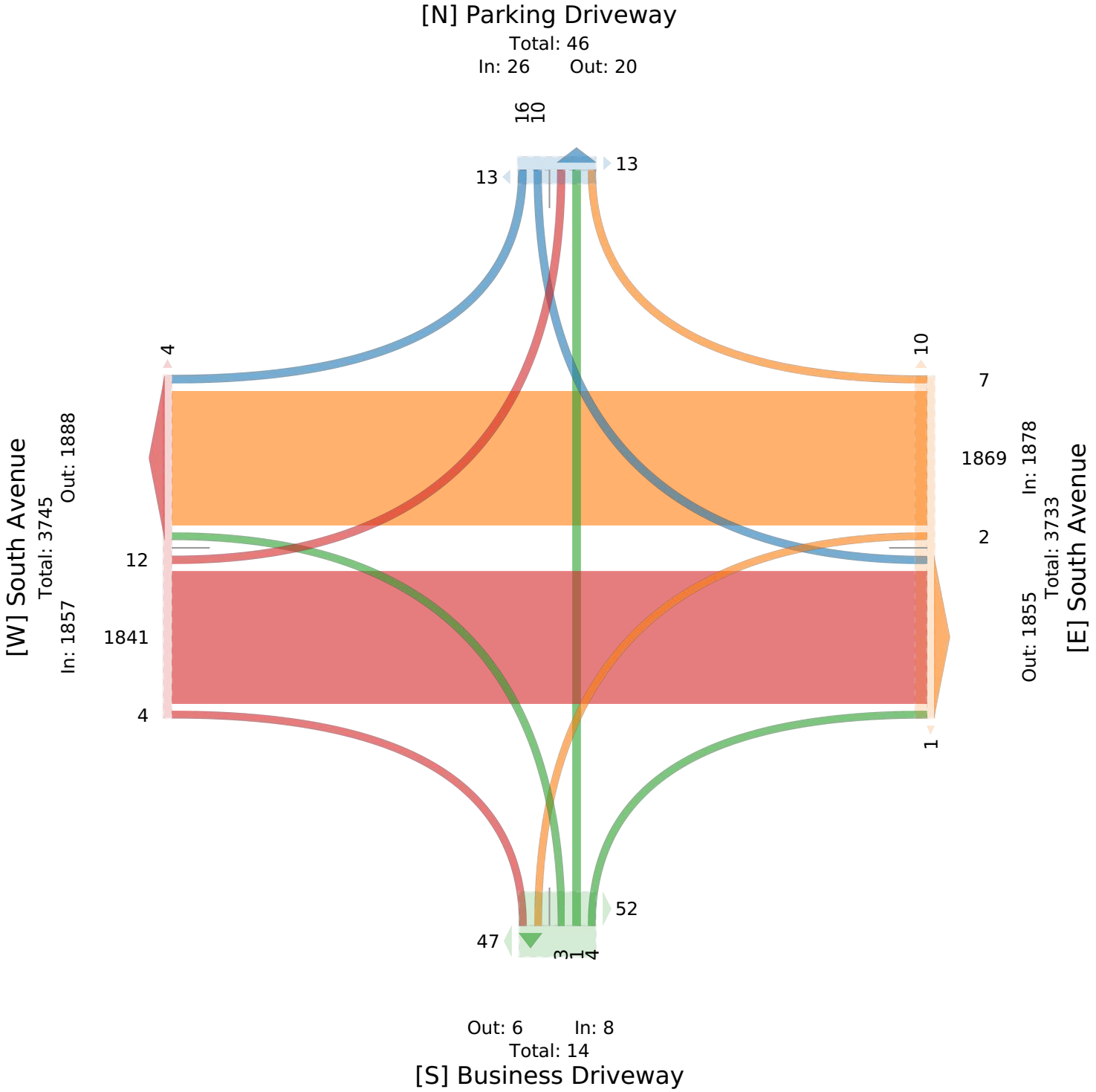


25. South Avenue and South Lot - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12:30 PM - 1:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965812, Location: 40.648635, -74.347943, Site Code: 25

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

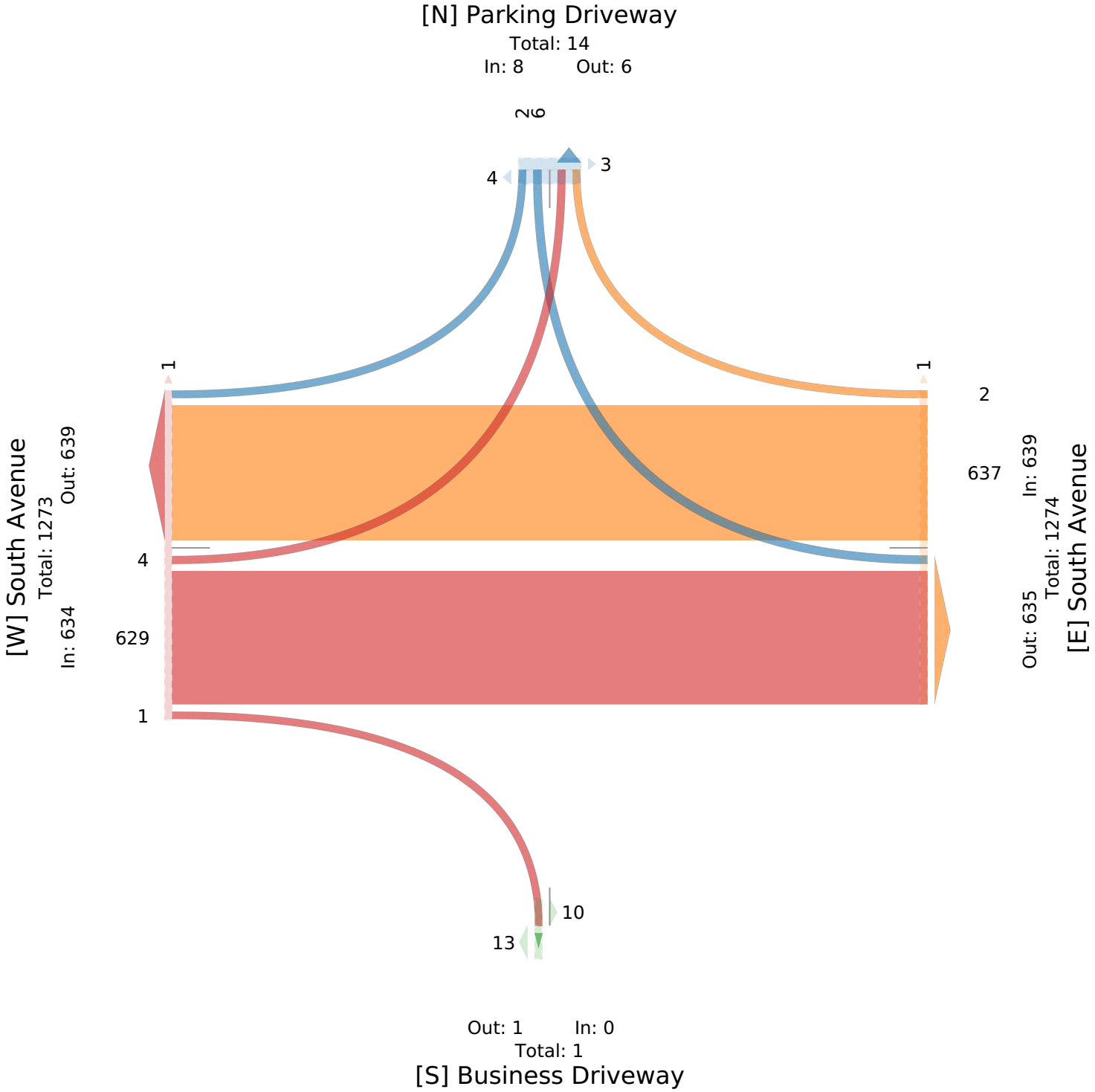
Leg Direction	Business Driveway Northbound						Parking Driveway Southbound						South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 12:30PM	0	0	0	0	**0**	8	2	0	0	0	**2**	1	0	147	0	0	**147**	1	0	144	0	0	**144**	0	**293**
12:45PM	0	0	0	0	**0**	2	2	0	1	0	**3**	2	1	174	0	0	**175**	0	0	159	1	0	**160**	1	**338**
1:00PM	0	0	0	0	**0**	11	1	0	1	0	**2**	2	3	148	0	0	**151**	0	0	163	1	0	**164**	0	**317**
1:15PM	0	0	0	0	**0**	2	1	0	0	0	**1**	2	0	160	1	0	**161**	0	0	171	0	0	**171**	0	**333**
Total	0	0	0	0	**0**	23	6	0	2	0	**8**	7	4	629	1	0	**634**	1	0	637	2	0	**639**	1	**1281**
% Approach	0%	0%	0%	0%	**-**	-	75.0%	0%	25.0%	0%	**-**	-	0.6%	99.2%	0.2%	0%	**-**	-	0%	99.7%	0.3%	0%	**-**	-	**-**
% Total	0%	0%	0%	0%	**0%**	-	0.5%	0%	0.2%	0%	**0.6%**	-	0.3%	49.1%	0.1%	0%	**49.5%**	-	0%	49.7%	0.2%	0%	**49.9%**	-	**-**
PHF	-	-	-	-	**-**	-	0.750	-	0.500	-	**0.667**	-	0.333	0.904	0.250	-	**0.906**	-	-	0.931	0.500	-	**0.934**	-	0.947
Lights	0	0	0	0	**0**	-	6	0	2	0	**8**	-	4	623	1	0	**628**	-	0	632	2	0	**634**	-	1270
% Lights	0%	0%	0%	0%	**-**	-	100%	0%	100%	0%	**100%**	-	100%	99.0%	100%	0%	**99.1%**	-	0%	99.2%	100%	0%	**99.2%**	-	99.1%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	6	0	0	**6**	-	0	5	0	0	**5**	-	11
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0%	1.0%	0%	0%	**0.9%**	-	0%	0.8%	0%	0%	**0.8%**	-	0.9%
Pedestrians	-	-	-	-	-	23	-	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	85.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	14.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

25. South Avenue and South Lot - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12:30 PM - 1:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965812, Location: 40.648635, -74.347943, Site Code: 25

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



25. South Avenue and South Lot - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965812, Location: 40.648635, -74.347943, Site Code: 25

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US

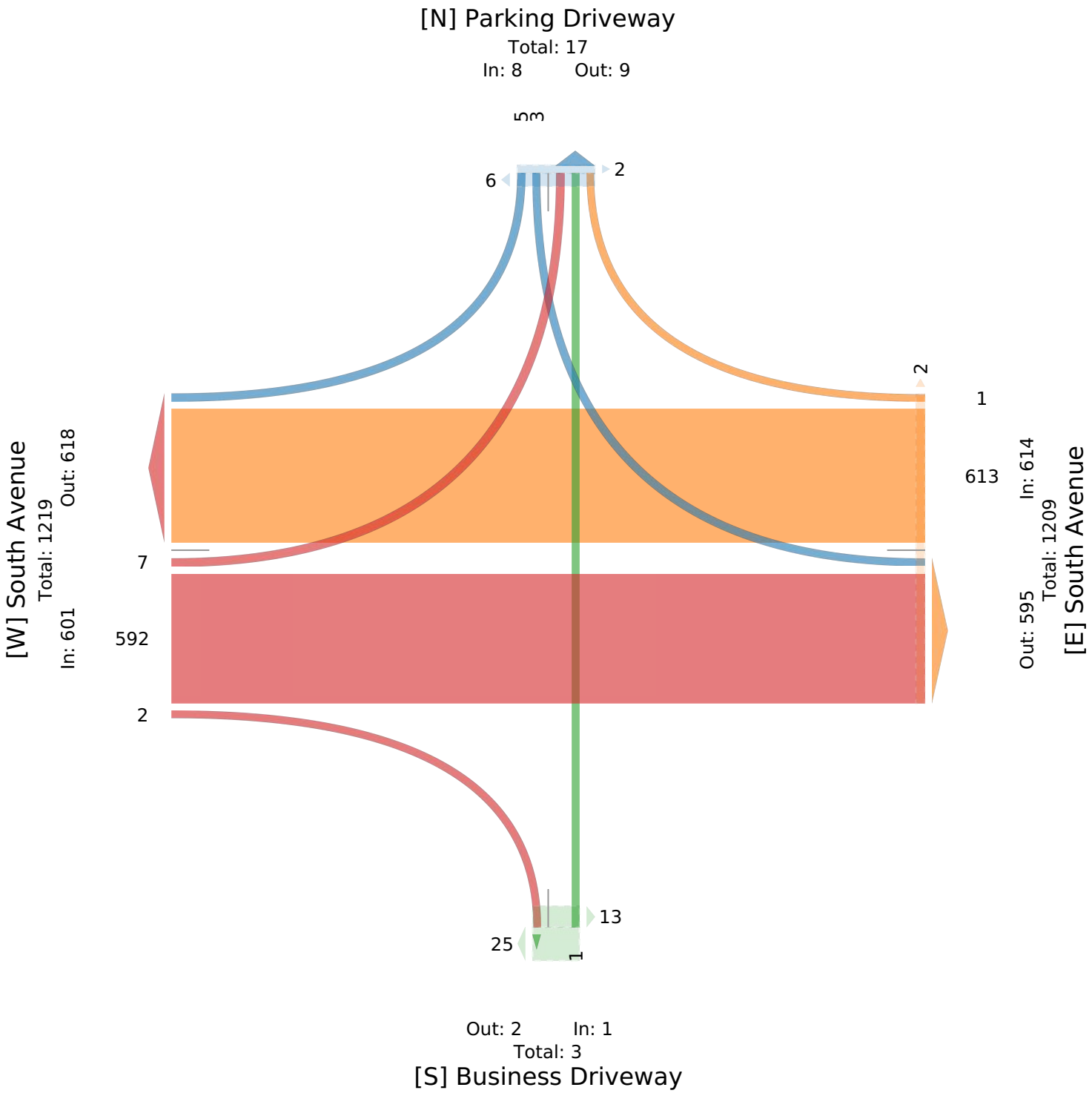
Leg / Direction	Business Driveway Northbound						Parking Driveway Southbound						South Avenue Eastbound						South Avenue Westbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	0	0	0	0	**0**	11	1	0	1	0	**2**	2	3	148	0	0	**151**	0	0	163	1	0	**164**	0	**317**
1:15PM	0	0	0	0	**0**	2	1	0	0	0	**1**	2	0	160	1	0	**161**	0	0	171	0	0	**171**	0	**333**
1:30PM	0	0	0	0	**0**	10	0	0	2	0	**2**	2	2	144	0	0	**146**	0	0	144	0	0	**144**	1	**292**
1:45PM	0	1	0	0	**1**	15	1	0	2	0	**3**	2	2	140	1	0	**143**	0	0	135	0	0	**135**	1	**282**
Total	0	1	0	0	**1**	38	3	0	5	0	**8**	8	7	592	2	0	**601**	0	0	613	1	0	**614**	2	**1224**
% Approach	0%	100%	0%	0%	**-**	-	37.5%	0%	62.5%	0%	**-**	-	1.2%	98.5%	0.3%	0%	**-**	-	0%	99.8%	0.2%	0%	**-**	-	-
% Total	0%	0.1%	0%	0%	**0.1%**	-	0.2%	0%	0.4%	0%	**0.7%**	-	0.6%	48.4%	0.2%	0%	**49.1%**	-	0%	50.1%	0.1%	0%	**50.2%**	-	-
PHF	-	0.250	-	-	**0.250**	-	0.750	-	0.625	-	**0.667**	-	0.583	0.925	0.500	-	**0.933**	-	-	0.896	0.250	-	**0.898**	-	0.919
Lights	0	1	0	0	**1**	-	3	0	5	0	**8**	-	7	585	2	0	**594**	-	0	608	1	0	**609**	-	1212
% Lights	0%	100%	0%	0%	**100%**	-	100%	0%	100%	0%	**100%**	-	100%	98.8%	100%	0%	**98.8%**	-	0%	99.2%	100%	0%	**99.2%**	-	99.0%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0.2%	0%	0%	**0.2%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	6	0	0	**6**	-	0	5	0	0	**5**	-	11
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	1.0%	0%	0%	**1.0%**	-	0%	0.8%	0%	0%	**0.8%**	-	0.9%
Pedestrians	-	-	-	-	-	37	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	97.4%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	2.6%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

25. South Avenue and South Lot - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 965812, Location: 40.648635, -74.347943, Site Code: 25

Provided by: Imperial Traffic & Data Collection
PO Box 4637,
Cherry Hill, NJ, 08003, US



Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648635, -74.347943

Count Name: 25. South Avenue and South Lot
Site Code: 25
Start Date: 06/18/2022

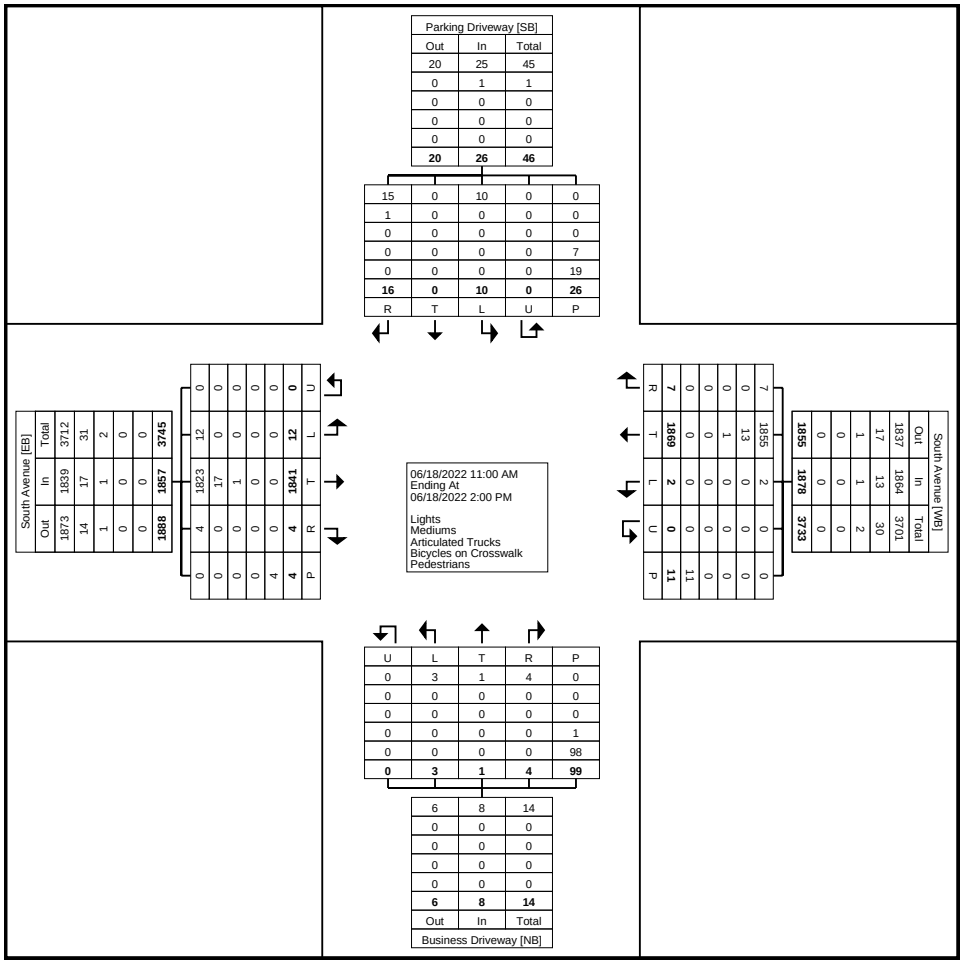
Turning Movement Data

Start Time	South Avenue Eastbound						South Avenue Westbound						Business Driveway Northbound						Parking Driveway Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
11:00 AM	0	0	167	1	0	168	0	1	158	0	3	159	0	1	0	2	13	3	0	1	0	3	0	4	334
11:15 AM	0	0	151	1	0	152	0	0	179	1	0	180	0	0	0	0	7	0	0	0	0	1	1	1	333
11:30 AM	0	3	145	0	1	148	0	0	145	0	3	145	0	0	0	1	5	1	0	0	0	2	3	2	296
11:45 AM	0	1	141	0	1	142	0	1	163	4	0	168	0	0	0	0	10	0	0	0	0	1	2	1	311
Hourly Total	0	4	604	2	2	610	0	2	645	5	6	652	0	1	0	3	35	4	0	1	0	7	6	8	1274
12:00 PM	0	0	161	0	1	161	0	0	151	0	1	151	0	2	0	0	11	2	0	1	0	0	5	1	315
12:15 PM	0	0	163	0	0	163	0	0	157	0	1	157	0	0	0	1	5	1	0	1	0	3	4	4	325
12:30 PM	0	0	147	0	1	147	0	0	144	0	0	144	0	0	0	0	8	0	0	2	0	0	1	2	293
12:45 PM	0	1	174	0	0	175	0	0	159	1	1	160	0	0	0	0	2	0	0	2	0	1	2	3	338
Hourly Total	0	1	645	0	2	646	0	0	611	1	3	612	0	2	0	1	26	3	0	6	0	4	12	10	1271
1:00 PM	0	3	148	0	0	151	0	0	163	1	0	164	0	0	0	0	11	0	0	1	0	1	2	2	317
1:15 PM	0	0	160	1	0	161	0	0	171	0	0	171	0	0	0	0	2	0	0	1	0	0	2	1	333
1:30 PM	0	2	144	0	0	146	0	0	144	0	1	144	0	0	0	0	10	0	0	0	0	2	2	2	292
1:45 PM	0	2	140	1	0	143	0	0	135	0	1	135	0	0	1	0	15	1	0	1	0	2	2	3	282
Hourly Total	0	7	592	2	0	601	0	0	613	1	2	614	0	0	1	0	38	1	0	3	0	5	8	8	1224
Grand Total	0	12	1841	4	4	1857	0	2	1869	7	11	1878	0	3	1	4	99	8	0	10	0	16	26	26	3769
Approach %	0.0	0.6	99.1	0.2	-	-	0.0	0.1	99.5	0.4	-	-	0.0	37.5	12.5	50.0	-	-	0.0	38.5	0.0	61.5	-	-	-
Total %	0.0	0.3	48.8	0.1	-	49.3	0.0	0.1	49.6	0.2	-	49.8	0.0	0.1	0.0	0.1	-	0.2	0.0	0.3	0.0	0.4	-	0.7	-
Lights	0	12	1823	4	-	1839	0	2	1855	7	-	1864	0	3	1	4	-	8	0	10	0	15	-	25	3736
% Lights	-	100.0	99.0	100.0	-	99.0	-	100.0	99.3	100.0	-	99.3	-	100.0	100.0	100.0	-	100.0	-	100.0	-	93.8	-	96.2	99.1
Mediums	0	0	17	0	-	17	0	0	13	0	-	13	0	0	0	0	-	0	0	0	0	1	-	1	31
% Mediums	-	0.0	0.9	0.0	-	0.9	-	0.0	0.7	0.0	-	0.7	-	0.0	0.0	0.0	-	0.0	-	0.0	-	6.3	-	3.8	0.8
Articulated Trucks	0	0	1	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.1	0.0	-	0.1	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	7	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	1.0	-	-	-	-	-	26.9	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	11	-	-	-	-	-	98	-	-	-	-	-	19	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	99.0	-	-	-	-	-	73.1	-	-

Imperial Traffic & Data Collection
www.imperialtdc.com
PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 hfurey@imperialtdc.com

Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648635, -74.347943

Count Name: 25. South Avenue and South Lot
Site Code: 25
Start Date: 06/18/2022



Turning Movement Data Plot

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Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648635, -74.347943

Count Name: 25. South Avenue and South Lot
Site Code: 25
Start Date: 06/18/2022

Turning Movement Peak Hour Data (12:30 PM)

Start Time	South Avenue Eastbound						South Avenue Westbound						Business Driveway Northbound						Parking Driveway Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
12:30 PM	0	0	147	0	1	147	0	0	144	0	0	144	0	0	0	0	8	0	0	2	0	0	1	2	293
12:45 PM	0	1	174	0	0	175	0	0	159	1	1	160	0	0	0	0	2	0	0	2	0	1	2	3	338
1:00 PM	0	3	148	0	0	151	0	0	163	1	0	164	0	0	0	0	11	0	0	1	0	1	2	2	317
1:15 PM	0	0	160	1	0	161	0	0	171	0	0	171	0	0	0	0	2	0	0	1	0	0	2	1	333
Total	0	4	629	1	1	634	0	0	637	2	1	639	0	0	0	0	23	0	0	6	0	2	7	8	1281
Approach %	0.0	0.6	99.2	0.2	-	-	0.0	0.0	99.7	0.3	-	-	0.0	0.0	0.0	0.0	-	-	0.0	75.0	0.0	25.0	-	-	-
Total %	0.0	0.3	49.1	0.1	-	49.5	0.0	0.0	49.7	0.2	-	49.9	0.0	0.0	0.0	0.0	-	0.0	0.0	0.5	0.0	0.2	-	0.6	-
PHF	0.000	0.333	0.904	0.250	-	0.906	0.000	0.000	0.931	0.500	-	0.934	0.000	0.000	0.000	0.000	-	0.000	0.000	0.750	0.000	0.500	-	0.667	0.947
Lights	0	4	623	1	-	628	0	0	632	2	-	634	0	0	0	0	-	0	0	6	0	2	-	8	1270
% Lights	-	100.0	99.0	100.0	-	99.1	-	-	99.2	100.0	-	99.2	-	-	-	-	-	-	-	100.0	-	100.0	-	100.0	99.1
Mediums	0	0	6	0	-	6	0	0	5	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	11
% Mediums	-	0.0	1.0	0.0	-	0.9	-	-	0.8	0.0	-	0.8	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	0.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	-	-	-	-	-	0.0	-	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	14.3	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	23	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	85.7	-	-

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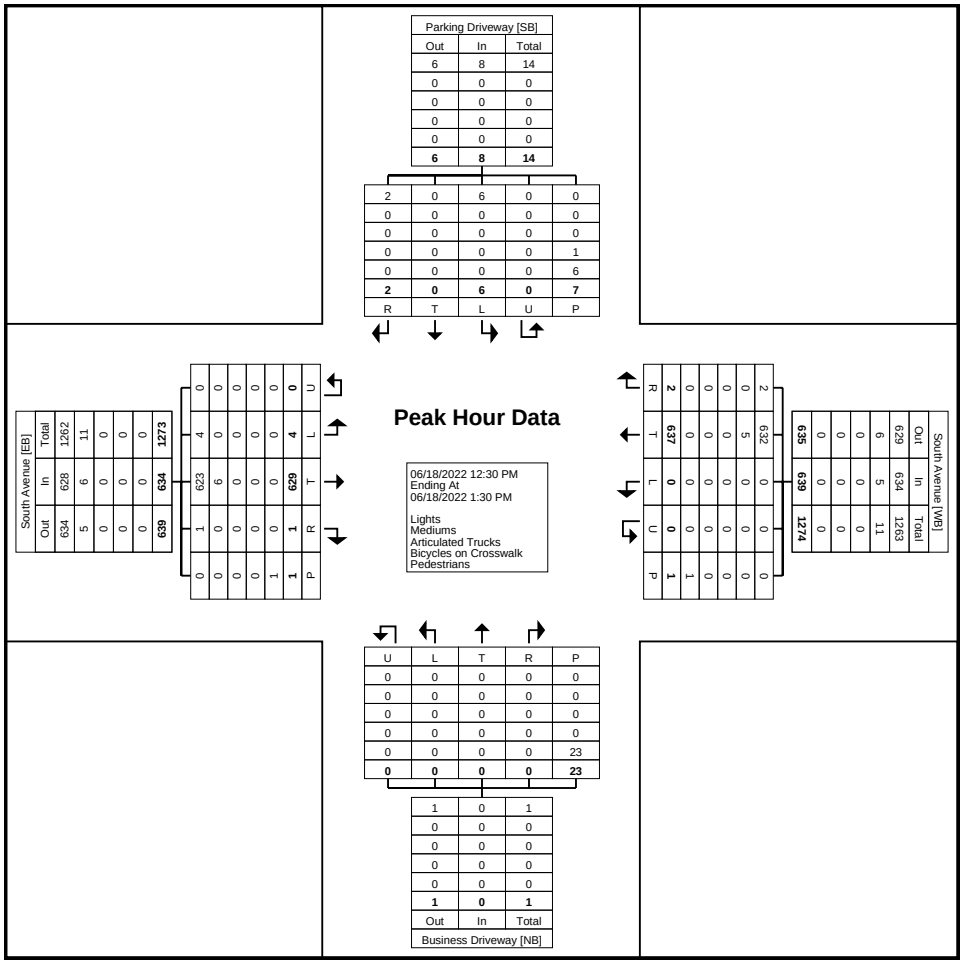
Project: North Ave, South Ave, Westfield NJ
Municipality: Westfield, Union County, NJ
Setup: NR/DR
Location: 40.648635, -74.347943

Count Name: 25. South Avenue and South Lot
Site Code: 25
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (12:30 PM)

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Westfield, NJ
Broad St & South Ave
Saturday, June 18, 2022
Location: 40.648031, -74.352108

Count Name: Broad Street & South Avenue
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	South Ave Eastbound						South Ave Westbound					Broad St Northbound						
	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
11:00 AM	87	16	2	0	0	105	85	92	0	1	177	24	57	14	0	4	95	377
11:15 AM	92	14	0	0	1	106	91	103	0	7	194	25	84	29	0	5	138	438
11:30 AM	91	21	0	0	8	112	70	90	0	25	160	25	56	20	0	5	101	373
11:45 AM	74	21	0	0	1	95	101	96	0	3	197	29	80	25	0	4	134	426
Hourly Total	344	72	2	0	10	418	347	381	0	36	728	103	277	88	0	18	468	1614
12:00 PM	94	10	2	0	1	106	92	81	0	1	173	22	67	27	0	8	116	395
12:15 PM	108	13	1	0	2	122	94	105	0	0	199	25	62	13	0	6	100	421
12:30 PM	93	24	2	0	2	119	98	87	0	5	185	34	54	14	0	1	102	406
12:45 PM	96	19	4	0	0	119	96	118	0	2	214	26	59	8	0	2	93	426
Hourly Total	391	66	9	0	5	466	380	391	0	8	771	107	242	62	0	17	411	1648
1:00 PM	91	8	1	0	0	100	113	90	0	3	203	22	68	23	0	10	113	416
1:15 PM	82	18	1	0	0	101	90	113	0	12	203	31	50	15	0	0	96	400
1:30 PM	62	13	1	0	2	76	96	87	0	3	183	21	68	17	0	2	106	365
1:45 PM	75	13	0	0	2	88	102	91	0	3	193	24	72	24	0	3	120	401
Hourly Total	310	52	3	0	4	365	401	381	0	21	782	98	258	79	0	15	435	1582
2:00 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1046	190	14	0	19	1250	1128	1153	0	65	2281	308	777	229	0	50	1314	4845
Approach %	83.7	15.2	1.1	0.0	-	-	49.5	50.5	0.0	-	-	23.4	59.1	17.4	0.0	-	-	-
Total %	21.6	3.9	0.3	0.0	-	25.8	23.3	23.8	0.0	-	47.1	6.4	16.0	4.7	0.0	-	27.1	-
Lights	1040	190	13	0	-	1243	1116	1140	0	-	2256	306	774	225	0	-	1305	4804
% Lights	99.4	100.0	92.9	-	-	99.4	98.9	98.9	-	-	98.9	99.4	99.6	98.3	-	-	99.3	99.2
Buses	2	0	0	0	-	2	1	4	0	-	5	0	0	1	0	-	1	8
% Buses	0.2	0.0	0.0	-	-	0.2	0.1	0.3	-	-	0.2	0.0	0.0	0.4	-	-	0.1	0.2
Trucks	4	0	1	0	-	5	11	9	0	-	20	2	3	3	0	-	8	33
% Trucks	0.4	0.0	7.1	-	-	0.4	1.0	0.8	-	-	0.9	0.6	0.4	1.3	-	-	0.6	0.7
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	15.8	-	-	-	-	0.0	-	-	-	-	-	2.0	-	-
Pedestrians	-	-	-	-	16	-	-	-	-	65	-	-	-	-	-	49	-	-
% Pedestrians	-	-	-	-	84.2	-	-	-	-	100.0	-	-	-	-	-	98.0	-	-

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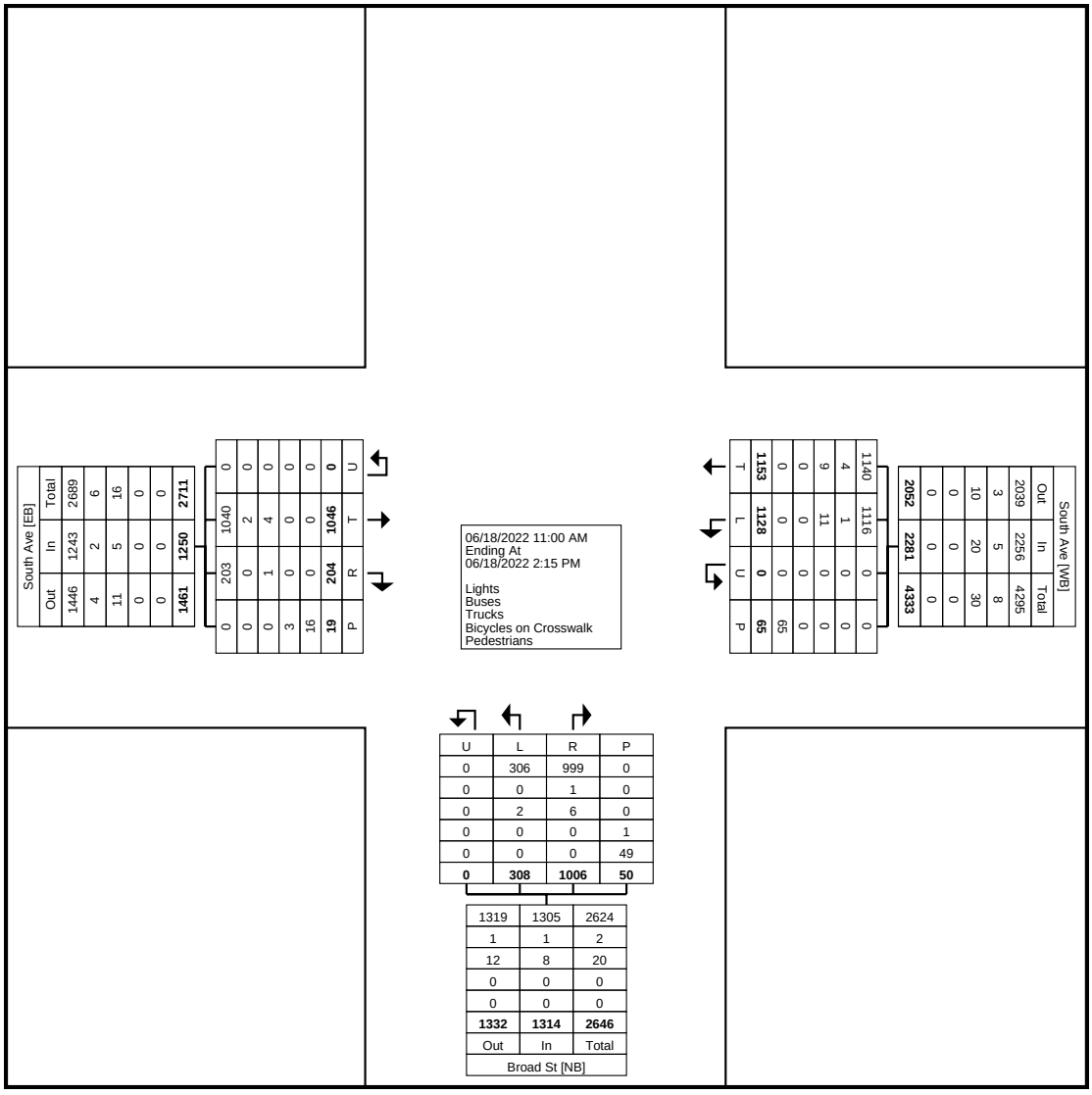
Westfield, NJ
Broad St & South Ave
Saturday, June 18, 2022
Location: 40.648031, -74.352108

Count Name: Broad Street & South Avenue
Site Code:
Start Date: 06/18/2022



Turning Movement Data Plot

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Westfield, NJ
Broad St & South Ave
Saturday, June 18, 2022
Location: 40.648031, -74.352108

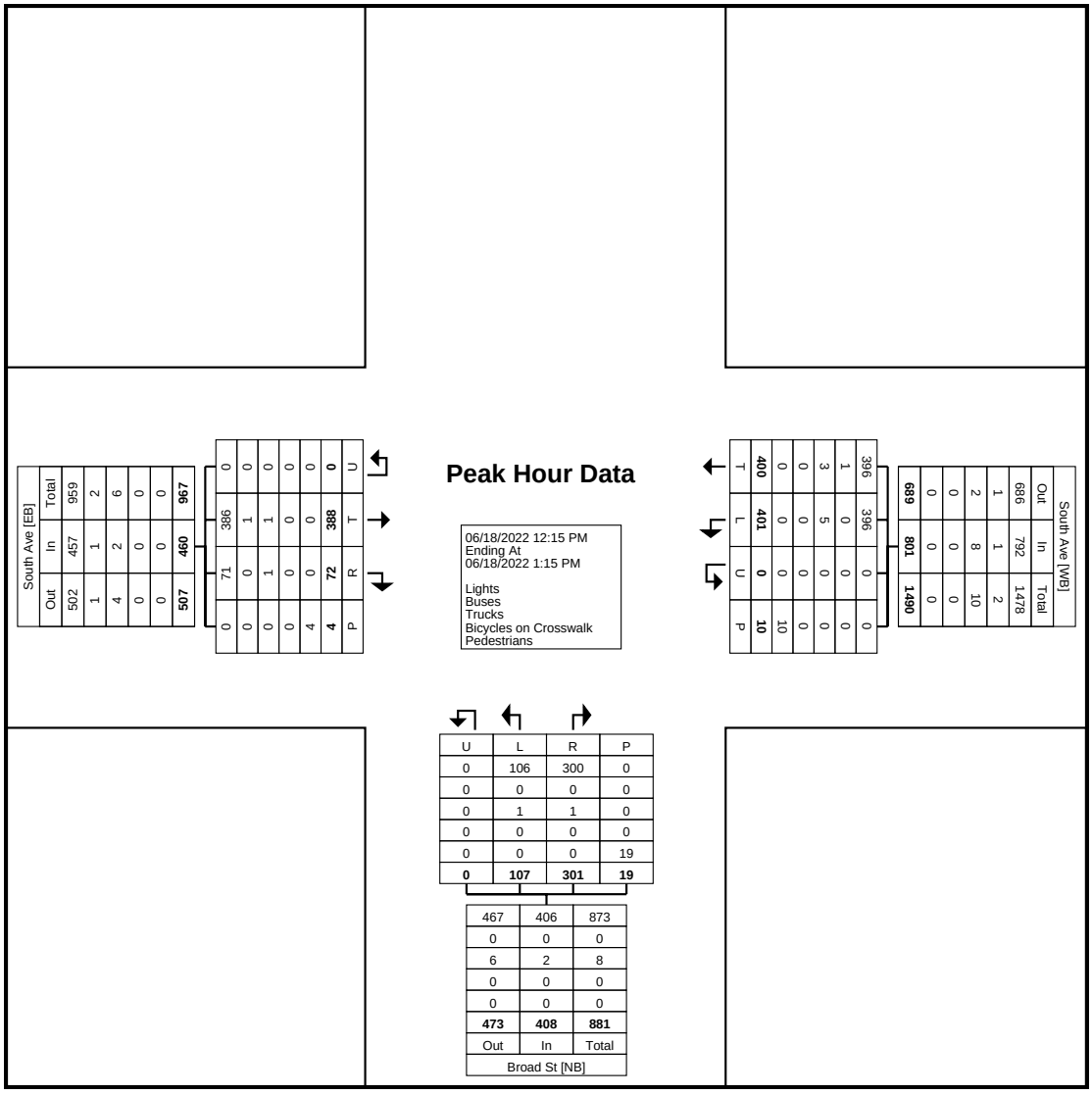
Count Name: Broad Street & South Avenue
Site Code:
Start Date: 06/18/2022

Turning Movement Peak Hour Data (12:15 PM)

Start Time	South Ave Eastbound						South Ave Westbound					Broad St Northbound						
	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
12:15 PM	108	13	1	0	2	122	94	105	0	0	199	25	62	13	0	6	100	421
12:30 PM	93	24	2	0	2	119	98	87	0	5	185	34	54	14	0	1	102	406
12:45 PM	96	19	4	0	0	119	96	118	0	2	214	26	59	8	0	2	93	426
1:00 PM	91	8	1	0	0	100	113	90	0	3	203	22	68	23	0	10	113	416
Total	388	64	8	0	4	460	401	400	0	10	801	107	243	58	0	19	408	1669
Approach %	84.3	13.9	1.7	0.0	-	-	50.1	49.9	0.0	-	-	26.2	59.6	14.2	0.0	-	-	-
Total %	23.2	3.8	0.5	0.0	-	27.6	24.0	24.0	0.0	-	48.0	6.4	14.6	3.5	0.0	-	24.4	-
PHF	0.898	0.667	0.500	0.000	-	0.943	0.887	0.847	0.000	-	0.936	0.787	0.893	0.630	0.000	-	0.903	0.979
Lights	386	64	7	0	-	457	396	396	0	-	792	106	242	58	0	-	406	1655
% Lights	99.5	100.0	87.5	-	-	99.3	98.8	99.0	-	-	98.9	99.1	99.6	100.0	-	-	99.5	99.2
Buses	1	0	0	0	-	1	0	1	0	-	1	0	0	0	0	-	0	2
% Buses	0.3	0.0	0.0	-	-	0.2	0.0	0.3	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.1
Trucks	1	0	1	0	-	2	5	3	0	-	8	1	1	0	0	-	2	12
% Trucks	0.3	0.0	12.5	-	-	0.4	1.2	0.8	-	-	1.0	0.9	0.4	0.0	-	-	0.5	0.7
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	4	-	-	-	-	10	-	-	-	-	-	19	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Westfield, NJ
Broad St & South Ave
Saturday, June 18, 2022
Location: 40.648031, -74.352108

Count Name: Broad Street & South Avenue
Site Code:
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (12:15 PM)

Westfield, NJ
Clark St & Parking Lot (north of Ferris Place)
Saturday, June 18, 2022
Location: 40.650119, -74.352385

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Count Name: Clark Street & Parking Lot (north of Ferris Place)
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	Parking Lot Eastbound						Westbound Approach Westbound						Clark St Northbound						Clark St Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	0	0	0	0	2	0	8	0	0	0	3	8	0	36	0	0	0	36	0	33	0	0	0	33	77
11:15 AM	0	0	0	0	1	0	12	0	3	0	2	15	0	30	0	0	1	30	0	35	0	0	0	35	80
11:30 AM	0	0	0	0	1	0	9	0	1	0	6	10	0	41	0	0	0	41	0	29	0	0	0	29	80
11:45 AM	1	0	1	0	2	2	10	0	1	0	1	11	0	32	0	0	0	32	0	35	1	0	2	36	81
Hourly Total	1	0	1	0	6	2	39	0	5	0	12	44	0	139	0	0	1	139	0	132	1	0	2	133	318
12:00 PM	0	0	0	0	0	0	9	0	6	0	0	15	0	47	0	0	0	47	0	43	0	0	0	43	105
12:15 PM	1	0	0	0	0	1	8	0	1	0	3	9	0	37	0	1	1	38	0	36	0	0	0	36	84
12:30 PM	0	0	0	0	1	0	10	0	2	0	2	12	0	38	0	0	0	38	0	38	0	0	0	38	88
12:45 PM	0	0	0	0	1	0	14	0	2	0	5	16	0	38	0	0	1	38	0	48	0	0	2	48	102
Hourly Total	1	0	0	0	2	1	41	0	11	0	10	52	0	160	0	1	2	161	0	165	0	0	2	165	379
1:00 PM	0	0	1	0	0	1	12	0	1	0	6	13	0	39	0	0	0	39	0	34	0	0	0	34	87
1:15 PM	0	0	0	0	0	0	9	0	2	0	6	11	0	40	0	0	0	40	0	37	1	0	1	38	89
1:30 PM	0	0	0	0	1	0	5	0	3	0	10	8	0	39	0	0	1	39	0	37	0	0	0	37	84
1:45 PM	0	0	0	0	2	0	8	0	6	0	5	14	0	29	0	0	1	29	0	25	0	0	0	25	68
Hourly Total	0	0	1	0	3	1	34	0	12	0	27	46	0	147	0	0	2	147	0	133	1	0	1	134	328
2:00 PM	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
Grand Total	2	0	2	0	11	4	114	0	28	0	49	142	0	446	0	1	5	447	0	430	2	0	5	432	1025
Approach %	50.0	0.0	50.0	0.0	-	-	80.3	0.0	19.7	0.0	-	-	0.0	99.8	0.0	0.2	-	-	0.0	99.5	0.5	0.0	-	-	-
Total %	0.2	0.0	0.2	0.0	-	0.4	11.1	0.0	2.7	0.0	-	13.9	0.0	43.5	0.0	0.1	-	43.6	0.0	42.0	0.2	0.0	-	42.1	-
Lights	2	0	2	0	-	4	113	0	28	0	-	141	0	436	0	1	-	437	0	425	2	0	-	427	1009
% Lights	100.0	-	100.0	-	-	100.0	99.1	-	100.0	-	-	99.3	-	97.8	-	100.0	-	97.8	-	98.8	100.0	-	-	98.8	98.4
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	5	0	0	-	5	0	0	0	0	-	0	5
% Buses	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	-	1.1	-	0.0	-	1.1	-	0.0	0.0	-	-	0.0	0.5
Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	5	0	0	-	5	0	5	0	0	-	5	11
% Trucks	0.0	-	0.0	-	-	0.0	0.9	-	0.0	-	-	0.7	-	1.1	-	0.0	-	1.1	-	1.2	0.0	-	-	1.2	1.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	6.1	-	-	-	-	-	20.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	11	-	-	-	-	-	46	-	-	-	-	-	4	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	93.9	-	-	-	-	-	80.0	-	-	-	-	-	100.0	-	-

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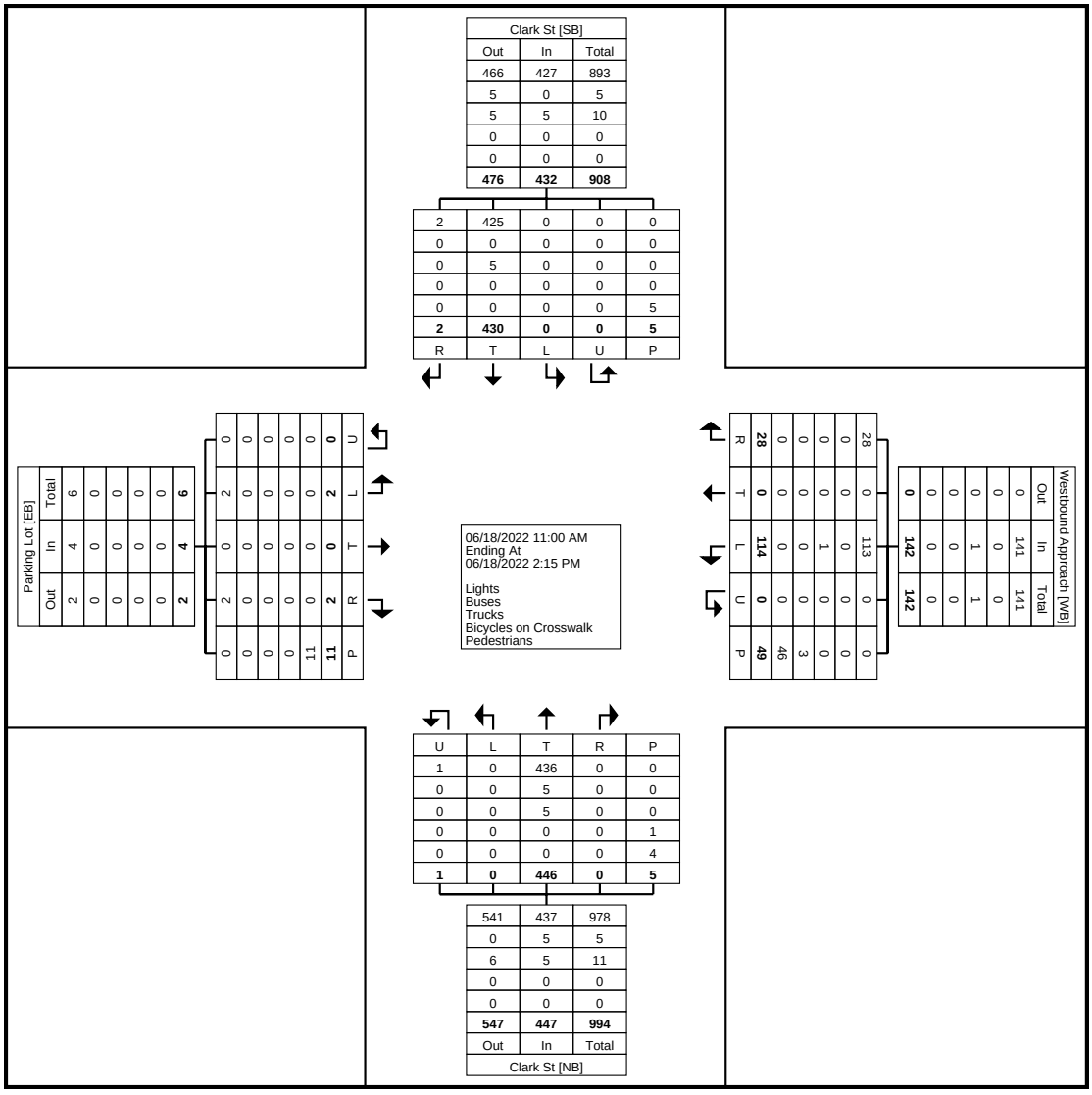

Turning Movement Data Plot

Westfield, NJ
Clark St & Parking Lot (north of Ferris Place)
Saturday, June 18, 2022
Location: 40.650119, -74.352385

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Turning Movement Peak Hour Data (12:00 PM)

Start Time	Parking Lot Eastbound						Westbound Approach Westbound						Clark St Northbound						Clark St Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	0	0	0	0	0	0	9	0	6	0	0	15	0	47	0	0	0	47	0	43	0	0	0	43	105
12:15 PM	1	0	0	0	0	1	8	0	1	0	3	9	0	37	0	1	1	38	0	36	0	0	0	36	84
12:30 PM	0	0	0	0	1	0	10	0	2	0	2	12	0	38	0	0	0	38	0	38	0	0	0	38	88
12:45 PM	0	0	0	0	1	0	14	0	2	0	5	16	0	38	0	0	1	38	0	48	0	0	2	48	102
Total	1	0	0	0	2	1	41	0	11	0	10	52	0	160	0	1	2	161	0	165	0	0	2	165	379
Approach %	100.0	0.0	0.0	0.0	-	-	78.8	0.0	21.2	0.0	-	-	0.0	99.4	0.0	0.6	-	-	0.0	100.0	0.0	0.0	-	-	-
Total %	0.3	0.0	0.0	0.0	-	0.3	10.8	0.0	2.9	0.0	-	13.7	0.0	42.2	0.0	0.3	-	42.5	0.0	43.5	0.0	0.0	-	43.5	-
PHF	0.250	0.000	0.000	0.000	-	0.250	0.732	0.000	0.458	0.000	-	0.813	0.000	0.851	0.000	0.250	-	0.856	0.000	0.859	0.000	0.000	-	0.859	0.902
Lights	1	0	0	0	-	1	41	0	11	0	-	52	0	154	0	1	-	155	0	162	0	0	-	162	370
% Lights	100.0	-	-	-	-	100.0	100.0	-	100.0	-	-	100.0	-	96.3	-	100.0	-	96.3	-	98.2	-	-	-	98.2	97.6
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	5	0	0	-	5	0	0	0	0	-	0	5
% Buses	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	3.1	-	0.0	-	3.1	-	0.0	-	-	-	0.0	1.3
Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	3	0	0	-	3	4
% Trucks	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	-	0.6	-	0.0	-	0.6	-	1.8	-	-	-	1.8	1.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	10.0	-	-	-	-	-	50.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	9	-	-	-	-	-	1	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	90.0	-	-	-	-	-	50.0	-	-	-	-	-	100.0	-	-

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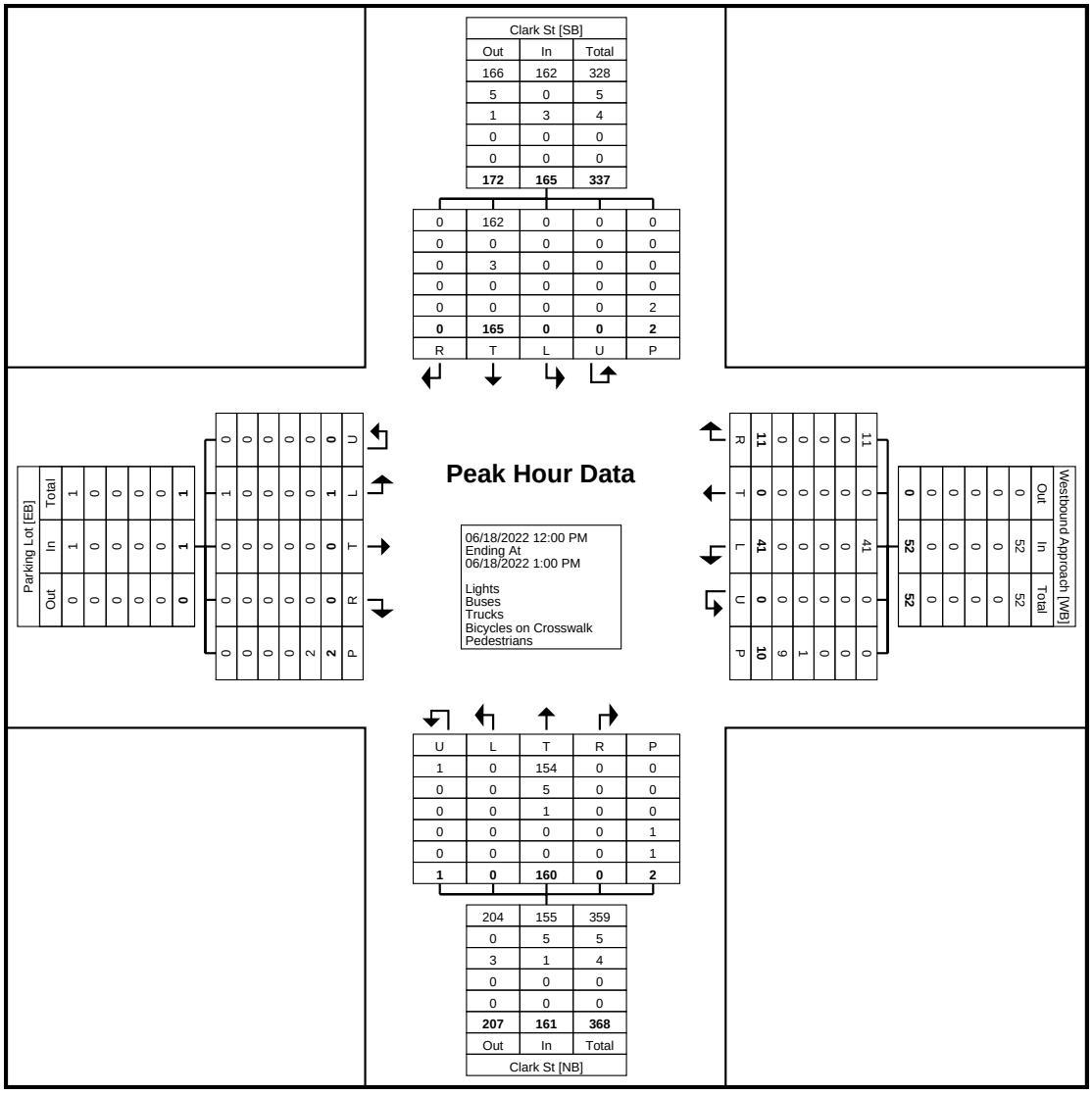

Turning Movement Peak Hour Data Plot (12:00 PM)

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Westfield, NJ
Crossway Place/Edgewood Ave & North Ave
Saturday, June 18, 2022
Location: 40.647913, -74.364487

Count Name: Crossway Place/Edgewood Avenue & North Avenue
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	North Ave Eastbound							North Ave Westbound							Crossway Pl Northbound							Edgewood Ave Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
11:00 AM	2	97	8	3	0	0	110	49	108	3	1	0	0	161	19	6	23	36	0	0	84	2	6	0	1	0	2	9	364
11:15 AM	1	114	20	2	0	0	137	47	121	2	0	0	0	170	15	12	21	34	0	0	82	4	12	0	1	0	1	17	406
11:30 AM	1	107	15	0	0	0	123	49	119	1	1	0	1	170	15	8	15	31	0	0	69	3	11	0	1	0	0	15	377
11:45 AM	2	120	8	1	0	0	131	46	127	3	1	0	3	177	18	8	20	42	0	0	88	3	6	2	2	0	1	13	409
Hourly Total	6	438	51	6	0	0	501	191	475	9	3	0	4	678	67	34	79	143	0	0	323	12	35	2	5	0	4	54	1556
12:00 PM	2	130	15	0	0	0	147	55	129	6	0	0	2	190	20	14	49	23	0	0	106	3	15	0	0	0	0	18	461
12:15 PM	0	108	12	0	0	0	120	49	122	1	0	0	0	172	13	15	47	33	0	0	108	0	10	3	4	0	0	17	417
12:30 PM	3	94	13	0	0	0	110	60	127	5	0	0	0	192	21	12	16	44	0	0	93	1	14	0	3	0	0	18	413
12:45 PM	1	114	8	1	0	0	124	60	119	5	0	0	0	184	12	16	22	35	0	0	85	1	18	1	2	0	0	22	415
Hourly Total	6	446	48	1	0	0	501	224	497	17	0	0	2	738	66	57	134	135	0	0	392	5	57	4	9	0	0	75	1706
1:00 PM	1	113	12	1	0	0	127	50	120	2	0	0	0	172	12	16	16	18	0	0	62	1	15	1	1	0	0	18	379
1:15 PM	2	96	11	0	0	0	109	52	126	3	0	0	0	181	24	12	11	25	0	0	72	3	14	0	2	0	2	19	381
1:30 PM	4	100	12	0	0	0	116	38	114	2	0	0	0	154	24	17	14	28	0	0	83	3	13	1	0	0	1	17	370
1:45 PM	4	100	18	1	0	0	123	41	107	1	0	0	1	149	14	12	10	40	0	0	76	5	8	0	1	0	1	14	362
Hourly Total	11	409	53	2	0	0	475	181	467	8	0	0	1	656	74	57	51	111	0	0	293	12	50	2	4	0	4	68	1492
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
Grand Total	23	1293	152	9	0	0	1477	596	1439	34	3	0	7	2072	207	148	265	389	0	0	1009	29	142	8	18	0	8	197	4755
Approach %	1.6	87.5	10.3	0.6	0.0	-	-	28.8	69.4	1.6	0.1	0.0	-	-	20.5	14.7	26.3	38.6	0.0	-	-	14.7	72.1	4.1	9.1	0.0	-	-	-
Total %	0.5	27.2	3.2	0.2	0.0	-	31.1	12.5	30.3	0.7	0.1	0.0	-	43.6	4.4	3.1	5.6	8.2	0.0	-	21.2	0.6	3.0	0.2	0.4	0.0	-	4.1	-
Lights	23	1281	152	9	0	-	1465	590	1418	33	3	0	-	2044	204	148	260	381	0	-	993	29	141	8	17	0	-	195	4697
% Lights	100.0	99.1	100.0	100.0	-	-	99.2	99.0	98.5	97.1	100.0	-	-	98.6	98.6	100.0	98.1	97.9	-	-	98.4	100.0	99.3	100.0	94.4	-	-	99.0	98.8
Buses	0	2	0	0	0	-	2	0	1	0	0	0	-	1	0	0	1	0	0	-	1	0	0	0	0	0	-	0	4
% Buses	0.0	0.2	0.0	0.0	-	-	0.1	0.0	0.1	0.0	0.0	-	-	0.0	0.0	0.0	0.4	0.0	-	-	0.1	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Trucks	0	10	0	0	0	-	10	6	20	1	0	0	-	27	3	0	4	8	0	-	15	0	1	0	1	0	-	2	54
% Trucks	0.0	0.8	0.0	0.0	-	-	0.7	1.0	1.4	2.9	0.0	-	-	1.3	1.4	0.0	1.5	2.1	-	-	1.5	0.0	0.7	0.0	5.6	-	-	1.0	1.1
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	5	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	62.5	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	7	-	-	-	-	-	-	0	-	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	37.5	-	-

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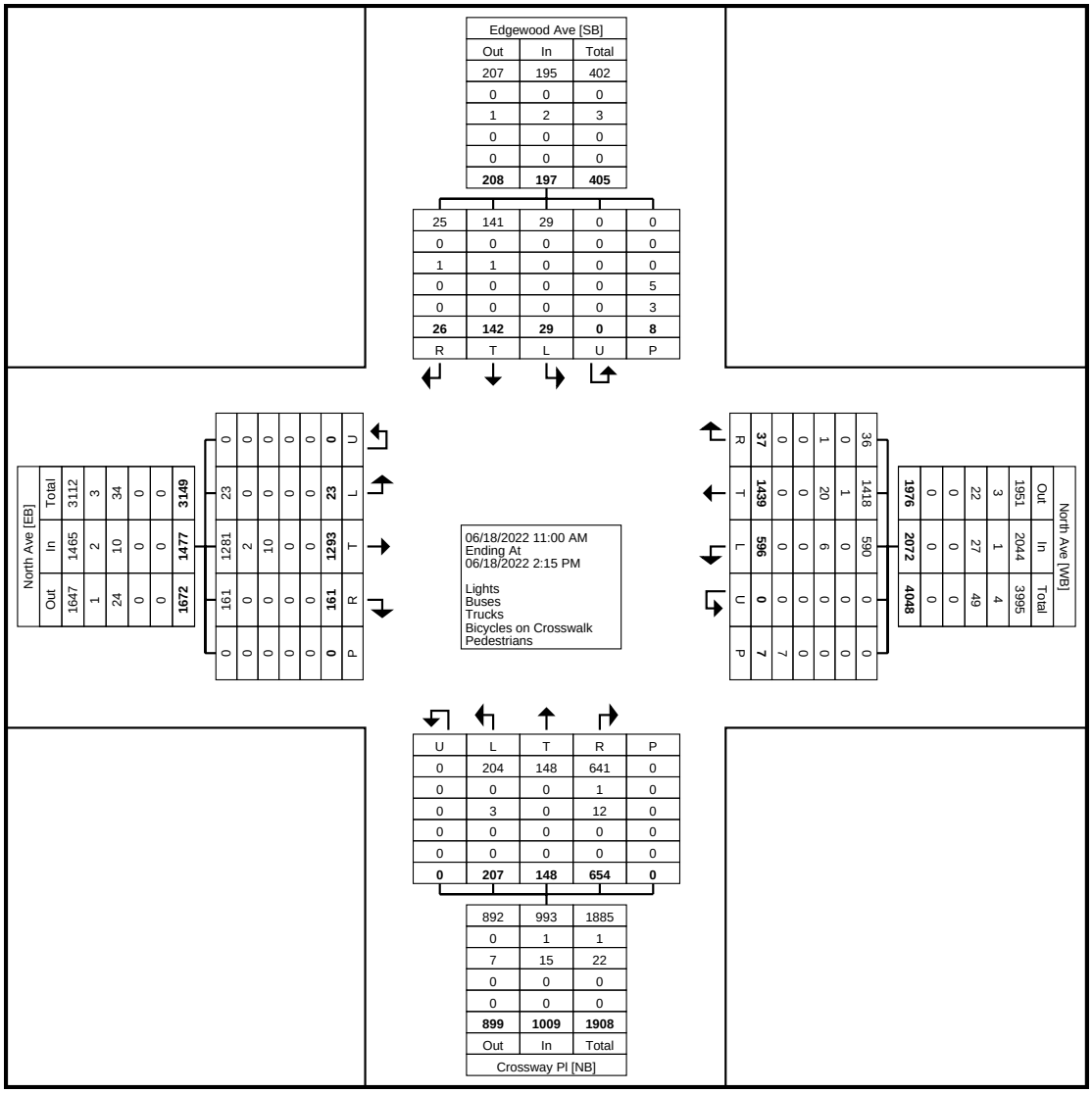

Turning Movement Data Plot

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Turning Movement Peak Hour Data (12:00 PM)

Start Time	North Ave Eastbound							North Ave Westbound							Crossway Pl Northbound							Edgewood Ave Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
12:00 PM	2	130	15	0	0	0	147	55	129	6	0	0	2	190	20	14	49	23	0	0	106	3	15	0	0	0	0	18	461
12:15 PM	0	108	12	0	0	0	120	49	122	1	0	0	0	172	13	15	47	33	0	0	108	0	10	3	4	0	0	17	417
12:30 PM	3	94	13	0	0	0	110	60	127	5	0	0	0	192	21	12	16	44	0	0	93	1	14	0	3	0	0	18	413
12:45 PM	1	114	8	1	0	0	124	60	119	5	0	0	0	184	12	16	22	35	0	0	85	1	18	1	2	0	0	22	415
Total	6	446	48	1	0	0	501	224	497	17	0	0	2	738	66	57	134	135	0	0	392	5	57	4	9	0	0	75	1706
Approach %	1.2	89.0	9.6	0.2	0.0	-	-	30.4	67.3	2.3	0.0	0.0	-	-	16.8	14.5	34.2	34.4	0.0	-	-	6.7	76.0	5.3	12.0	0.0	-	-	-
Total %	0.4	26.1	2.8	0.1	0.0	-	29.4	13.1	29.1	1.0	0.0	0.0	-	43.3	3.9	3.3	7.9	7.9	0.0	-	23.0	0.3	3.3	0.2	0.5	0.0	-	4.4	-
PHF	0.500	0.858	0.800	0.250	0.000	-	0.852	0.933	0.963	0.708	0.000	0.000	-	0.961	0.786	0.891	0.684	0.767	0.000	-	0.907	0.417	0.792	0.333	0.563	0.000	-	0.852	0.925
Lights	6	440	48	1	0	-	495	222	482	17	0	0	-	721	66	57	132	132	0	-	387	5	57	4	9	0	-	75	1678
% Lights	100.0	98.7	100.0	100.0	-	-	98.8	99.1	97.0	100.0	-	-	-	97.7	100.0	100.0	98.5	97.8	-	-	98.7	100.0	100.0	100.0	100.0	-	-	100.0	98.4
Buses	0	1	0	0	0	-	1	0	1	0	0	0	-	1	0	0	1	0	0	-	1	0	0	0	0	0	-	0	3
% Buses	0.0	0.2	0.0	0.0	-	-	0.2	0.0	0.2	0.0	-	-	-	0.1	0.0	0.0	0.7	0.0	-	-	0.3	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Trucks	0	5	0	0	0	-	5	2	14	0	0	0	-	16	0	0	1	3	0	-	4	0	0	0	0	0	-	0	25
% Trucks	0.0	1.1	0.0	0.0	-	-	1.0	0.9	2.8	0.0	-	-	-	2.2	0.0	0.0	0.7	2.2	-	-	1.0	0.0	0.0	0.0	0.0	-	-	0.0	1.5
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	2	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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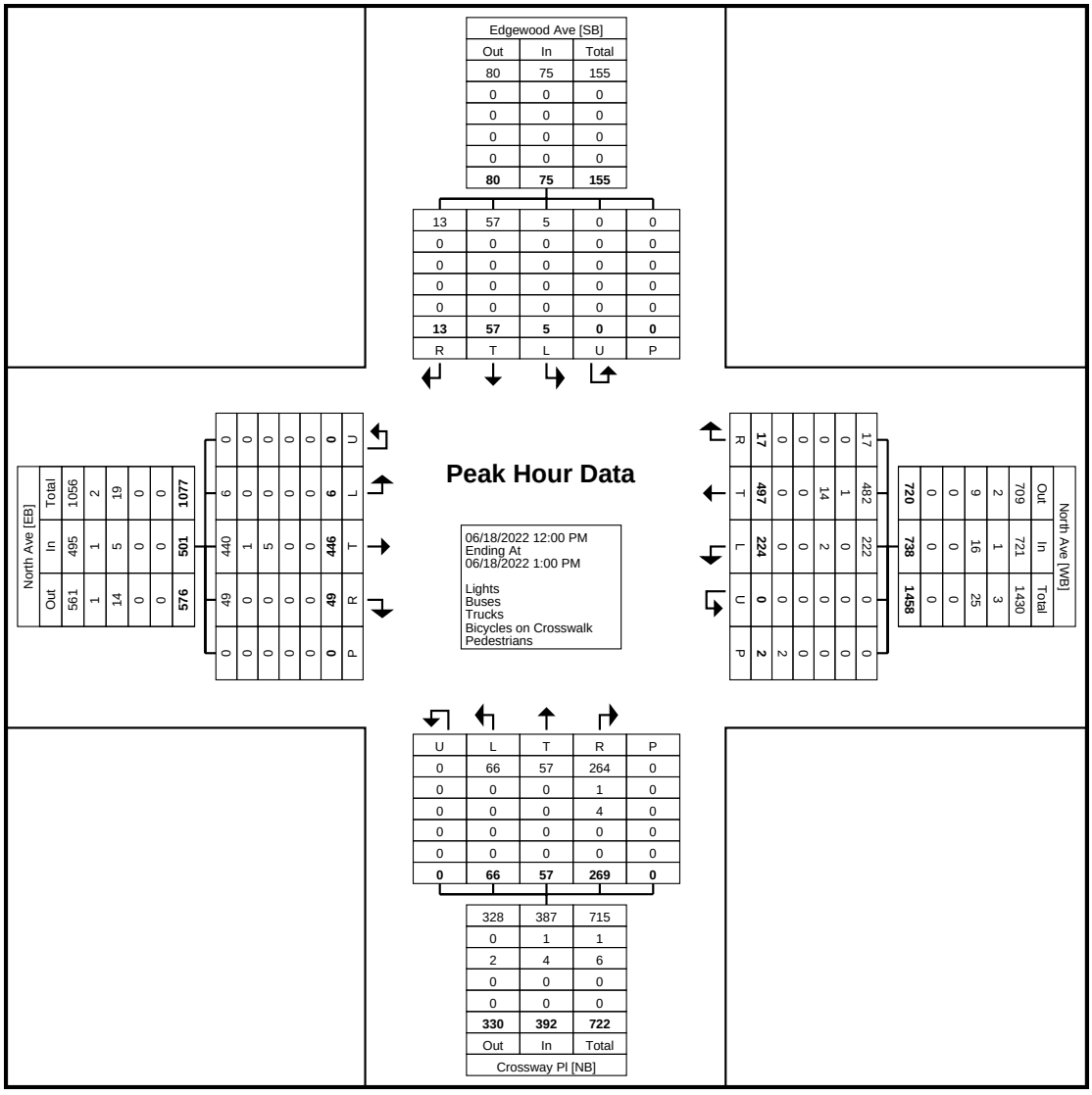

Turning Movement Peak Hour Data Plot (12:00 PM)

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Westfield, NJ
Crossway Place/Scotch Plains & South Ave
Saturday, June 18, 2022
Location: 40.646411, -74.364115

Count Name: Crossway Place/Scotch Plains Avenue & South Avenue
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	South Ave Eastbound							South Ave Westbound							Scotch Plains Ave Northbound							Crossway Pl Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
11:00 AM	40	86	8	4	0	0	138	4	97	10	0	0	1	111	8	20	9	0	0	2	37	8	19	17	12	0	5	56	342
11:15 AM	38	91	3	1	0	0	133	3	80	14	0	0	2	97	9	28	1	1	0	3	39	14	34	17	12	0	5	77	346
11:30 AM	31	77	6	5	0	0	119	4	82	9	0	0	4	95	13	24	6	1	0	3	44	13	27	17	16	0	2	73	331
11:45 AM	36	58	6	2	0	0	102	1	88	13	0	0	1	102	11	35	8	2	0	3	56	9	28	17	11	0	1	65	325
Hourly Total	145	312	23	12	0	0	492	12	347	46	0	0	8	405	41	107	24	4	0	11	176	44	108	68	51	0	13	271	1344
12:00 PM	39	102	4	2	0	1	147	7	74	18	0	0	2	99	20	43	4	0	0	1	67	17	35	18	11	0	5	81	394
12:15 PM	41	88	10	1	0	1	140	6	92	21	0	0	1	119	10	42	3	0	0	0	55	13	28	21	2	0	0	64	378
12:30 PM	35	90	7	3	0	1	135	6	80	15	0	0	0	101	6	36	3	0	0	0	45	15	30	21	10	0	0	76	357
12:45 PM	30	80	13	4	0	0	127	6	90	18	1	0	0	115	6	33	7	2	0	1	48	16	39	23	9	0	0	87	377
Hourly Total	145	360	34	10	0	3	549	25	336	72	1	0	3	434	42	154	17	2	0	2	215	61	132	83	32	0	5	308	1506
1:00 PM	22	86	7	4	0	1	119	5	87	10	1	0	0	103	11	26	3	2	0	0	42	15	27	28	9	0	1	79	343
1:15 PM	22	68	9	1	0	3	100	4	91	20	0	0	0	115	5	24	0	3	0	1	32	11	38	16	6	0	1	71	318
1:30 PM	23	58	5	3	0	4	89	8	84	14	0	0	2	106	7	32	3	2	0	2	44	10	20	16	10	0	0	56	295
1:45 PM	29	71	5	4	0	1	109	1	73	11	0	0	3	85	4	34	3	3	0	0	44	13	32	15	7	0	0	67	305
Hourly Total	96	283	26	12	0	9	417	18	335	55	1	0	5	409	27	116	9	10	0	3	162	49	117	75	32	0	2	273	1261
2:00 PM	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	0	0	0
Grand Total	386	955	83	34	0	12	1458	55	1018	173	2	0	16	1248	110	377	50	16	0	16	553	154	357	226	115	0	20	852	4111
Approach %	26.5	65.5	5.7	2.3	0.0	-	-	4.4	81.6	13.9	0.2	0.0	-	-	19.9	68.2	9.0	2.9	0.0	-	-	18.1	41.9	26.5	13.5	0.0	-	-	-
Total %	9.4	23.2	2.0	0.8	0.0	-	35.5	1.3	24.8	4.2	0.0	0.0	-	30.4	2.7	9.2	1.2	0.4	0.0	-	13.5	3.7	8.7	5.5	2.8	0.0	-	20.7	-
Lights	382	947	83	34	0	-	1446	53	1006	170	2	0	-	1231	109	369	49	15	0	-	542	153	356	226	113	0	-	848	4067
% Lights	99.0	99.2	100.0	100.0	-	-	99.2	96.4	98.8	98.3	100.0	-	-	98.6	99.1	97.9	98.0	93.8	-	-	98.0	99.4	99.7	100.0	98.3	-	-	99.5	98.9
Buses	0	2	0	0	0	-	2	0	4	0	0	0	-	4	0	2	0	0	0	-	2	0	0	0	0	0	-	0	8
% Buses	0.0	0.2	0.0	0.0	-	-	0.1	0.0	0.4	0.0	0.0	-	-	0.3	0.0	0.5	0.0	0.0	-	-	0.4	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Trucks	4	6	0	0	0	-	10	2	8	3	0	0	-	13	1	6	1	1	0	-	9	1	1	0	2	0	-	4	36
% Trucks	1.0	0.6	0.0	0.0	-	-	0.7	3.6	0.8	1.7	0.0	-	-	1.0	0.9	1.6	2.0	6.3	-	-	1.6	0.6	0.3	0.0	1.7	-	-	0.5	0.9
Bicycles on Crosswalk	-	-	-	-	-	6	-	-	-	-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	50.0	-	-	-	-	-	-	18.8	-	-	-	-	-	-	6.3	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	6	-	-	-	-	-	-	13	-	-	-	-	-	-	15	-	-	-	-	-	-	20	-	-
% Pedestrians	-	-	-	-	-	50.0	-	-	-	-	-	-	81.3	-	-	-	-	-	-	93.8	-	-	-	-	-	-	100.0	-	-

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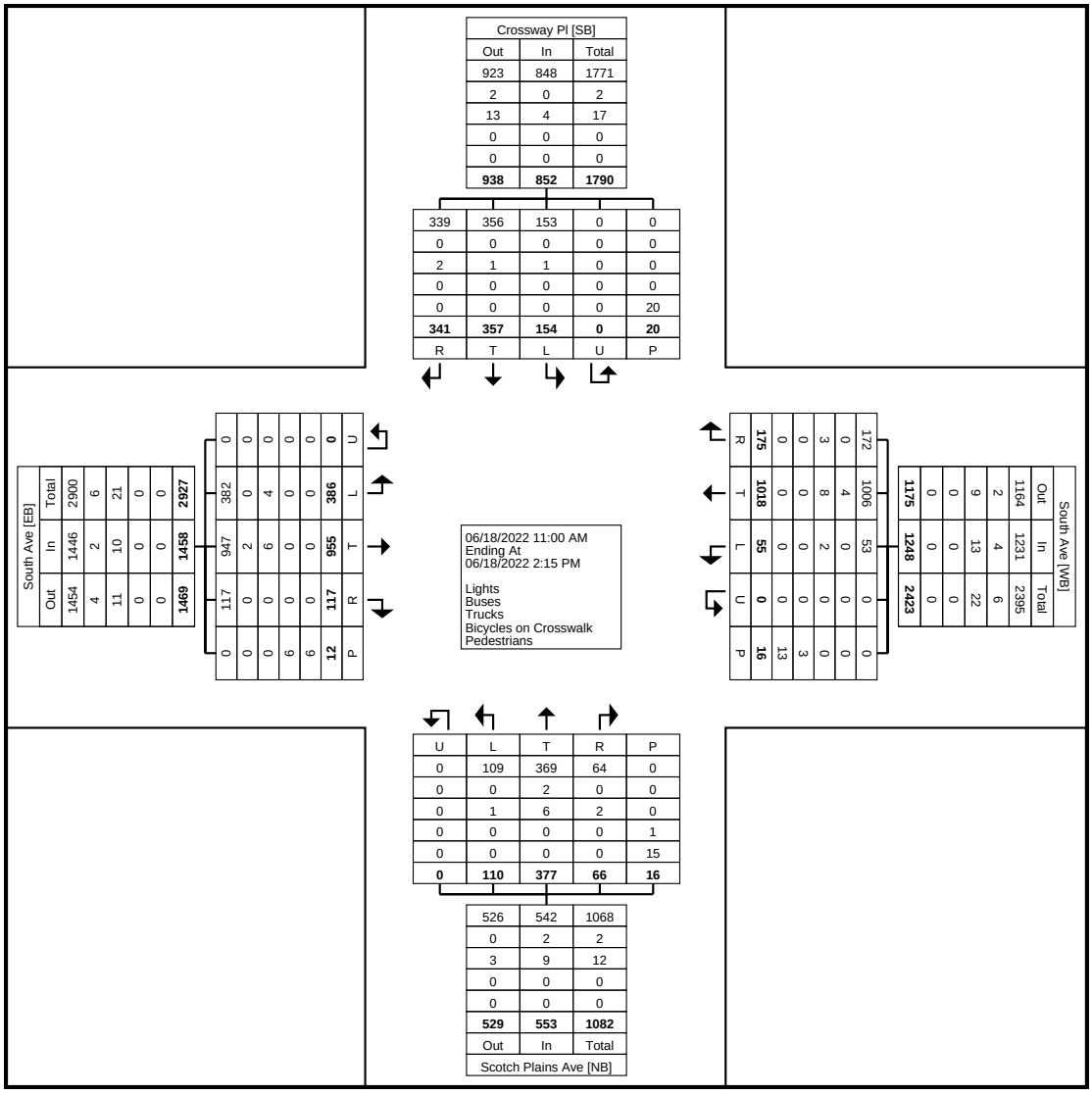

Turning Movement Data Plot

Westfield, NJ
Crossway Place/Scotch Plains & South Ave
Saturday, June 18, 2022
Location: 40.646411, -74.364115

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Count Name: Crossway Place/Scotch Plains Avenue & South Avenue
Site Code:
Start Date: 06/18/2022

Turning Movement Peak Hour Data (12:00 PM)

Start Time	South Ave Eastbound							South Ave Westbound							Scotch Plains Ave Northbound							Crossway Pl Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
12:00 PM	39	102	4	2	0	1	147	7	74	18	0	0	2	99	20	43	4	0	0	1	67	17	35	18	11	0	5	81	394
12:15 PM	41	88	10	1	0	1	140	6	92	21	0	0	1	119	10	42	3	0	0	0	55	13	28	21	2	0	0	64	378
12:30 PM	35	90	7	3	0	1	135	6	80	15	0	0	0	101	6	36	3	0	0	0	45	15	30	21	10	0	0	76	357
12:45 PM	30	80	13	4	0	0	127	6	90	18	1	0	0	115	6	33	7	2	0	1	48	16	39	23	9	0	0	87	377
Total	145	360	34	10	0	3	549	25	336	72	1	0	3	434	42	154	17	2	0	2	215	61	132	83	32	0	5	308	1506
Approach %	26.4	65.6	6.2	1.8	0.0	-	-	5.8	77.4	16.6	0.2	0.0	-	-	19.5	71.6	7.9	0.9	0.0	-	-	19.8	42.9	26.9	10.4	0.0	-	-	-
Total %	9.6	23.9	2.3	0.7	0.0	-	36.5	1.7	22.3	4.8	0.1	0.0	-	28.8	2.8	10.2	1.1	0.1	0.0	-	14.3	4.1	8.8	5.5	2.1	0.0	-	20.5	-
PHF	0.884	0.882	0.654	0.625	0.000	-	0.934	0.893	0.913	0.857	0.250	0.000	-	0.912	0.525	0.895	0.607	0.250	0.000	-	0.802	0.897	0.846	0.902	0.727	0.000	-	0.885	0.956
Lights	143	358	34	10	0	-	545	24	333	71	1	0	-	429	42	151	16	2	0	-	211	60	132	83	32	0	-	307	1492
% Lights	98.6	99.4	100.0	100.0	-	-	99.3	96.0	99.1	98.6	100.0	-	-	98.8	100.0	98.1	94.1	100.0	-	-	98.1	98.4	100.0	100.0	100.0	-	-	99.7	99.1
Buses	0	1	0	0	0	-	1	0	0	0	0	0	-	0	0	1	0	0	0	-	1	0	0	0	0	0	-	0	2
% Buses	0.0	0.3	0.0	0.0	-	-	0.2	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.6	0.0	0.0	-	-	0.5	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Trucks	2	1	0	0	0	-	3	1	3	1	0	0	-	5	0	2	1	0	0	-	3	1	0	0	0	0	-	1	12
% Trucks	1.4	0.3	0.0	0.0	-	-	0.5	4.0	0.9	1.4	0.0	-	-	1.2	0.0	1.3	5.9	0.0	-	-	1.4	1.6	0.0	0.0	0.0	-	-	0.3	0.8
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	33.3	-	-	-	-	-	-	66.7	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	-	66.7	-	-	-	-	-	-	33.3	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-

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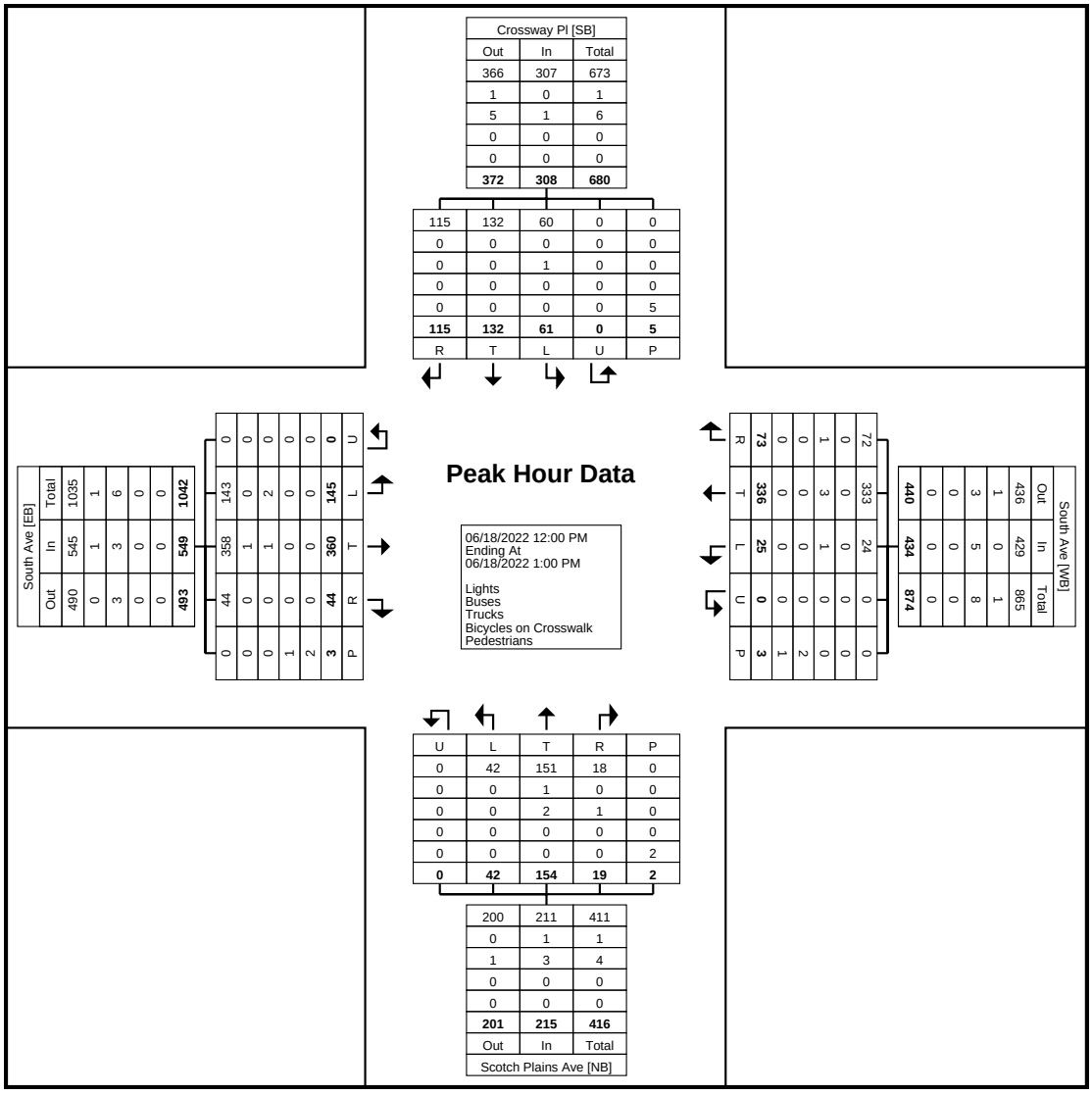


Turning Movement Peak Hour Data Plot (12:00 PM)

Ferris Place & Driveway In & Out - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 964862, Location: 40.650247, -74.351845

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

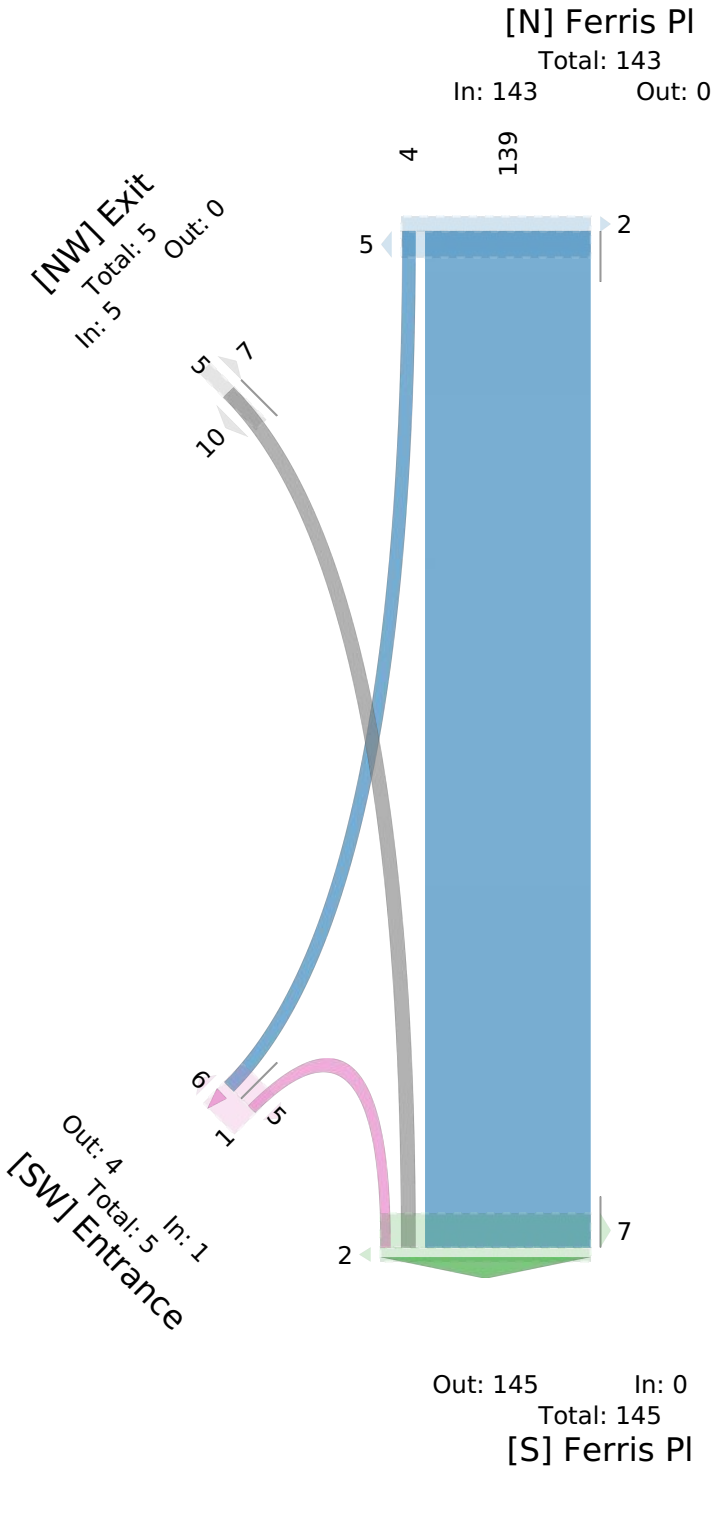
Leg	Ferris Pl					Ferris Pl		Entrance					Exit					
Direction	Southbound					Northbound		Northeastbound					Southeastbound					
Time	HR	BR	T	**App**	Ped*	**App**	Ped*	HR	L	U	**App**	Ped*	R	BR	U	**App**	Ped*	**Int**
2022-06-18 11:00AM	0	1	8	**9**	1	**0**	1	0	0	0	**0**	0	0	0	0	**0**	1	**9**
11:15AM	0	0	13	**13**	0	**0**	0	0	0	0	**0**	0	0	2	0	**2**	1	**15**
11:30AM	0	0	10	**10**	0	**0**	0	0	0	0	**0**	2	0	0	0	**0**	2	**10**
11:45AM	0	1	11	**12**	3	**0**	0	0	0	0	**0**	0	0	0	0	**0**	3	**12**
Hourly Total	0	2	42	**44**	4	**0**	1	0	0	0	**0**	2	0	2	0	**2**	7	**46**
12:00PM	0	1	16	**17**	0	**0**	2	0	0	0	**0**	2	0	0	0	**0**	0	**17**
12:15PM	0	0	10	**10**	0	**0**	1	0	0	0	**0**	1	0	0	0	**0**	0	**10**
12:30PM	0	0	13	**13**	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**13**
12:45PM	0	0	15	**15**	0	**0**	0	0	0	0	**0**	3	0	0	0	**0**	2	**15**
Hourly Total	0	1	54	**55**	0	**0**	3	0	0	0	**0**	6	0	0	0	**0**	2	**55**
1:00PM	0	1	12	**13**	0	**0**	0	0	0	0	**0**	0	0	1	0	**1**	2	**14**
1:15PM	0	0	10	**10**	3	**0**	0	0	0	0	**0**	1	0	1	0	**1**	3	**11**
1:30PM	0	0	8	**8**	0	**0**	4	0	0	0	**0**	0	0	0	0	**0**	1	**8**
1:45PM	0	0	12	**12**	0	**0**	1	1	0	0	**1**	2	0	1	0	**1**	2	**14**
Hourly Total	0	1	42	**43**	3	**0**	5	1	0	0	**1**	3	0	3	0	**3**	8	**47**
2:00PM	0	0	1	**1**	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**1**
Hourly Total	0	0	1	**1**	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**1**
Total	0	4	139	**143**	7	**0**	9	1	0	0	**1**	11	0	5	0	**5**	17	**149**
% Approach	0%	2.8%	97.2%	**-**	-	**-**	-	100%	0%	0%	**-**	-	0%	100%	0%	**-**	-	-
% Total	0%	2.7%	93.3%	**96.0%**	-	**0%**	-	0.7%	0%	0%	**0.7%**	-	0%	3.4%	0%	**3.4%**	-	-
Lights	0	4	138	**142**	-	**0**	-	1	0	0	**1**	-	0	5	0	**5**	-	148
% Lights	0%	100%	99.3%	**99.3%**	-	**-**	-	100%	0%	0%	**100%**	-	0%	100%	0%	**100%**	-	99.3%
Articulated Trucks and Single-Unit Trucks	0	0	1	**1**	-	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	1
% Articulated Trucks and Single-Unit Trucks	0%	0%	0.7%	**0.7%**	-	**-**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0.7%
Buses	0	0	0	**0**	-	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Buses	0%	0%	0%	**0%**	-	**-**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	7	-	9	-	-	-	-	11	-	-	-	-	17	
% Pedestrians	-	-	-	-	100%	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BR: Bear right, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Ferris Place & Driveway In & Out - TMC

Sat Jun 18, 2022
Full Length (11 AM-2 PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 964862, Location: 40.650247, -74.351845

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US



Ferris Place & Driveway In & Out - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 964862, Location: 40.650247, -74.351845

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg / Direction	Ferris Pl Southbound					Ferris Pl Northbound		Entrance Northeastbound					Exit Southeastbound					
Time	HR	BR	T	**App**	Ped*	**App**	Ped*	HR	L	U	**App**	Ped*	R	BR	U	**App**	Ped*	**Int**
2022-06-18 12:00PM	0	1	16	**17**	0	**0**	2	0	0	0	**0**	2	0	0	0	**0**	0	**17**
12:15PM	0	0	10	**10**	0	**0**	1	0	0	0	**0**	1	0	0	0	**0**	0	**10**
12:30PM	0	0	13	**13**	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	**13**
12:45PM	0	0	15	**15**	0	**0**	0	0	0	0	**0**	3	0	0	0	**0**	2	**15**
Total	0	1	54	**55**	0	**0**	3	0	0	0	**0**	6	0	0	0	**0**	2	**55**
% Approach	0%	1.8%	98.2%	**-**	-	**-**	-	0%	0%	0%	**-**	-	0%	0%	0%	**-**	-	-
% Total	0%	1.8%	98.2%	**100%**	-	**0%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	-
PHF	-	0.250	0.844	**0.809**	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	0.809
Lights	0	1	54	**55**	-	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	55
% Lights	0%	100%	100%	**100%**	-	**-**	-	0%	0%	0%	**-**	-	0%	0%	0%	**-**	-	100%
Articulated Trucks and Single-Unit Trucks	0	0	0	**0**	-	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Articulated Trucks and Single-Unit Trucks	0%	0%	0%	**0%**	-	**-**	-	0%	0%	0%	**-**	-	0%	0%	0%	**-**	-	0%
Buses	0	0	0	**0**	-	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Buses	0%	0%	0%	**0%**	-	**-**	-	0%	0%	0%	**-**	-	0%	0%	0%	**-**	-	0%
Pedestrians	-	-	-	-	0	-	3	-	-	-	-	6	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BR: Bear right, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Ferris Place & Driveway In & Out - TMC

Sat Jun 18, 2022
Midday Peak (WKND) (12 PM - 1 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 964862, Location: 40.650247, -74.351845

Provided by: Tri-State Traffic Data, Inc.
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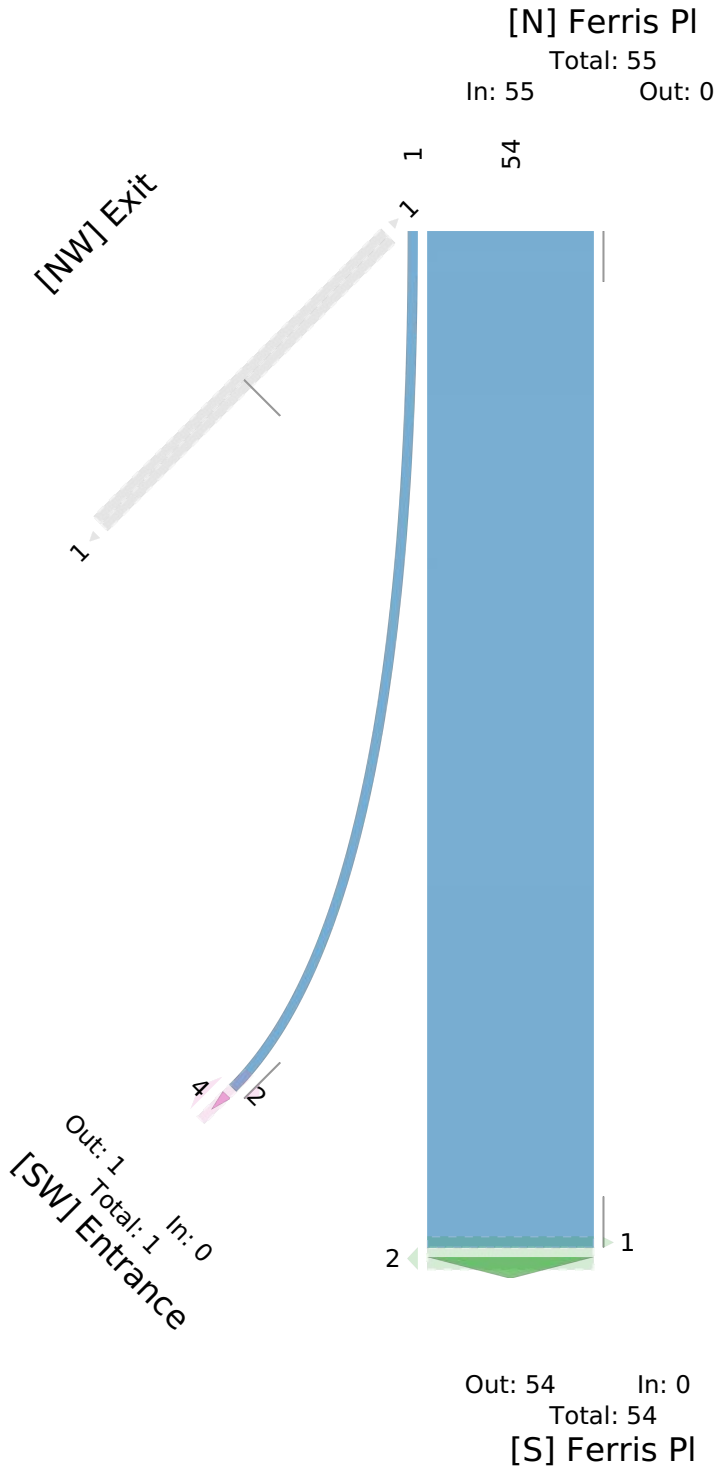
Coatesville, PA, 19320, US



Ferris Place & Driveway In & Out - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 964862, Location: 40.650247, -74.351845

Provided by: Tri-State Traffic Data, Inc.
184 Baker Road,
Coatesville, PA, 19320, US

Leg	Ferris Pl					Ferris Pl		Entrance					Exit					
Direction	Southbound					Northbound		Northeastbound					Southeastbound					
Time	HR	BR	T	**App**	Ped*	**App**	Ped*	HR	L	U	**App**	Ped*	R	BR	U	**App**	Ped*	**Int**
2022-06-18 1:00PM	0	1	12	**13**	0	**0**	0	0	0	0	**0**	0	0	1	0	**1**	2	**14**
1:15PM	0	0	10	**10**	3	**0**	0	0	0	0	**0**	1	0	1	0	**1**	3	**11**
1:30PM	0	0	8	**8**	0	**0**	4	0	0	0	**0**	0	0	0	0	**0**	1	**8**
1:45PM	0	0	12	**12**	0	**0**	1	1	0	0	**1**	2	0	1	0	**1**	2	**14**
Total	0	1	42	**43**	3	**0**	5	1	0	0	**1**	3	0	3	0	**3**	8	**47**
% Approach	0%	2.3%	97.7%	**-**	-	**-**	-	100%	0%	0%	**-**	-	0%	100%	0%	**-**	-	**-**
% Total	0%	2.1%	89.4%	**91.5%**	-	**0%**	-	2.1%	0%	0%	**2.1%**	-	0%	6.4%	0%	**6.4%**	-	**-**
PHF	-	0.250	0.875	**0.827**	-	**-**	-	0.250	-	-	**0.250**	-	-	0.750	-	**0.750**	-	0.839
Lights	0	1	41	**42**	-	**0**	-	1	0	0	**1**	-	0	3	0	**3**	-	46
% Lights	0%	100%	97.6%	**97.7%**	-	**-**	-	100%	0%	0%	**100%**	-	0%	100%	0%	**100%**	-	97.9%
Articulated Trucks and Single-Unit Trucks	0	0	1	**1**	-	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	1
% Articulated Trucks and Single-Unit Trucks	0%	0%	2.4%	**2.3%**	-	**-**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	2.1%
Buses	0	0	0	**0**	-	**0**	-	0	0	0	**0**	-	0	0	0	**0**	-	0
% Buses	0%	0%	0%	**0%**	-	**-**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0%
Pedestrians	-	-	-	-	3	-	5	-	-	-	-	3	-	-	-	-	8	
% Pedestrians	-	-	-	-	100%	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. BR: Bear right, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

Ferris Place & Driveway In & Out - TMC

Sat Jun 18, 2022
PM Peak (WKND) (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 964862, Location: 40.650247, -74.351845

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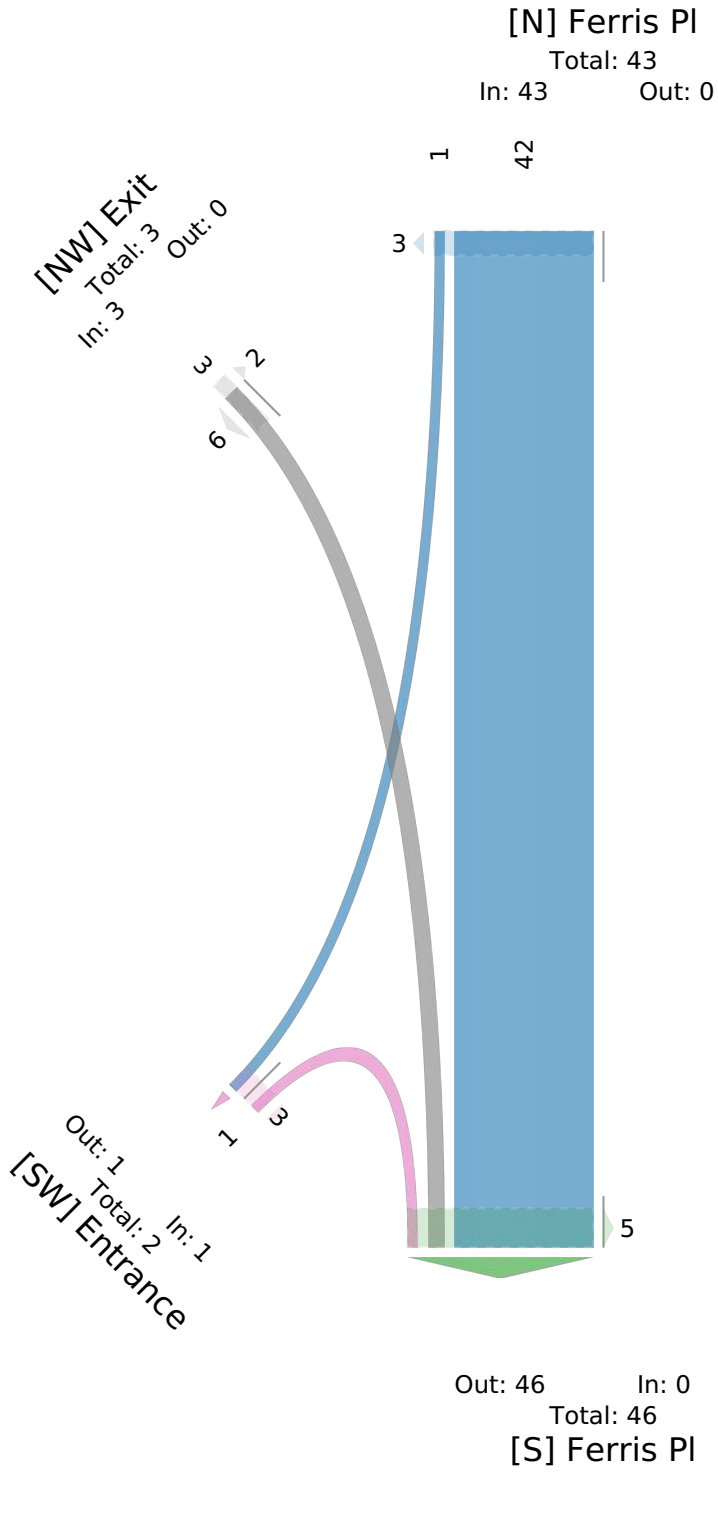

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Westfield, NJ
North Ave & Parking Lot (East of Charles)
Saturday, June 18, 2022
Location: 40.649366, -74.353947

Count Name: North Avenue & Parking Lot (east of Charles Street)
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	North Ave Eastbound						North Ave Westbound						South Parking Lot Northbound						North Parking Lot Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	0	116	0	0	0	116	0	132	0	0	0	132	0	0	0	0	0	0	0	0	0	0	1	0	248
11:15 AM	0	140	1	0	0	141	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	0	0	0	264
11:30 AM	0	110	0	0	0	110	0	119	0	0	0	119	0	0	0	0	2	0	0	0	0	0	1	0	229
11:45 AM	1	136	0	0	0	137	0	124	0	0	0	124	0	0	0	0	0	0	0	0	0	0	0	0	261
Hourly Total	1	502	1	0	0	504	0	498	0	0	0	498	0	0	0	0	2	0	0	0	0	0	2	0	1002
12:00 PM	0	138	0	0	0	138	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	0	1	0	261
12:15 PM	0	126	0	0	0	126	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	0	0	0	249
12:30 PM	0	102	0	0	0	102	0	170	0	0	0	170	0	0	0	0	1	0	0	0	0	0	0	0	272
12:45 PM	1	133	0	0	0	134	1	135	0	0	0	136	2	0	0	0	3	2	0	0	1	0	0	1	273
Hourly Total	1	499	0	0	0	500	1	551	0	0	0	552	2	0	0	0	4	2	0	0	1	0	1	1	1055
1:00 PM	0	118	0	0	0	118	0	131	0	0	0	131	0	0	0	0	0	0	1	0	0	0	7	1	250
1:15 PM	0	134	0	0	0	134	1	116	0	0	0	117	0	0	0	0	0	0	1	0	0	0	2	1	252
1:30 PM	0	107	0	0	0	107	0	131	0	0	0	131	0	0	0	0	2	0	0	0	0	0	1	0	238
1:45 PM	0	102	1	0	0	103	0	106	0	0	0	106	0	0	0	0	0	0	0	0	0	0	0	0	209
Hourly Total	0	461	1	0	0	462	1	484	0	0	0	485	0	0	0	0	2	0	2	0	0	0	10	2	949
2:00 PM	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
Grand Total	2	1462	2	0	0	1466	2	1533	0	0	0	1535	2	0	0	0	8	2	2	0	1	0	13	3	3006
Approach %	0.1	99.7	0.1	0.0	-	-	0.1	99.9	0.0	0.0	-	-	100.0	0.0	0.0	0.0	-	-	66.7	0.0	33.3	0.0	-	-	-
Total %	0.1	48.6	0.1	0.0	-	48.8	0.1	51.0	0.0	0.0	-	51.1	0.1	0.0	0.0	0.0	-	0.1	0.1	0.0	0.0	0.0	-	0.1	-
Lights	2	1445	2	0	-	1449	2	1516	0	0	-	1518	2	0	0	0	-	2	2	0	1	0	-	3	2972
% Lights	100.0	98.8	100.0	-	-	98.8	100.0	98.9	-	-	-	98.9	100.0	-	-	-	-	100.0	100.0	-	100.0	-	-	100.0	98.9
Buses	0	2	0	0	-	2	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	4
% Buses	0.0	0.1	0.0	-	-	0.1	0.0	0.1	-	-	-	0.1	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	0.1
Trucks	0	15	0	0	-	15	0	15	0	0	-	15	0	0	0	0	-	0	0	0	0	0	-	0	30
% Trucks	0.0	1.0	0.0	-	-	1.0	0.0	1.0	-	-	-	1.0	0.0	-	-	-	-	0.0	0.0	-	0.0	-	-	0.0	1.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.5	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	13	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87.5	-	-	-	-	-	100.0	-	-

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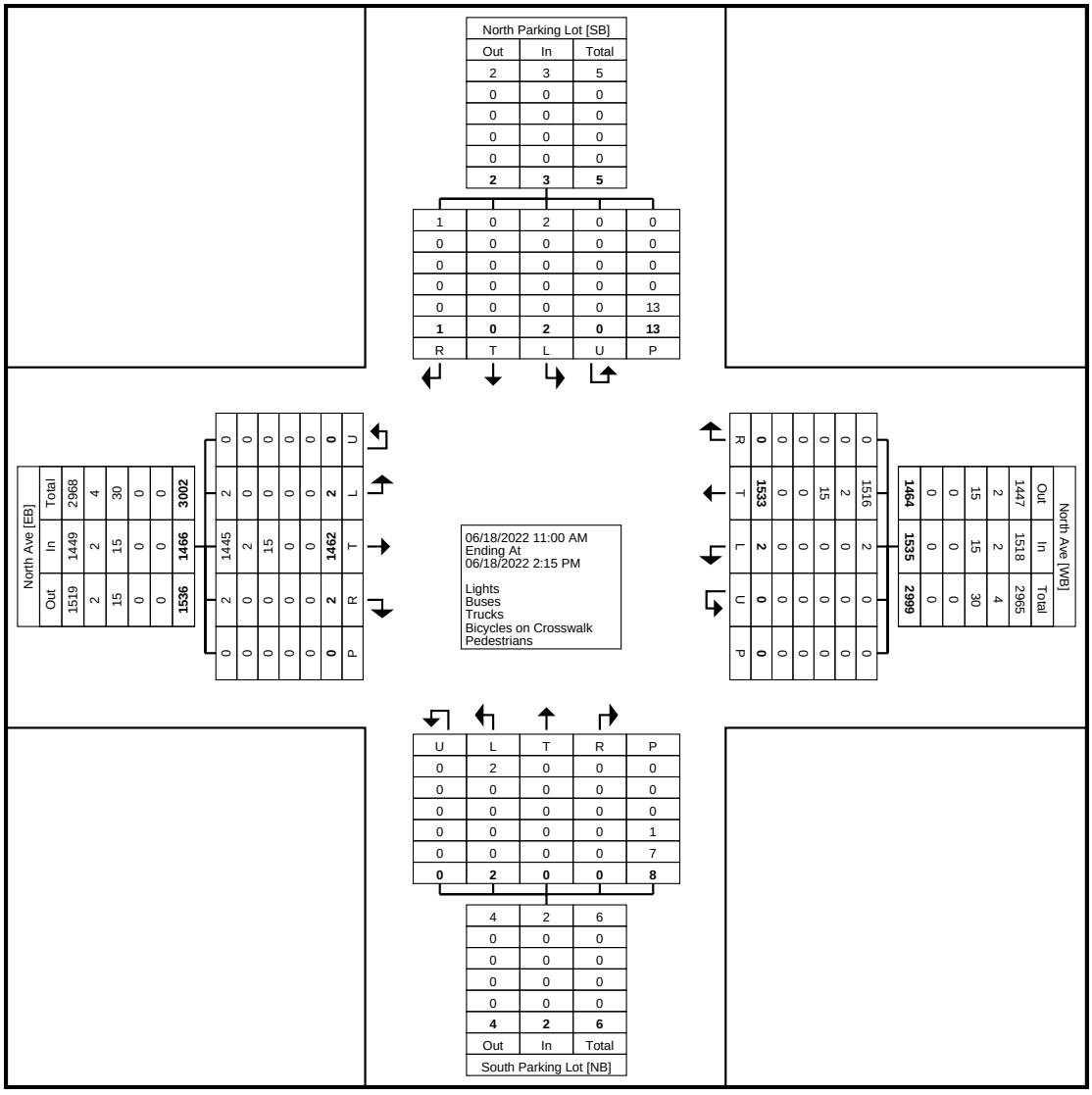

Turning Movement Data Plot

Westfield, NJ
North Ave & Parking Lot (East of Charles)
Saturday, June 18, 2022
Location: 40.649366, -74.353947

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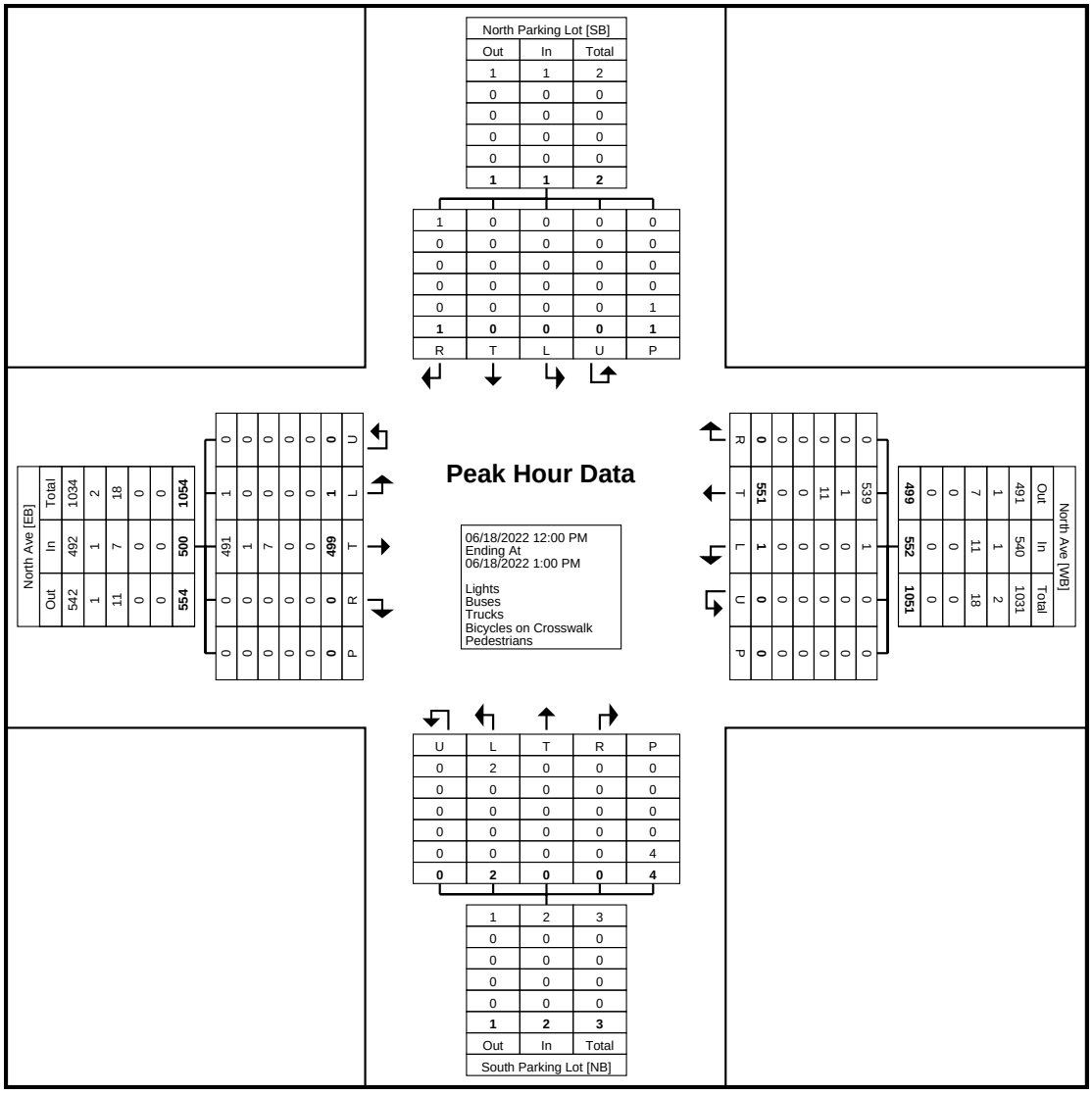
Turning Movement Peak Hour Data (12:00 PM)

Start Time	North Ave Eastbound						North Ave Westbound						South Parking Lot Northbound						North Parking Lot Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 PM	0	138	0	0	0	138	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	0	1	0	261
12:15 PM	0	126	0	0	0	126	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	0	0	0	249
12:30 PM	0	102	0	0	0	102	0	170	0	0	0	170	0	0	0	0	1	0	0	0	0	0	0	0	272
12:45 PM	1	133	0	0	0	134	1	135	0	0	0	136	2	0	0	0	3	2	0	0	1	0	0	1	273
Total	1	499	0	0	0	500	1	551	0	0	0	552	2	0	0	0	4	2	0	0	1	0	1	1	1055
Approach %	0.2	99.8	0.0	0.0	-	-	0.2	99.8	0.0	0.0	-	-	100.0	0.0	0.0	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.1	47.3	0.0	0.0	-	47.4	0.1	52.2	0.0	0.0	-	52.3	0.2	0.0	0.0	0.0	-	0.2	0.0	0.0	0.1	0.0	-	0.1	-
PHF	0.250	0.904	0.000	0.000	-	0.906	0.250	0.810	0.000	0.000	-	0.812	0.250	0.000	0.000	0.000	-	0.250	0.000	0.000	0.250	0.000	-	0.250	0.966
Lights	1	491	0	0	-	492	1	539	0	0	-	540	2	0	0	0	-	2	0	0	1	0	-	1	1035
% Lights	100.0	98.4	-	-	-	98.4	100.0	97.8	-	-	-	97.8	100.0	-	-	-	-	100.0	-	-	100.0	-	-	100.0	98.1
Buses	0	1	0	0	-	1	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	2
% Buses	0.0	0.2	-	-	-	0.2	0.0	0.2	-	-	-	0.2	0.0	-	-	-	-	0.0	-	-	0.0	-	-	0.0	0.2
Trucks	0	7	0	0	-	7	0	11	0	0	-	11	0	0	0	0	-	0	0	0	0	0	-	0	18
% Trucks	0.0	1.4	-	-	-	1.4	0.0	2.0	-	-	-	2.0	0.0	-	-	-	-	0.0	-	-	0.0	-	-	0.0	1.7
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-



Turning Movement Peak Hour Data Plot (12:00 PM)

Westfield, NJ
North Ave & Parking Lot (west of Broad)
Saturday, June 18, 2022
Location: 40.649789, -74.351097

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Count Name: North Avenue & Parking Lot (west of Broad Street)
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	North Ave Eastbound					North Ave Westbound					Parking Lot Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	0	161	0	0	161	171	0	0	0	171	0	0	0	2	0	332
11:15 AM	0	186	0	0	186	148	0	0	0	148	0	0	0	0	0	334
11:30 AM	0	142	0	0	142	155	0	0	0	155	0	0	0	2	0	297
11:45 AM	0	177	0	0	177	156	0	0	0	156	0	0	0	2	0	333
Hourly Total	0	666	0	0	666	630	0	0	0	630	0	0	0	6	0	1296
12:00 PM	0	182	0	0	182	161	0	0	0	161	0	0	0	1	0	343
12:15 PM	0	169	0	0	169	154	0	0	0	154	0	0	0	0	0	323
12:30 PM	0	139	0	0	139	198	0	0	0	198	0	0	0	0	0	337
12:45 PM	1	195	0	0	196	168	0	0	0	168	0	0	0	5	0	364
Hourly Total	1	685	0	0	686	681	0	0	0	681	0	0	0	6	0	1367
1:00 PM	0	160	0	0	160	152	0	0	0	152	0	0	0	12	0	312
1:15 PM	0	181	0	1	181	155	0	0	0	155	0	0	0	5	0	336
1:30 PM	0	141	0	0	141	170	0	0	0	170	0	0	0	3	0	311
1:45 PM	0	136	0	0	136	132	0	0	0	132	0	0	0	4	0	268
Hourly Total	0	618	0	1	618	609	0	0	0	609	0	0	0	24	0	1227
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	1969	0	1	1970	1920	0	0	0	1920	0	0	0	36	0	3890
Approach %	0.1	99.9	0.0	-	-	100.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	50.6	0.0	-	50.6	49.4	0.0	0.0	-	49.4	0.0	0.0	0.0	-	0.0	-
Lights	0	1948	0	-	1948	1885	0	0	-	1885	0	0	0	-	0	3833
% Lights	0.0	98.9	-	-	98.9	98.2	-	-	-	98.2	-	-	-	-	-	98.5
Buses	1	2	0	-	3	5	0	0	-	5	0	0	0	-	0	8
% Buses	100.0	0.1	-	-	0.2	0.3	-	-	-	0.3	-	-	-	-	-	0.2
Trucks	0	19	0	-	19	30	0	0	-	30	0	0	0	-	0	49
% Trucks	0.0	1.0	-	-	1.0	1.6	-	-	-	1.6	-	-	-	-	-	1.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	5	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	13.9	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	31	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	86.1	-	-

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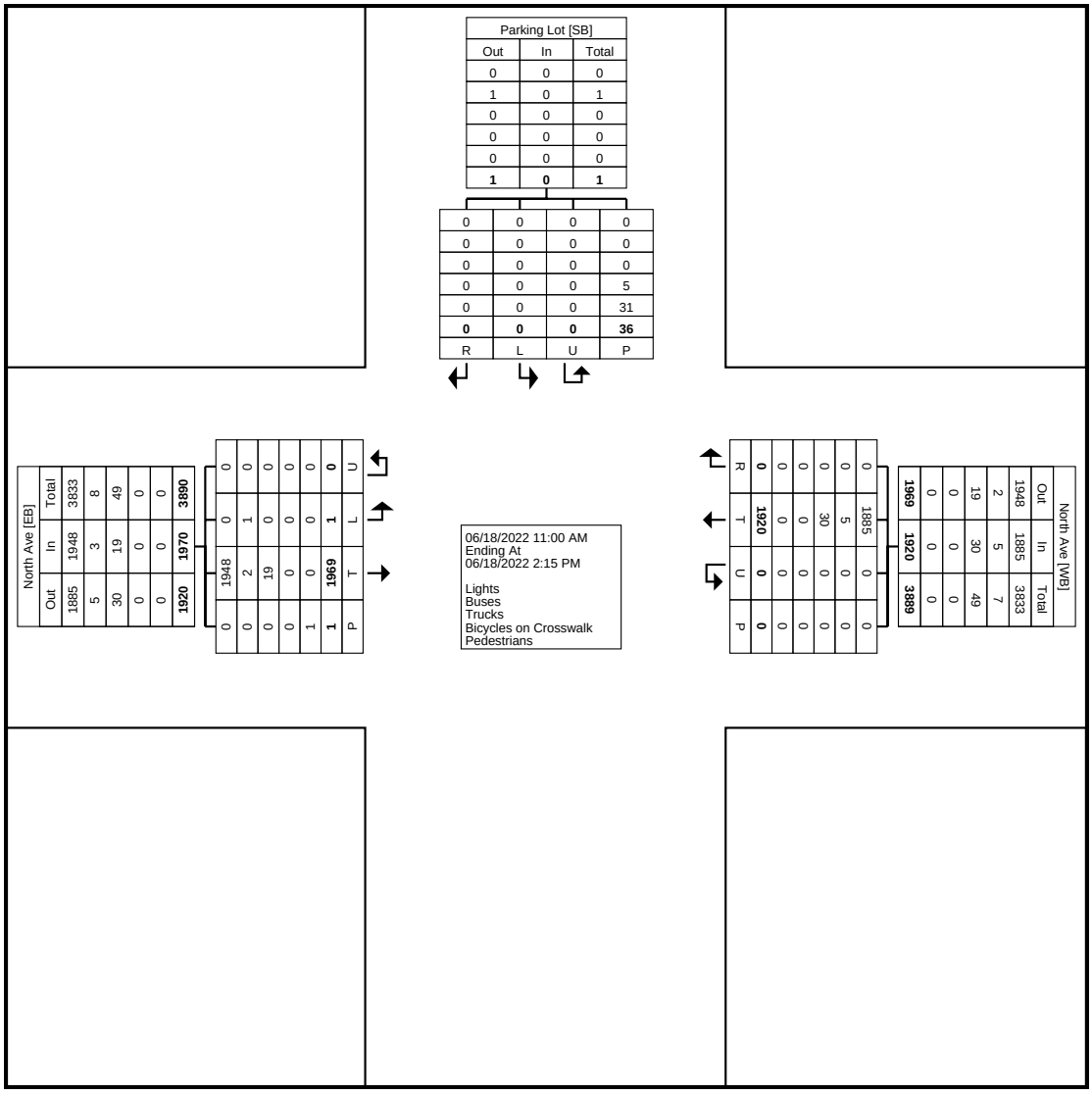

Turning Movement Data Plot

Westfield, NJ
North Ave & Parking Lot (west of Broad)
Saturday, June 18, 2022
Location: 40.649789, -74.351097

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Count Name: North Avenue & Parking Lot (west of Broad Street)
Site Code:
Start Date: 06/18/2022

Turning Movement Peak Hour Data (12:00 PM)

Start Time	North Ave Eastbound					North Ave Westbound					Parking Lot Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
12:00 PM	0	182	0	0	182	161	0	0	0	161	0	0	0	1	0	343
12:15 PM	0	169	0	0	169	154	0	0	0	154	0	0	0	0	0	323
12:30 PM	0	139	0	0	139	198	0	0	0	198	0	0	0	0	0	337
12:45 PM	1	195	0	0	196	168	0	0	0	168	0	0	0	5	0	364
Total	1	685	0	0	686	681	0	0	0	681	0	0	0	6	0	1367
Approach %	0.1	99.9	0.0	-	-	100.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-
Total %	0.1	50.1	0.0	-	50.2	49.8	0.0	0.0	-	49.8	0.0	0.0	0.0	-	0.0	-
PHF	0.250	0.878	0.000	-	0.875	0.860	0.000	0.000	-	0.860	0.000	0.000	0.000	-	0.000	0.939
Lights	0	675	0	-	675	660	0	0	-	660	0	0	0	-	0	1335
% Lights	0.0	98.5	-	-	98.4	96.9	-	-	-	96.9	-	-	-	-	-	97.7
Buses	1	1	0	-	2	4	0	0	-	4	0	0	0	-	0	6
% Buses	100.0	0.1	-	-	0.3	0.6	-	-	-	0.6	-	-	-	-	-	0.4
Trucks	0	9	0	-	9	17	0	0	-	17	0	0	0	-	0	26
% Trucks	0.0	1.3	-	-	1.3	2.5	-	-	-	2.5	-	-	-	-	-	1.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0	-	-

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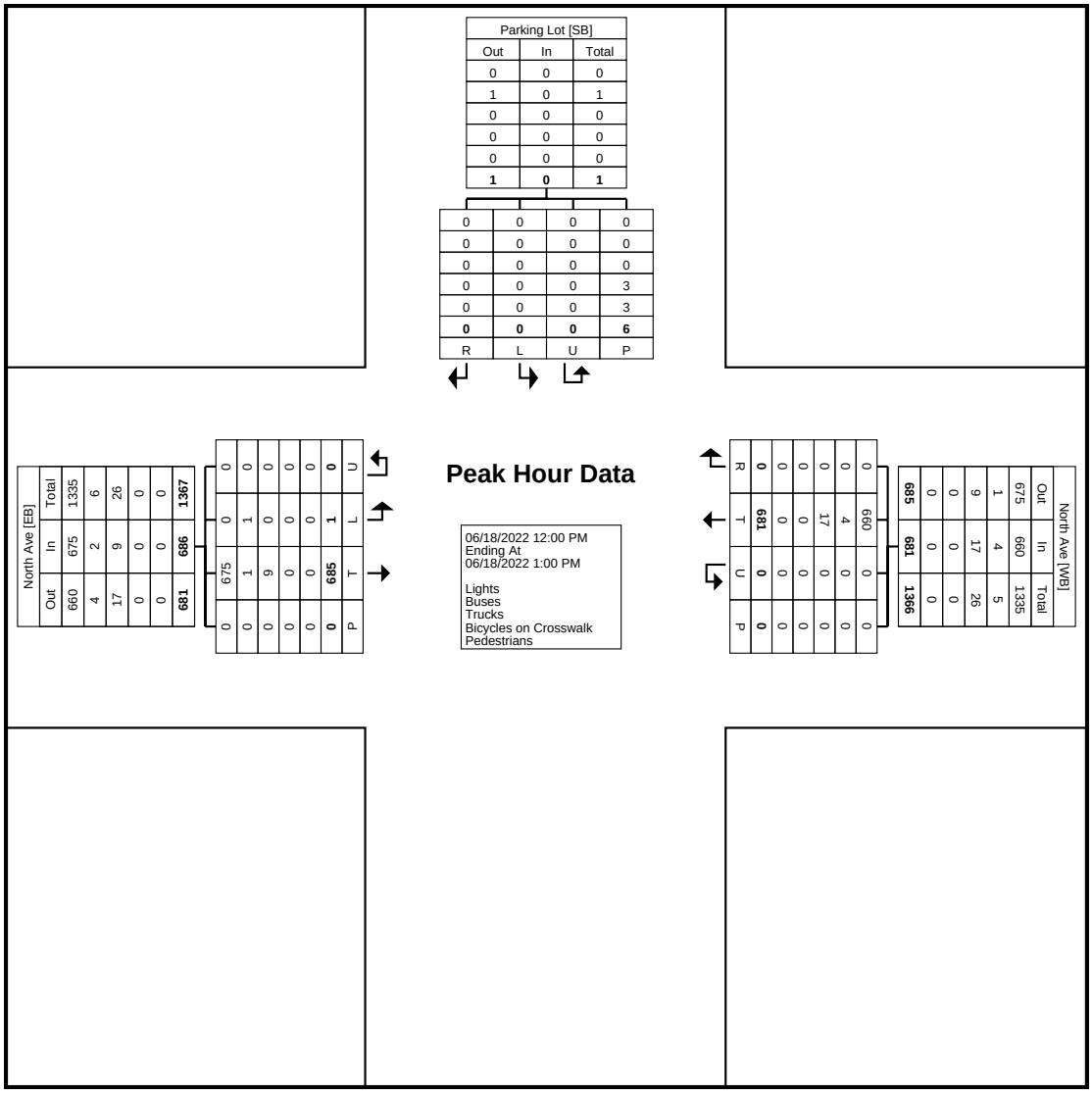

Turning Movement Peak Hour Data Plot (12:00 PM)

Westfield, NJ
North Ave & Parking Lot (west of Clark)
Saturday, June 18, 2022
Location: 40.649489, -74.353204

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Count Name: North Avenue & Parking Lot (west of Clark Street)
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	North Ave Eastbound					North Ave Westbound					Parking Lot Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:00 AM	0	116	0	0	116	130	0	0	0	130	0	0	0	1	0	246
11:15 AM	0	141	0	0	141	126	0	0	0	126	0	0	0	0	0	267
11:30 AM	0	110	0	0	110	115	0	0	1	115	0	0	0	0	0	225
11:45 AM	0	135	0	0	135	126	2	0	0	128	1	0	0	0	1	264
Hourly Total	0	502	0	0	502	497	2	0	1	499	1	0	0	1	1	1002
12:00 PM	0	138	0	0	138	121	0	0	0	121	0	1	0	1	1	260
12:15 PM	0	127	0	0	127	126	0	0	0	126	0	0	0	0	0	253
12:30 PM	0	100	0	0	100	166	1	0	0	167	0	0	0	0	0	267
12:45 PM	0	133	0	0	133	135	0	0	0	135	0	0	0	0	0	268
Hourly Total	0	498	0	0	498	548	1	0	0	549	0	1	0	1	1	1048
1:00 PM	0	122	0	0	122	131	0	0	0	131	0	0	0	6	0	253
1:15 PM	0	133	0	0	133	121	1	0	0	122	0	0	0	2	0	255
1:30 PM	0	102	0	0	102	131	0	1	0	132	0	0	0	2	0	234
1:45 PM	0	106	0	0	106	101	0	0	0	101	0	0	0	0	0	207
Hourly Total	0	463	0	0	463	484	1	1	0	486	0	0	0	10	0	949
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1463	0	0	1463	1529	4	1	1	1534	1	1	0	12	2	2999
Approach %	0.0	100.0	0.0	-	-	99.7	0.3	0.1	-	-	50.0	50.0	0.0	-	-	-
Total %	0.0	48.8	0.0	-	48.8	51.0	0.1	0.0	-	51.2	0.0	0.0	0.0	-	0.1	-
Lights	0	1448	0	-	1448	1512	4	1	-	1517	1	1	0	-	2	2967
% Lights	-	99.0	-	-	99.0	98.9	100.0	100.0	-	98.9	100.0	100.0	-	-	100.0	98.9
Buses	0	2	0	-	2	2	0	0	-	2	0	0	0	-	0	4
% Buses	-	0.1	-	-	0.1	0.1	0.0	0.0	-	0.1	0.0	0.0	-	-	0.0	0.1
Trucks	0	13	0	-	13	15	0	0	-	15	0	0	0	-	0	28
% Trucks	-	0.9	-	-	0.9	1.0	0.0	0.0	-	1.0	0.0	0.0	-	-	0.0	0.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	12	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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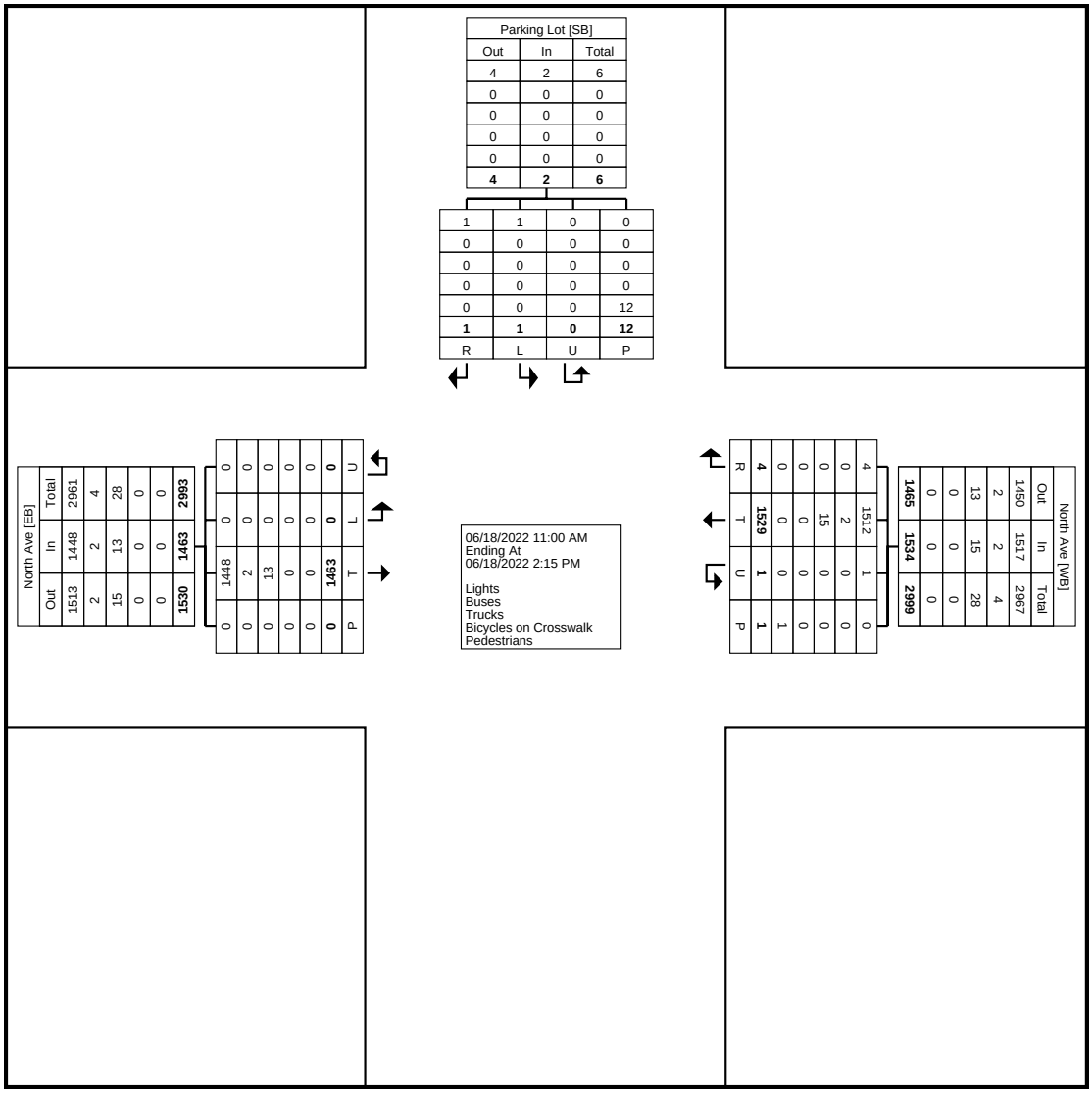

Turning Movement Data Plot

Westfield, NJ
North Ave & Parking Lot (west of Clark)
Saturday, June 18, 2022
Location: 40.649489, -74.353204

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Count Name: North Avenue & Parking Lot (west of Clark Street)
Site Code:
Start Date: 06/18/2022

Turning Movement Peak Hour Data (12:00 PM)

Start Time	North Ave Eastbound					North Ave Westbound					Parking Lot Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
12:00 PM	0	138	0	0	138	121	0	0	0	121	0	1	0	1	1	260
12:15 PM	0	127	0	0	127	126	0	0	0	126	0	0	0	0	0	253
12:30 PM	0	100	0	0	100	166	1	0	0	167	0	0	0	0	0	267
12:45 PM	0	133	0	0	133	135	0	0	0	135	0	0	0	0	0	268
Total	0	498	0	0	498	548	1	0	0	549	0	1	0	1	1	1048
Approach %	0.0	100.0	0.0	-	-	99.8	0.2	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	47.5	0.0	-	47.5	52.3	0.1	0.0	-	52.4	0.0	0.1	0.0	-	0.1	-
PHF	0.000	0.902	0.000	-	0.902	0.825	0.250	0.000	-	0.822	0.000	0.250	0.000	-	0.250	0.978
Lights	0	491	0	-	491	536	1	0	-	537	0	1	0	-	1	1029
% Lights	-	98.6	-	-	98.6	97.8	100.0	-	-	97.8	-	100.0	-	-	100.0	98.2
Buses	0	1	0	-	1	1	0	0	-	1	0	0	0	-	0	2
% Buses	-	0.2	-	-	0.2	0.2	0.0	-	-	0.2	-	0.0	-	-	0.0	0.2
Trucks	0	6	0	-	6	11	0	0	-	11	0	0	0	-	0	17
% Trucks	-	1.2	-	-	1.2	2.0	0.0	-	-	2.0	-	0.0	-	-	0.0	1.6
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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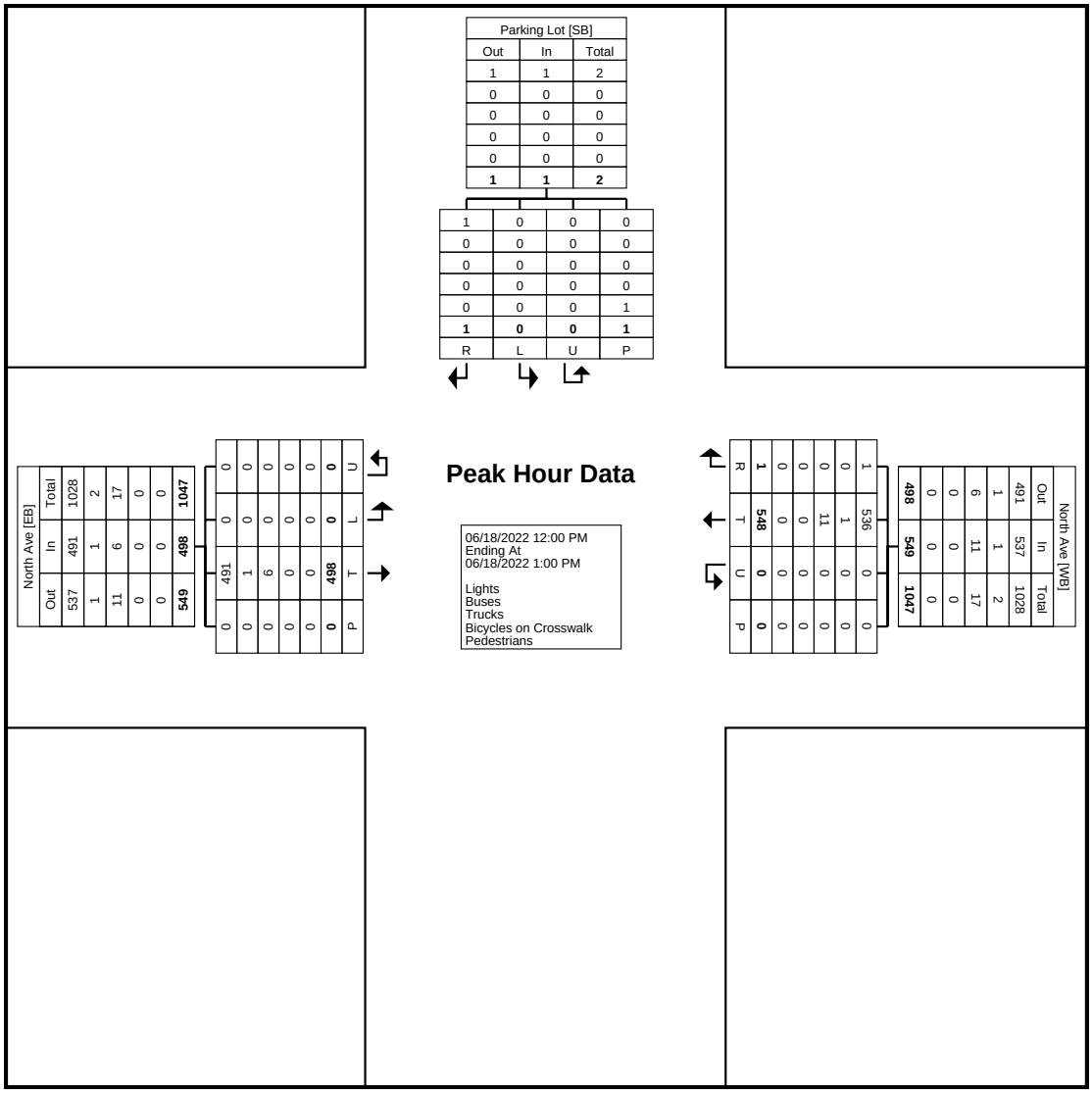

Turning Movement Peak Hour Data Plot (12:00 PM)

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Westfield, NJ
Prospect St & Broad St
Saturday, June 18, 2022
Location: 40.650662, -74.349383

Count Name: Prospect Street & Broad Street
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	Broad St Eastbound						Broad St Westbound						Prospect St Northbound						Prospect St Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:00 AM	26	99	0	0	4	125	0	71	16	0	29	87	4	10	16	0	12	30	1	0	21	0	17	22	264
11:15 AM	36	111	0	0	1	147	0	84	20	0	45	104	1	8	12	0	4	21	1	0	19	0	17	20	292
11:30 AM	25	112	0	0	5	137	0	70	15	0	42	85	5	4	13	0	7	22	0	0	36	0	18	36	280
11:45 AM	32	109	0	0	7	141	0	84	14	0	68	98	3	14	17	0	9	34	0	0	37	0	17	37	310
Hourly Total	119	431	0	0	17	550	0	309	65	0	184	374	13	36	58	0	32	107	2	0	113	0	69	115	1146
12:00 PM	40	101	0	0	4	141	0	87	20	0	55	107	2	11	24	0	0	37	2	0	39	0	16	41	326
12:15 PM	36	117	1	0	1	154	0	88	18	0	34	106	9	11	10	0	6	30	3	0	50	0	24	53	343
12:30 PM	26	99	0	0	3	125	0	84	14	0	39	98	3	9	24	0	5	36	1	0	38	0	21	39	298
12:45 PM	32	86	0	0	3	118	0	79	15	0	51	94	5	13	22	0	5	40	2	0	34	0	18	36	288
Hourly Total	134	403	1	0	11	538	0	338	67	0	179	405	19	44	80	0	16	143	8	0	161	0	79	169	1255
1:00 PM	31	91	0	0	2	122	0	96	22	0	32	118	3	9	23	0	13	35	2	0	25	0	21	27	302
1:15 PM	24	89	0	0	5	113	0	67	22	0	53	89	2	9	16	0	12	27	0	0	49	0	20	49	278
1:30 PM	21	104	0	0	1	125	0	66	15	0	42	81	2	15	7	0	7	24	0	0	24	0	12	24	254
1:45 PM	19	98	0	0	0	117	0	78	19	0	36	97	5	12	16	0	8	33	0	0	42	0	37	42	289
Hourly Total	95	382	0	0	8	477	0	307	78	0	163	385	12	45	62	0	40	119	2	0	140	0	90	142	1123
2:00 PM	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
Grand Total	348	1216	1	0	36	1565	0	954	210	0	526	1164	44	125	200	0	88	369	12	0	414	0	238	426	3524
Approach %	22.2	77.7	0.1	0.0	-	-	0.0	82.0	18.0	0.0	-	-	11.9	33.9	54.2	0.0	-	-	2.8	0.0	97.2	0.0	-	-	-
Total %	9.9	34.5	0.0	0.0	-	44.4	0.0	27.1	6.0	0.0	-	33.0	1.2	3.5	5.7	0.0	-	10.5	0.3	0.0	11.7	0.0	-	12.1	-
Lights	344	1196	1	0	-	1541	0	943	208	0	-	1151	43	124	195	0	-	362	12	0	411	0	-	423	3477
% Lights	98.9	98.4	100.0	-	-	98.5	-	98.8	99.0	-	-	98.9	97.7	99.2	97.5	-	-	98.1	100.0	-	99.3	-	-	99.3	98.7
Buses	0	8	0	0	-	8	0	6	0	0	-	6	0	0	2	0	-	2	0	0	1	0	-	1	17
% Buses	0.0	0.7	0.0	-	-	0.5	-	0.6	0.0	-	-	0.5	0.0	0.0	1.0	-	-	0.5	0.0	-	0.2	-	-	0.2	0.5
Trucks	4	12	0	0	-	16	0	5	2	0	-	7	1	1	3	0	-	5	0	0	2	0	-	2	30
% Trucks	1.1	1.0	0.0	-	-	1.0	-	0.5	1.0	-	-	0.6	2.3	0.8	1.5	-	-	1.4	0.0	-	0.5	-	-	0.5	0.9
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	5.6	-	-	-	-	-	0.6	-	-	-	-	-	2.3	-	-	-	-	-	1.7	-	-
Pedestrians	-	-	-	-	34	-	-	-	-	-	523	-	-	-	-	-	86	-	-	-	-	-	234	-	-
% Pedestrians	-	-	-	-	94.4	-	-	-	-	-	99.4	-	-	-	-	-	97.7	-	-	-	-	-	98.3	-	-

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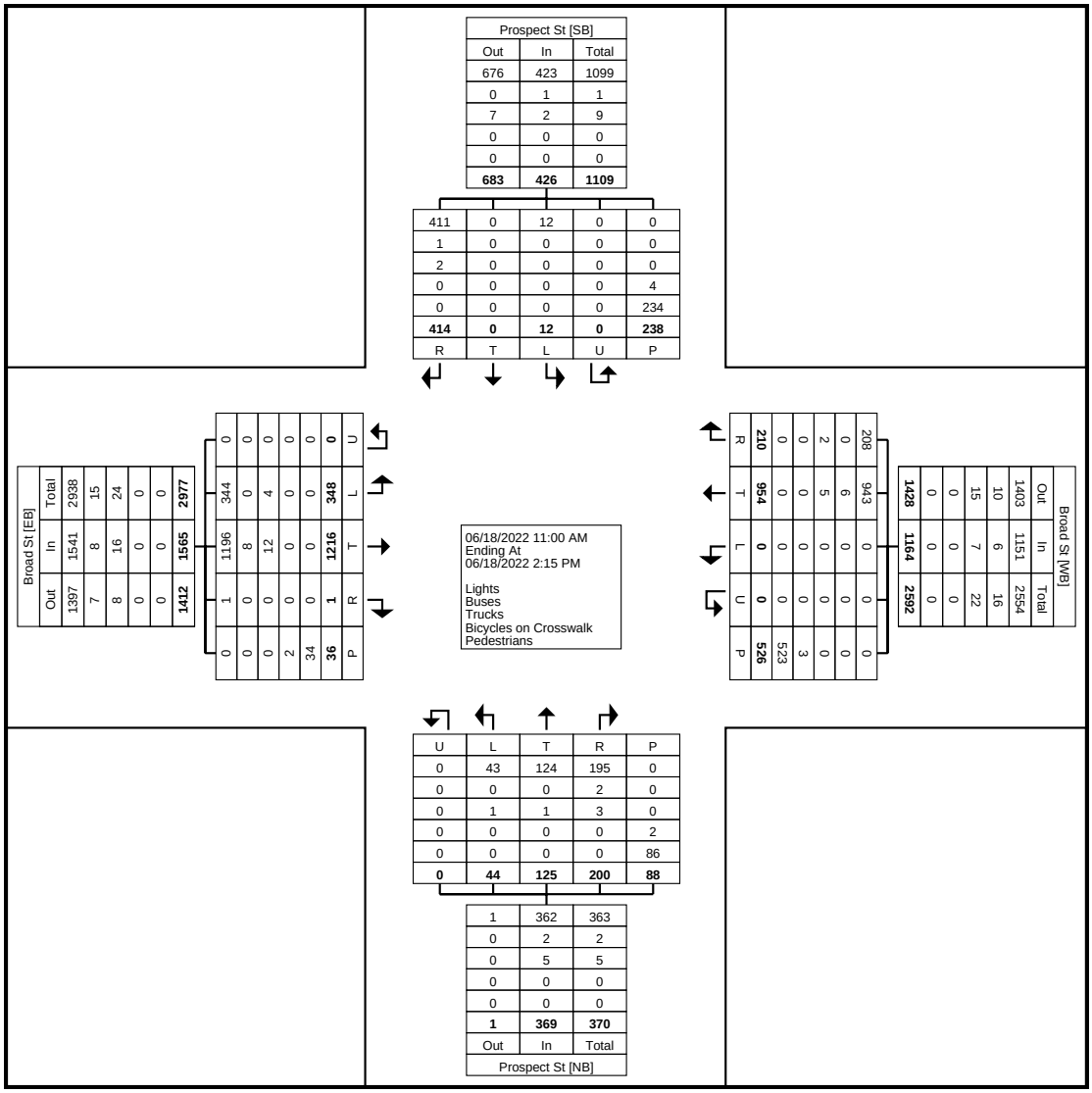
Westfield, NJ
Prospect St & Broad St
Saturday, June 18, 2022
Location: 40.650662, -74.349383

Count Name: Prospect Street & Broad Street
Site Code:
Start Date: 06/18/2022



Turning Movement Data Plot

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Westfield, NJ
Prospect St & Broad St
Saturday, June 18, 2022
Location: 40.650662, -74.349383

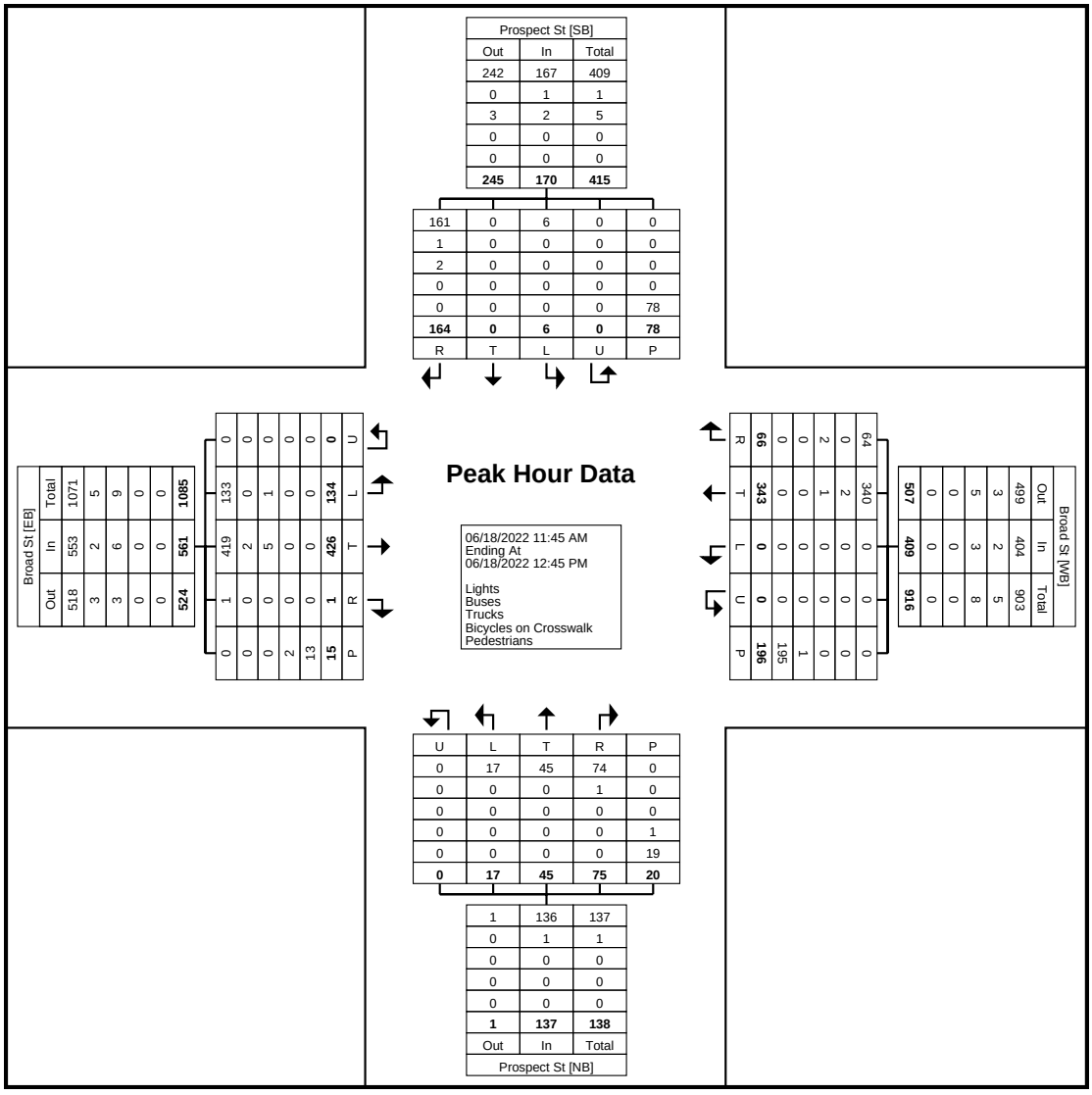
Count Name: Prospect Street & Broad Street
Site Code:
Start Date: 06/18/2022

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Broad St Eastbound						Broad St Westbound						Prospect St Northbound						Prospect St Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
11:45 AM	32	109	0	0	7	141	0	84	14	0	68	98	3	14	17	0	9	34	0	0	37	0	17	37	310
12:00 PM	40	101	0	0	4	141	0	87	20	0	55	107	2	11	24	0	0	37	2	0	39	0	16	41	326
12:15 PM	36	117	1	0	1	154	0	88	18	0	34	106	9	11	10	0	6	30	3	0	50	0	24	53	343
12:30 PM	26	99	0	0	3	125	0	84	14	0	39	98	3	9	24	0	5	36	1	0	38	0	21	39	298
Total	134	426	1	0	15	561	0	343	66	0	196	409	17	45	75	0	20	137	6	0	164	0	78	170	1277
Approach %	23.9	75.9	0.2	0.0	-	-	0.0	83.9	16.1	0.0	-	-	12.4	32.8	54.7	0.0	-	-	3.5	0.0	96.5	0.0	-	-	-
Total %	10.5	33.4	0.1	0.0	-	43.9	0.0	26.9	5.2	0.0	-	32.0	1.3	3.5	5.9	0.0	-	10.7	0.5	0.0	12.8	0.0	-	13.3	-
PHF	0.838	0.910	0.250	0.000	-	0.911	0.000	0.974	0.825	0.000	-	0.956	0.472	0.804	0.781	0.000	-	0.926	0.500	0.000	0.820	0.000	-	0.802	0.931
Lights	133	419	1	0	-	553	0	340	64	0	-	404	17	45	74	0	-	136	6	0	161	0	-	167	1260
% Lights	99.3	98.4	100.0	-	-	98.6	-	99.1	97.0	-	-	98.8	100.0	100.0	98.7	-	-	99.3	100.0	-	98.2	-	-	98.2	98.7
Buses	0	2	0	0	-	2	0	2	0	0	-	2	0	0	1	0	-	1	0	0	1	0	-	1	6
% Buses	0.0	0.5	0.0	-	-	0.4	-	0.6	0.0	-	-	0.5	0.0	0.0	1.3	-	-	0.7	0.0	-	0.6	-	-	0.6	0.5
Trucks	1	5	0	0	-	6	0	1	2	0	-	3	0	0	0	0	-	0	0	0	2	0	-	2	11
% Trucks	0.7	1.2	0.0	-	-	1.1	-	0.3	3.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.0	-	1.2	-	-	1.2	0.9
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	13.3	-	-	-	-	-	0.5	-	-	-	-	-	5.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	13	-	-	-	-	-	195	-	-	-	-	-	19	-	-	-	-	-	78	-	-
% Pedestrians	-	-	-	-	86.7	-	-	-	-	-	99.5	-	-	-	-	-	95.0	-	-	-	-	-	100.0	-	-

Westfield, NJ
Prospect St & Broad St
Saturday, June 18, 2022
Location: 40.650662, -74.349383

Count Name: Prospect Street & Broad Street
Site Code:
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (11:45 AM)

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Westfield, NJ
Route 28/Broad St & North Ave
Saturday, June 18, 2022
Location: 40.649862, -74.350241

Count Name: Route 28/Broad Street & North Avenue
Site Code:
Start Date: 06/18/2022

Turning Movement Data

Start Time	North Ave Eastbound							North Ave Westbound							Route 28 Northbound							Broad St Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
11:00 AM	33	60	68	0	0	9	161	43	98	6	0	0	10	147	52	91	41	0	0	1	184	11	67	18	3	0	3	99	591
11:15 AM	24	72	84	0	0	5	180	38	83	6	0	0	1	127	46	124	48	0	0	1	218	8	80	16	1	0	2	105	630
11:30 AM	33	54	52	0	0	5	139	44	86	6	0	0	3	136	47	100	36	0	0	2	183	11	70	20	4	0	1	105	563
11:45 AM	33	85	64	0	0	6	182	37	86	5	0	0	10	128	53	104	35	0	0	2	192	14	87	15	3	0	2	119	621
Hourly Total	123	271	268	0	0	25	662	162	353	23	0	0	24	538	198	419	160	0	0	6	777	44	304	69	11	0	8	428	2405
12:00 PM	22	76	86	0	0	6	184	36	88	3	0	0	5	127	49	114	44	0	0	0	207	17	91	20	1	0	1	129	647
12:15 PM	29	71	71	0	0	6	171	60	80	5	0	0	4	145	53	115	37	0	0	0	205	12	102	22	0	0	5	136	657
12:30 PM	22	50	64	0	0	6	136	42	118	3	0	0	5	163	54	98	38	1	0	1	191	9	93	22	2	0	2	126	616
12:45 PM	35	71	92	0	0	4	198	49	95	1	0	0	2	145	55	80	38	0	0	3	173	8	85	17	2	0	0	112	628
Hourly Total	108	268	313	0	0	22	689	187	381	12	0	0	16	580	211	407	157	1	0	4	776	46	371	81	5	0	8	503	2548
1:00 PM	20	62	77	0	0	6	159	58	83	3	0	0	6	144	58	104	33	0	0	1	195	17	93	10	0	0	2	120	618
1:15 PM	28	70	82	0	0	7	180	36	76	7	0	0	8	119	59	80	25	0	0	0	164	14	82	14	5	0	3	115	578
1:30 PM	24	55	63	0	0	6	142	49	108	2	0	0	2	159	45	93	32	0	0	0	170	11	69	12	5	0	1	97	568
1:45 PM	18	56	60	0	0	8	134	36	81	2	2	0	6	121	37	92	29	0	0	2	158	7	94	15	0	0	2	116	529
Hourly Total	90	243	282	0	0	27	615	179	348	14	2	0	22	543	199	369	119	0	0	3	687	49	338	51	10	0	8	448	2293
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	2
Grand Total	321	782	863	0	0	74	1966	528	1082	49	2	0	62	1661	608	1196	436	1	0	13	2241	139	1014	201	26	0	24	1380	7248
Approach %	16.3	39.8	43.9	0.0	0.0	-	-	31.8	65.1	3.0	0.1	0.0	-	-	27.1	53.4	19.5	0.0	0.0	-	-	10.1	73.5	14.6	1.9	0.0	-	-	-
Total %	4.4	10.8	11.9	0.0	0.0	-	27.1	7.3	14.9	0.7	0.0	0.0	-	22.9	8.4	16.5	6.0	0.0	0.0	-	30.9	1.9	14.0	2.8	0.4	0.0	-	19.0	-
Lights	316	775	855	0	0	-	1946	519	1057	49	2	0	-	1627	604	1183	432	1	0	-	2220	139	1001	198	26	0	-	1364	7157
% Lights	98.4	99.1	99.1	-	-	-	99.0	98.3	97.7	100.0	100.0	-	-	98.0	99.3	98.9	99.1	100.0	-	-	99.1	100.0	98.7	98.5	100.0	-	-	98.8	98.7
Buses	0	2	0	0	0	-	2	3	0	0	0	0	-	3	1	5	2	0	0	-	8	0	6	0	0	0	-	6	19
% Buses	0.0	0.3	0.0	-	-	-	0.1	0.6	0.0	0.0	0.0	-	-	0.2	0.2	0.4	0.5	0.0	-	-	0.4	0.0	0.6	0.0	0.0	-	-	0.4	0.3
Trucks	5	5	8	0	0	-	18	6	25	0	0	0	-	31	3	8	2	0	0	-	13	0	7	3	0	0	-	10	72
% Trucks	1.6	0.6	0.9	-	-	-	0.9	1.1	2.3	0.0	0.0	-	-	1.9	0.5	0.7	0.5	0.0	-	-	0.6	0.0	0.7	1.5	0.0	-	-	0.7	1.0
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	4	-	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	4.1	-	-	-	-	-	-	1.6	-	-	-	-	-	-	30.8	-	-	-	-	-	-	4.2	-	-
Pedestrians	-	-	-	-	-	71	-	-	-	-	-	-	61	-	-	-	-	-	-	9	-	-	-	-	-	-	23	-	-
% Pedestrians	-	-	-	-	-	95.9	-	-	-	-	-	-	98.4	-	-	-	-	-	-	69.2	-	-	-	-	-	-	95.8	-	-

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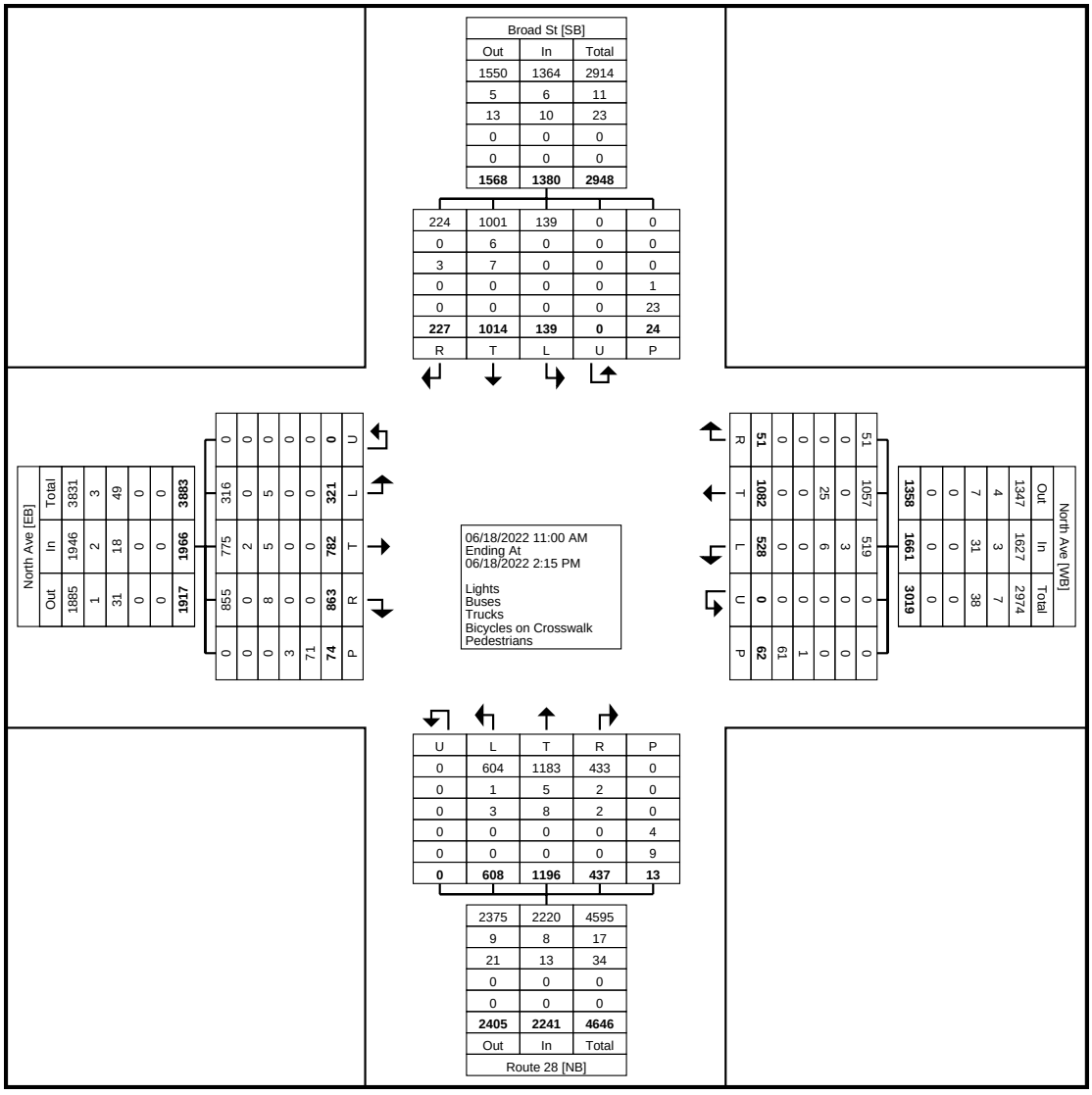
Westfield, NJ
Route 28/Broad St & North Ave
Saturday, June 18, 2022
Location: 40.649862, -74.350241

Count Name: Route 28/Broad Street & North Avenue
Site Code:
Start Date: 06/18/2022



Turning Movement Data Plot

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Westfield, NJ
Route 28/Broad St & North Ave
Saturday, June 18, 2022
Location: 40.649862, -74.350241

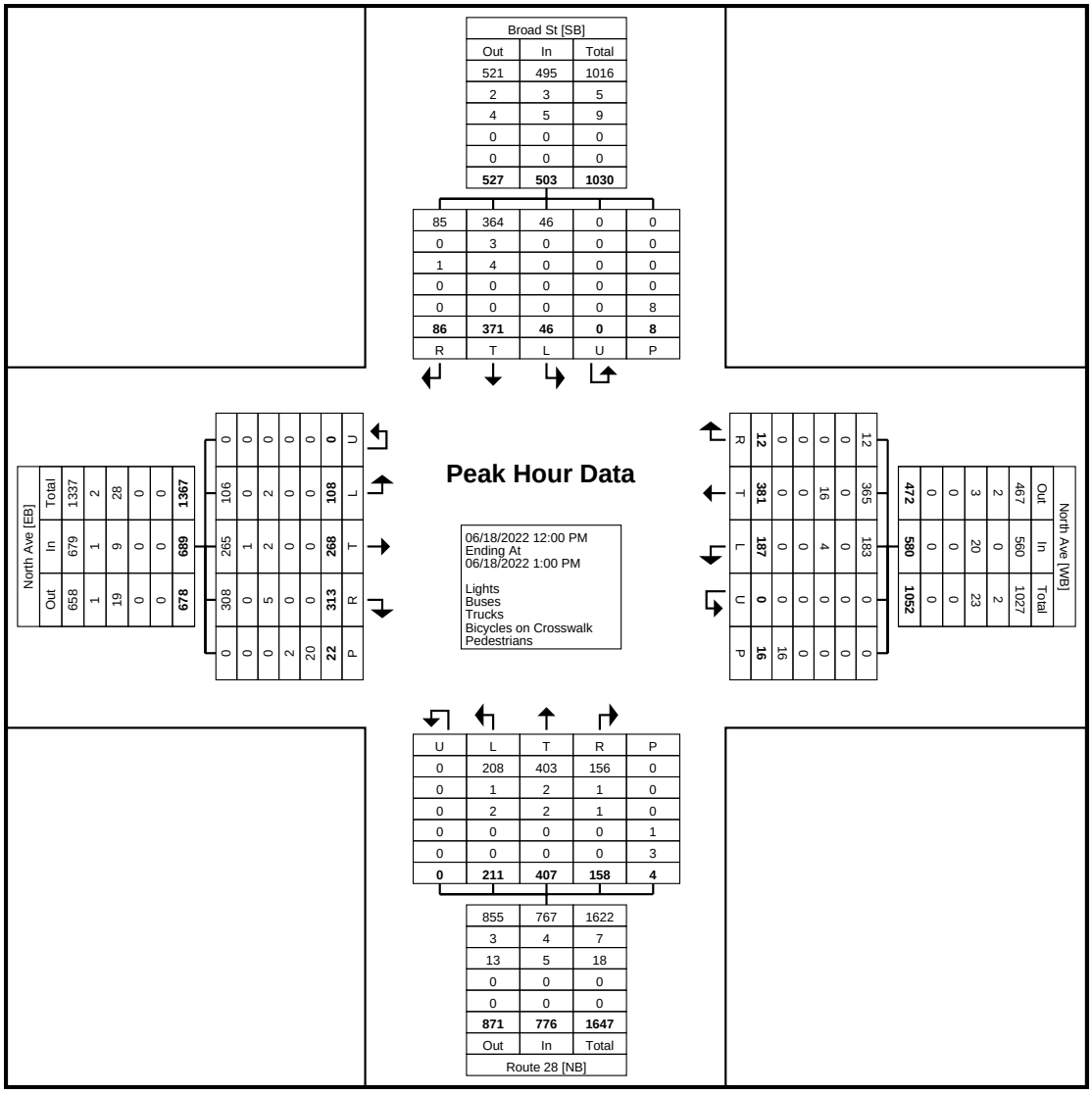
Count Name: Route 28/Broad Street & North Avenue
Site Code:
Start Date: 06/18/2022

Turning Movement Peak Hour Data (12:00 PM)

Start Time	North Ave Eastbound							North Ave Westbound							Route 28 Northbound							Broad St Southbound							Int. Total
	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	Right	Right on Red	U-Turn	Peds	App. Total	
12:00 PM	22	76	86	0	0	6	184	36	88	3	0	0	5	127	49	114	44	0	0	0	207	17	91	20	1	0	1	129	647
12:15 PM	29	71	71	0	0	6	171	60	80	5	0	0	4	145	53	115	37	0	0	0	205	12	102	22	0	0	5	136	657
12:30 PM	22	50	64	0	0	6	136	42	118	3	0	0	5	163	54	98	38	1	0	1	191	9	93	22	2	0	2	126	616
12:45 PM	35	71	92	0	0	4	198	49	95	1	0	0	2	145	55	80	38	0	0	3	173	8	85	17	2	0	0	112	628
Total	108	268	313	0	0	22	689	187	381	12	0	0	16	580	211	407	157	1	0	4	776	46	371	81	5	0	8	503	2548
Approach %	15.7	38.9	45.4	0.0	0.0	-	-	32.2	65.7	2.1	0.0	0.0	-	-	27.2	52.4	20.2	0.1	0.0	-	-	9.1	73.8	16.1	1.0	0.0	-	-	-
Total %	4.2	10.5	12.3	0.0	0.0	-	27.0	7.3	15.0	0.5	0.0	0.0	-	22.8	8.3	16.0	6.2	0.0	0.0	-	30.5	1.8	14.6	3.2	0.2	0.0	-	19.7	-
PHF	0.771	0.882	0.851	0.000	0.000	-	0.870	0.779	0.807	0.600	0.000	0.000	-	0.890	0.959	0.885	0.892	0.250	0.000	-	0.937	0.676	0.909	0.920	0.625	0.000	-	0.925	0.970
Lights	106	265	308	0	0	-	679	183	365	12	0	0	-	560	208	403	155	1	0	-	767	46	364	80	5	0	-	495	2501
% Lights	98.1	98.9	98.4	-	-	-	98.5	97.9	95.8	100.0	-	-	-	96.6	98.6	99.0	98.7	100.0	-	-	98.8	100.0	98.1	98.8	100.0	-	-	98.4	98.2
Buses	0	1	0	0	0	-	1	0	0	0	0	0	-	0	1	2	1	0	0	-	4	0	3	0	0	0	-	3	8
% Buses	0.0	0.4	0.0	-	-	-	0.1	0.0	0.0	0.0	-	-	-	0.0	0.5	0.5	0.6	0.0	-	-	0.5	0.0	0.8	0.0	0.0	-	-	0.6	0.3
Trucks	2	2	5	0	0	-	9	4	16	0	0	0	-	20	2	2	1	0	0	-	5	0	4	1	0	0	-	5	39
% Trucks	1.9	0.7	1.6	-	-	-	1.3	2.1	4.2	0.0	-	-	-	3.4	0.9	0.5	0.6	0.0	-	-	0.6	0.0	1.1	1.2	0.0	-	-	1.0	1.5
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	9.1	-	-	-	-	-	-	0.0	-	-	-	-	-	-	25.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	20	-	-	-	-	-	-	16	-	-	-	-	-	-	3	-	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	-	90.9	-	-	-	-	-	-	100.0	-	-	-	-	-	-	75.0	-	-	-	-	-	-	100.0	-	-

Westfield, NJ
Route 28/Broad St & North Ave
Saturday, June 18, 2022
Location: 40.649862, -74.350241

Count Name: Route 28/Broad Street & North Avenue
Site Code:
Start Date: 06/18/2022



Turning Movement Peak Hour Data Plot (12:00 PM)

APPENDIX C

Volume Development

Kimley»Horn

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Committed Developments

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	ITE 10th Edition (Peak Hour of Adjacent Street)											
	LU Code	**Land Use Category**	**Units**	**AM Trip Rate**	**In**	**Out**	**PM Trip Rate**	**In**	**Out**	**SAT Trip Rate**	**In**	**Out**
Multi-Family	221	Multifamily Housing (Mid-Rise)	DU	0.36	26%	74%	0.44	61%	39%	0.44	49%	51%
Multi-Family	220	Multifamily Housing (Low-Rise)	DU	0.46	23%	77%	0.56	63%	37%	0.7	54%	46%
Restaurant	932	High-Turnover (Sit-Down) Restaurant	KSF	9.94	55%	45%	9.77	62%	38%	11.19	51%	49%
Non-Medical	710	General Office Building	KSF	1.16	86%	14%	1.15	16%	84%	0.53	54%	46%
Medical	720	Medical-Dental Office Building'	KSF	2.78	78%	22%	3.46	28%	72%	3.1	57%	43%
General Retail	820	Shopping Center	KSF	0.94	62%	38%	3.81	48%	52%	4.5	52%	48%
		Trip Reduction (USEPA Mixed Use Trip Generation) %		**17.00%**			**19.00%**			**18.00%**		

	Adjusted Trip Rates (USEPA Mixed Use Trip Generation)											
	LU Code	**Land Use Category**		**AM Trip Rate**	**In**	**Out**	**PM Trip Rate**	**In**	**Out**	**SAT Trip Rate**	**In**	**Out**
Retail/ Restaurant - 25/75				6.38	55%	45%	6.71	60%	40%	7.80	51%	49%
Retail/ Restaurant - 50/50				4.52	56%	44%	5.50	58%	42%	6.43	51%	49%
Multi-Family	221	Multifamily Housing (Mid-Rise)		0.30	26%	74%	0.36	61%	39%	0.36	49%	51%
Multi-Family	220	Multifamily Housing (Low-Rise)		0.38	23%	77%	0.45	63%	37%	0.57	54%	46%
Restaurant	932	High-Turnover (Sit-Down) Restaurant		8.25	55%	45%	7.91	62%	38%	9.18	51%	49%
Non-Medical	710	General Office Building		0.96	86%	14%	0.93	16%	84%	0.43	54%	46%
Medical	720	Medical-Dental Office Building'		2.31	78%	22%	2.80	28%	72%	2.54	57%	43%
General Retail	820	Shopping Center		0.78	62%	38%	3.09	48%	52%	3.69	52%	48%

Build Out - H2M							Trip Generation															
							4	5	6	7												
Land Use			Development Quantity				Retail						Residential						Total Trips			
Blk_Lot	BlkLot	Land Use Combination	Retail	Retail (SF)	Residential (Rounded # of Units)	Name	AM In	AM Out	PM In	PM Out	SAT In	SAT Out	AM In	AM Out	PM In	PM Out	SAT In	SAT Out	AM In	AM Out	PM In	PM Out	SAT In	SAT Out
3001-1	30011	Residential			22	Parker (CONSTRUCTED)	-	-	-	-			2	5	5	3			2	5	5	3		
3001-6	30016	Residential			9	Parker (CONSTRUCTED)	-	-	-	-			1	2	2	1			1	2	2	1		
3002-5	30025	Split Retail/Dining/ Residential	Retail/ Restaurant - 25/75	3,472	15	Bentley (CONSTRUCTED)	12	10	14	9			1	3	3	2			13	13	17	11		
3002-6	30026	Split Retail/Dining/ Residential	Retail/ Restaurant - 25/75	649	3	Bentley (CONSTRUCTED)	2	2	3	2			0	1	1	0			3	3	3	2		
3002-12	300212	Split Retail/Dining/ Residential	Retail/ Restaurant - 25/75	1,396	6	Bentley (CONSTRUCTED)	5	4	6	4			0	1	1	1			5	5	7	5		
3002-13	300213	Split Retail/Dining/ Residential	Retail/ Restaurant - 25/75	1,539	6	Bentley (CONSTRUCTED)	5	4	6	4			0	1	1	1			6	6	8	5		
2504-13	250413	Residential			20	Savannah (CONSTRUCTED)	-	-	-	-			2	4	4	3			2	4	4	3		
2504-14	250414	Residential			33	Savannah (CONSTRUCTED)	-	-	-	-			3	7	7	5			3	7	7	5		
		Ward Proposed		-	66	Ward (PROPOSED - APPROVED)	-	-	-	-			5	15	14	9	20	17	5	15	14	9	20	17
3207-4	32074	Residential			27	333 Central (CONSTRUCTED)	-	-	-	-			2	6	6	4			2	6	6	4		
3208-1.02	32081.02	Residential			35	333 Central (CONSTRUCTED)	-	-	-	-			3	8	8	5			3	8	8	5		
3207-1	32071	Residential			8	333 Central (CONSTRUCTED)	-	-	-	-			1	2	2	1			1	2	2	1		
33071	33071	Split Retail/ Residential	Retail/ Restaurant - 25/75	4,000	52	SW-AHO (PROPOSED - APPROVED)	14	11	16	11	16	15	5	15	15	9	16	14	19	27	31	19	32	29
33072	33072	Split Retail/ Residential	Retail/ Restaurant - 25/75	8,000	104	SW-AHO (PROPOSED - APPROVED)	28	23	32	21	32	31	9	31	30	17	32	27	37	53	62	39	64	58
400417	400417	Split Retail/ Residential	Retail/ Restaurant - 25/75	-	-	SW-AHO (PROPOSED - APPROVED)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40053	40053	Split Retail/ Residential	Retail/ Restaurant - 25/75	3,554	24	SW-AHO (PROPOSED - APPROVED)	13	10	14	9	14	14	2	7	7	4	7	6	15	17	21	13	22	20
40054	40054	Split Retail/ Residential	Retail/ Restaurant - 25/75	1,446	10	SW-AHO (PROPOSED - APPROVED)	5	4	6	4	6	6	1	3	3	2	3	3	6	7	9	6	9	8
Both are along the south side		Residential			30	"Adonis" Development							**3**	**9**	**9**	**5**	9	8	3	9	9	5	9	8
Both are along the south side		Residential			15	"Steam Needle" Development							**1**	**4**	**4**	**3**	5	4	1	4	4	3	5	4

Kimley»Horn

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Excerpt of Town of Westfield Unified Land Use + Circulation Element (ULUC), June 2021

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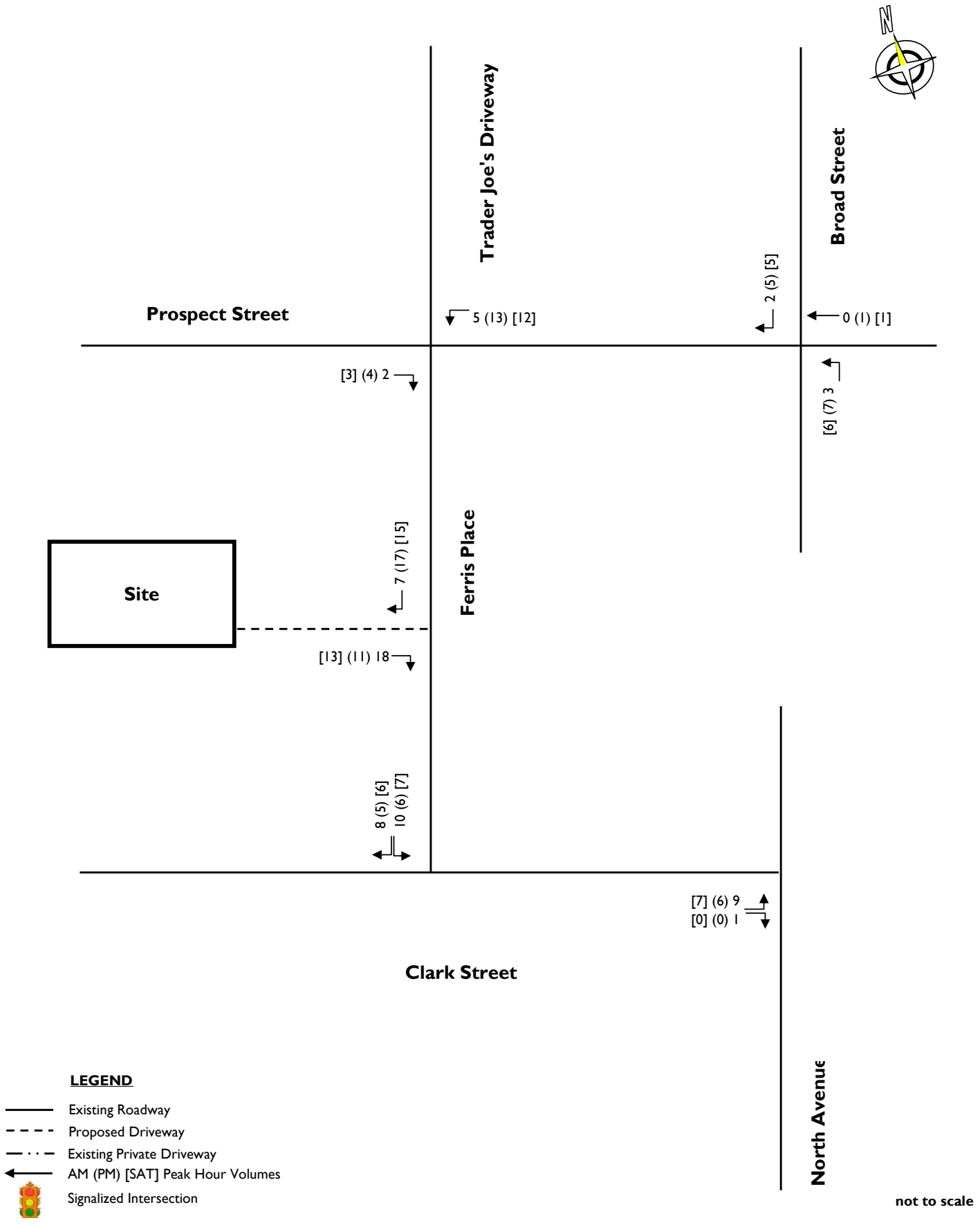

STONEFIELD	**Proposed Mixed-Use Development** **Township of Westfield, Union County, New Jersey** **Traffic Impact Study**	**FIGURE 6** **"New" Site-Generated Traffic Volumes**

Buildout Analysis

As a part of the Community Form Analysis, the ULUC team created a buildout analysis to project the potential development that may occur under a development scenario that included existing and potential redevelopment designations and potential regulatory changes to the zoning code to spur development at higher densities than what is currently allowed.

A Buildout Analysis is a planning tool utilized to estimate the amount of development that can occur in a specified area according to existing or proposed land development regulations. Buildout analysis gives the ability to "see into the future" as follows:

- Provides an understanding of the potential future growth that can occur and can have an affect on local policy decisions such as housing, economic development, and transportation
- Helps local decision makers make more informed decisions

A buildout analysis for downtown Westfield can project a potential pattern of future growth. Concerns from the community as identified in the 2019 Master Plan Reexamination Report process, including a need for redevelopment in the downtown while recognizing the area's traffic and parking conditions can be addressed. The buildout simulates or projects how much development would occur under different zoning scenarios. Utlimately, the buildout analysis will provide an answer to the following:

- "How much future development can the downtown sustainably support in terms of added population and employees?"

The results of the buildout will then answer the following questions:

- "What zoning changes are needed to support downtown revitalization while still preserving community character?"
- "How will the circulation and parking needs of the community change based on the projected buildout?"
- "What circulation and parking-related changes need to occur to improve existing and potential conditons?"

The Buildout Analysis conducted as part of this ULUC for the downtown core evaluated a development scenario that resulted in an estimate number of added residents and employees. Taking into consideration the development constraints and retaining the Town's existing character, the buildout estimates the likely maximum feasible projected development that can potential occur over the ten-year time frame of the ULUC Plan.

These zoning changes are based upon the discussions of potentially increasing the allowable height and number of stories throughout the downtown and potentially greater heights and stories along the rail line.

By projecting for this scenario, the Town can assess regulatory and streetscape changes that can help to mitigate any perceived adverse effects of development while enhancing the positive impacts of new downtown development. The ULUC Steering Committee was presented this scenario and the results. The buildout took into consideration recent approved developments, including the following, and as shown on the map on page 55:

- The Parker (439 West Broad St)
- The Bentley (501 South Ave West)
- 409 Westfield Avenue (adjacent to "Roots Building")
- Former Jolly Trolley (411 North Ave West)
- Flatiron Building (44 Elm St)
- 226 North Avenue West
- 333 Central Avenue
- Elite Properties (421-429, 418-448 South Ave W; 338 Windsor Ave)
- Savannah Condos (111 Prospect St)*

**While not recently approved, Savannah Condos is the most recent development to occur in the downtown study area prior to 2015 and is unlikely to change*

The scenario took into consideration the opportunity areas discussed above including redevelopment sites and properties in common ownership. Input from the developer/landowner meetings were also considered. In the 10-year projection of the buildout, some sites were recognized as areas of potential change, while others were likely to remain the same. It is important to point out that buildout analysis do not predict when or at what rate buildout will occur or where it will first

Methodology

Due to dramatic changes in travel patterns imposed by the COVID-19 pandemic, the study team was not able to collect new traffic counts during the study period. Instead, existing traffic counts for all intersections within the modeling area were generated using a third-party data vendor (StreetLight Data) based on pre-COVID traffic patterns from 2019 and calibrated using historical traffic counts provided by NJDOT, Union County, and the Town of Westfield. This process was performed through a collaborative process with another engineering firm, Kimley-Horn. Signal timings and plans were obtained from NJDOT, Union County, and/or the Town based on ownership and availability. Field verifications were conducted at two intersections along South Avenue (Summit Avenue and Central Avenue) to supplement and/or confirm data from the signal plans. Collectively, this information was used to develop the three traffic modeling scenarios described below.

Existing Conditions (2020) Scenario

Based on the traffic volumes derived using historical count and StreetLight Data, an existing conditions traffic model for the year 2020 was developed by Kimley-Horn using Synchro 10 software. WSP reviewed the model and worked closely with Kimley-Horn to troubleshoot the model prior to initiating any traffic analysis. The analysis was conducted for both the AM and PM peak hours to evaluate operations during times with the heaviest traffic (7:00-8:00 AM and 5:00-6:00 PM, respectively).

Future (2031) No-Build Scenario

This scenario was used solely as a basis of comparison for the Future 2031 Build scenario, as it accounts for background traffic growth within the region but does not include local traffic generated by proposed downtown redevelopment. A background growth rate was applied to existing traffic volumes to estimate traffic volumes for a 2031 “No Build” condition. The growth rate was developed based on the latest sociodemographic projections from NJTPA for 2035 along with NJTPA’s regional travel model (North Jersey Regional Transportation Model Enhanced). A Compound Annual Growth Rate (CAGR) between 2020 and 2031 of 0.26% was computed for the study area, which compounded results in a total growth of 3% over the 11-year period.

Future (2031) Build Scenario

The 2031 Build scenario models future traffic operations based on (a) regional traffic growth combined with (b) traffic generated from the hypothetical Buildout Scenario described in the earlier section. The Buildout Scenario’s developable footprint was used as the basis for determining the number of peak hour trips generated in the future condition.

To account for the mixed-use nature of Westfield’s downtown, which enables walking, biking, and transit trips, a hybrid approach to trip generation was utilized. WSP first used the ITE Trip Generation Manual, 10th Edition, to determine peak hour trips for each land use in the build-out scenario. Trip reduction factors were then developed based on ITE/EPA’s Mixed-Use Trip Generation Model to account for internal, walking, and transit trips expected within the study area. These factors were 17.5% in the AM peak and 18.5% in the PM peak. The final step was to distribute the peak hour trips to the intersections contained in the model. To perform this exercise, Origin and Destination (OD) studies were conducted using the StreetLight platform. The results of this analysis were used to expand trip generation estimates and distribute to the traffic network.

APPENDIX D

Commuter Parking Lots

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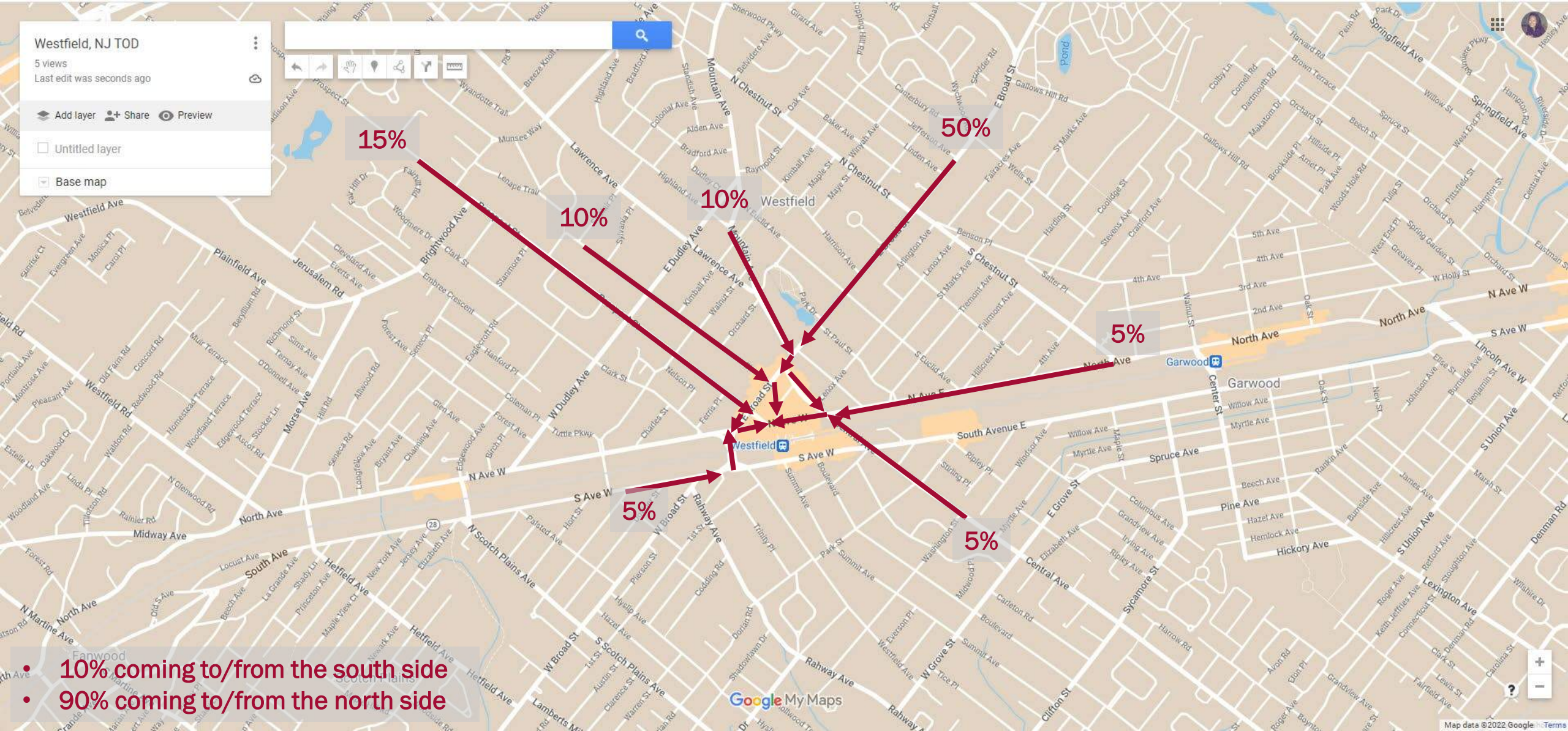
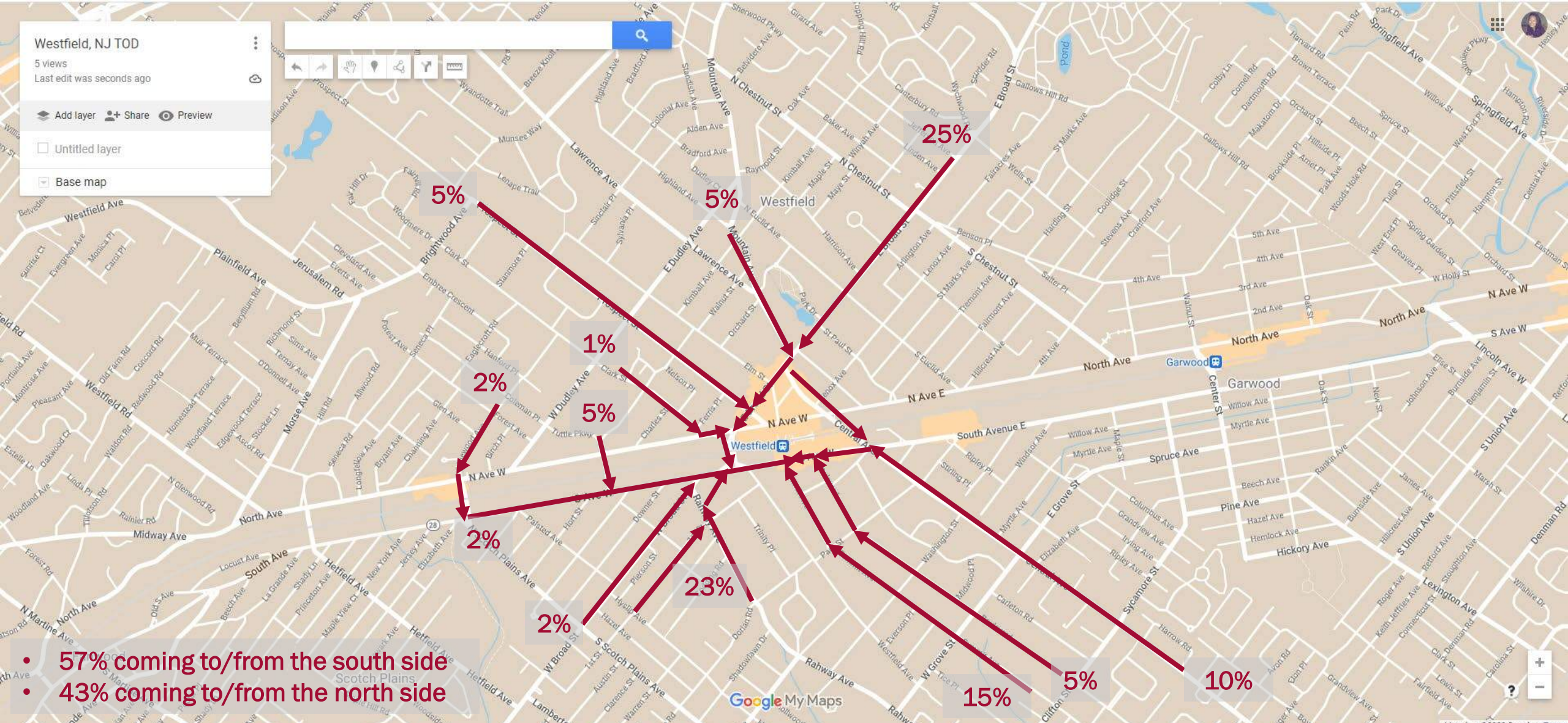
Distribution

North Zone – Current Distribution
Lot 8 (south of North Avenue) – commuter lot



- 10% coming to/from the south side
- 90% coming to/from the north side

South Zone – Current Distribution
Lot 3 (north of South Avenue) – commuter lot



- 57% coming to/from the south side
- 43% coming to/from the north side

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Parking Supply

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Pre-Development - Public Parking Facilities	Commuters		Employees		Shoppers	
	# of spaces	Distance to Station	# of spaces	Distance to Broad/Elm	# of spaces	Distance to Broad/Elm
Lot 2 (North)					68	600 ft
Lot 3 (South)	546	100 ft				
Lot 6 (South)	122	1,400 ft				
Lot 8 (North)	75	200 ft	106	1,000 ft		
Total	**743**		**106**		**68**	
Post-Development - Public Parking Facilities						
North District						
North District Public Garage	300	500 ft				
Reserved for Residential	(35)					
North District Public Surface Parking (Lot 8)	30	200 ft	30	900 ft		
Modify Plaza Design & Include Firehouse Parking (Lot 2)					28	700 ft
Sub Total	**295**		**30**		**28**	
South District						
South District Public Garage	200	100 ft				
South District Public Surface Parking (Lot 3)	100	100 ft				
South District (Lot 6)	122	1,400 ft				
Sub Total	**422**		**0**		**0**	
Total	**717**		**30**		**28**	
Post-Development - Primary Strategies						
Available Employee Parking (Lot 4)			30	500 ft		
Available On-Street Employee Parking			40	900 ft		
Available Commuter Spaces (Lot 6)	20	1,400 ft				
TNC Subsidy Program	50	N/A				
Sub Total	**70**		**70**		**0**	
Total Post-Development Facilities & Primary Strategies	**787**		**100**		**28**	
Post-Development - Contingency Strategies						
Available Supply in the West District Parking Garage	40	1,800 ft				
1 Level Vertical Expansion of North Garage			60	1,200 ft		
1 Level Vertical Expansion of South Garage	40	100 ft				
Lord and Taylor Lot	15	1,200 ft				
Lease Private Parking	50	N/A	20	N/A		
Alternative Mode Pilot Program (bike, e-scooter, etc.)	TBD		TBD		TBD	
Sub Total	**145**		**80**		**0**	

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Data Collection – TMC's

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Commuter Parking Lots with Adjustments (increase of 11%)

		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
ID	Location	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
1	Elm St/Westfield Public Parking Lot #2 & N Ave W	49	22	71	61	48	109	69	43	112	79	134	213	North Zone
2	Columbia Bank Dwy & N Ave W (egress only)	0	18	18	0	44	44							
3	Verizon and Limani Seafood Grill Dwy & N Ave W	20	3	23	18	42	60							
4	Lot #3 East Entrance & S Ave W	110	38	148	19	40	59	252	122	374	79	160	239	South Zone
5	Boulevard/ Lot #3 Center Entrance & S Ave W	0	36	36	0	40	40							
6	Summit Ave and Entrance to Westfield Train Station & S Ave W	123	47	170	56	74	130							
7	Parking lot Driveways next to BP Gas & S Ave W	19	2	21	4	6	10							
	Total	321	165	486	158	294	452	321	165	486	158	294	452	

Commuter Parking Lots with Adjustments (increase in the North Zone and decrease in the South Zone)

		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
ID	Location	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
1	Elm St/Westfield Public Parking Lot #2 & N Ave W	66	30	95	82	64	146	92	58	150	106	180	286	North Zone
2	Columbia Bank Dwy & N Ave W (egress only)	0	24	24	0	60	60							
3	Verizon and Limani Seafood Grill Dwy & N Ave W	27	4	31	24	57	80							
4	Lot #3 East Entrance & S Ave W	61	21	82	10	22	32	139	67	207	44	88	132	South Zone
5	Boulevard/ Lot #3 Center Entrance & S Ave W	0	20	20	0	22	22							
6	Summit Ave and Entrance to Westfield Train Station & S Ave W	68	26	94	31	41	72							
7	Parking lot Driveways next to BP Gas & S Ave W	10	1	12	2	3	6							
	Total	231	125	357	149	268	418	231	125	357	149	268	418	

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Data Collection – Parking Analysis

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Prepared by National Data & Surveying Services

Parking Study

Project: 22-340036
City: Westfield, NJ

Date: 4/5/2022
Day: Tuesday

Lot	Description	Space Type	Space	10:00 AM	12:00 AM	2:00 PM	4:00 PM	6:00 PM	8:00 PM
PKG-001	Pay Station Parking: Maximum of 4 Hrs	Regular	95	76	73	78	77	61	58
		Handicap	4	1	0	0	1	0	0
PKG-002	Pay Station Parking: Maximum of 4 Hrs	Regular	61	38	41	33	36	28	21
		Handicap	5	2	2	2	2	0	0
		Electric Vehicle Charging (2 Hrs Limit)	2	0	0	0	0	0	0
PKG-003	Employee Parking by Permit Only	Regular	61	42	47	44	38	36	37
		Handicap	4	3	3	4	2	2	2
PKG-004	Employee Parking by Permit Only	Regular	58	46	44	41	37	30	26
PKG-005	Permit Parking Only (Commuter)	Regular (Permit Parking Only)	60	56	56	51	49	43	38
PKG-006	Permit Parking Only (Commuter)	Regular (Permit Parking Only)	50	33	28	31	22	16	12
PKG-007	12 Hour Parking: Numbered Spaces	Regular	51	40	42	42	34	31	31
		Handicap	8	8	8	8	8	6	4
PKG-008	Permit Parking Only (Commuter)	Regular	413	395	396	391	384	313	278
PKG-009	12 Hour Parking: Numbered Spaces	Regular	22	19	19	17	16	12	8
		Handicap	2	1	1	1	0	0	0
PKG-010		Regular	21	17	16	16	14	13	13
		Handicap	2	0	0	0	0	0	0
		UBS	25	13	13	9	11	10	10
		Patient Parking	10	5	5	4	5	3	0
		Berkshire	6	3	3	2	2	0	0

Prepared by National Data & Surveying Services

Central Ave & AT&T NE Parking Lot Dwy

Peak Hour Turning Movement Count

ID: 22-340035-001
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	6:00 AM - 10:00 AM
NONE	NONE
05:15 PM - 06:15 PM	3:00 PM - 07:00 PM

CONTROL: No Control

	AM	NOON	PM
TEV	986	0	1129
PHF	0.92		0.97

SOUTHBOUND (Central Ave)

	L	T	R	U	Total	
AM	9	430	0	0	538	AM
NOON	0	0	0	0	0	NOON
PM	34	496	0	0	565	PM

EASTBOUND (AT&T NE Parking Lot Dwy)

AM	NOON	PM	
12	0	45	⇦
0	0	0	↶ 0
3	0	10	↱ 0
0	0	0	→ 1
6	0	22	↷ 0

WESTBOUND (AT&T NE Parking Lot Dwy)

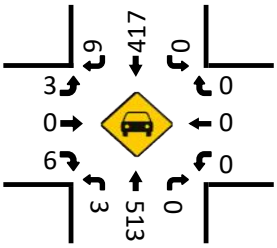
PM	NOON	AM	
0	0	0	0 ↷
0	0	0	0 ←
0	0	0	0 ↶
0	0	0	0 ↷
0	0	0	⇨

NORTHBOUND (Central Ave)

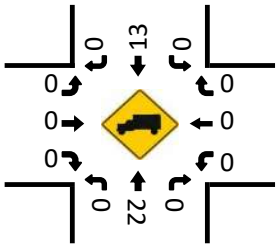
	L	T	R	U	Total	
PM	519	1	11	555	0	PM
NOON	0	0	0	0	0	NOON
AM	436	0	3	535	0	AM

Turning movements: 0 1 0 0 (SB) · 0 0 1 0 (NB) · 0 0 0 0 (EB) · 0 0 0 0 (WB)

Cars (AM)



HT (AM)



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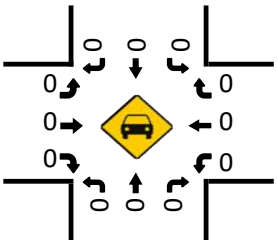

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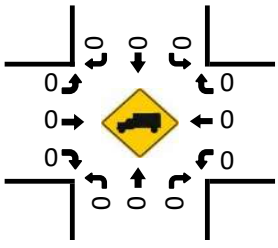
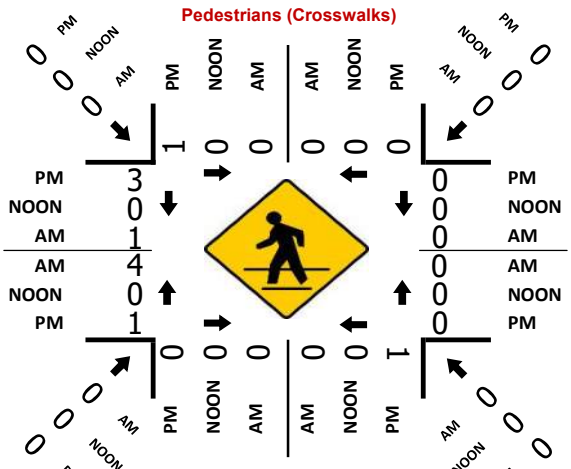


Pedestrians (Crosswalks)


PM
NOON
AM
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Prepared by National Data & Surveying Services

Verizon and Limani Seafood Grill Dwy & N Ave W

Peak Hour Turning Movement Count

ID: 22-340035-002
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	6:00 AM - 10:00 AM
NONE	NONE
04:45 PM - 05:45 PM	3:00 PM - 07:00 PM

SOUTHBOUND — Verizon and Limani Seafood Grill Dwy

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM
	0	0	0	0		

EASTBOUND — N Ave W

AM	NOON	PM	
700	0	787	
0	0	0	0
0	0	0	0
557	0	568	2
4	0	5	0
AM	NOON	PM	

WESTBOUND — N Ave W

PM	NOON	AM	
0	0	0	0
786	0	700	2
5	0	20	0
0	0	0	0
598	0	564	
PM	NOON	AM	

CONTROL

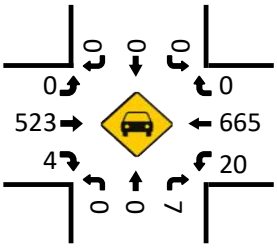
No Control

	AM	NOON	PM
TEV	1288	0	1395
PHF	0.94		0.97

NORTHBOUND — Verizon and Limani Seafood Grill Dwy

	0	0	1	0		
PM	10	0	1	0	30	PM
NOON	0	0	0	0	0	NOON
AM	24	0	0	0	7	AM

Cars (AM)



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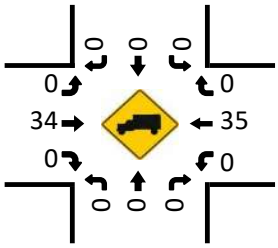

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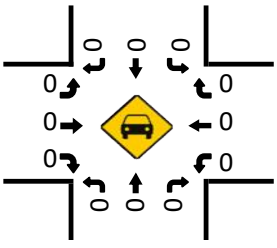

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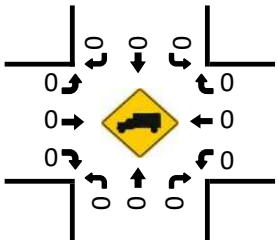

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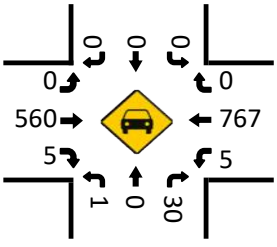

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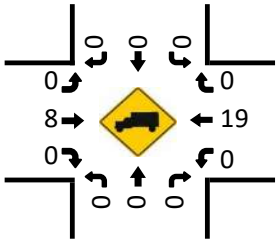
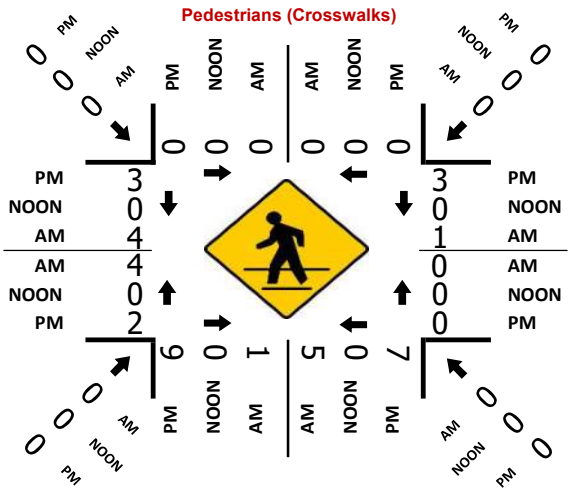


Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

Westfield Health & Rehabilitation Dwy & N Ave W

Peak Hour Turning Movement Count

ID: 22-340035-003
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	6:00 AM - 10:00 AM
NONE	NONE
04:45 PM - 05:45 PM	3:00 PM - 07:00 PM

SOUTHBOUND — Westfield Health & Rehabilitation Dwy

AM	3	0	0	1	8	AM
NOON	0	0	0	0	0	NOON
PM	35	0	10	0	35	PM

EASTBOUND — N Ave W

AM	NOON	PM	
700	0	803	⇦
0	0	0	↶ 0
3	0	15	↱ 0
566	0	567	→ 2
0	0	0	↴ 0

WESTBOUND — N Ave W

PM	NOON	AM	
20	0	4	↰ 0
768	0	697	← 2
0	0	0	↙ 0
0	0	0	↶ 0
577	0	566	⇨

NORTHBOUND — Westfield Health & Rehabilitation Dwy

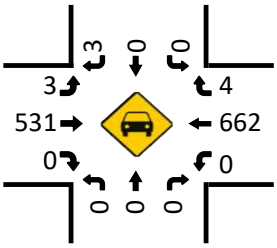
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

	0	1	0	0
	0	0	0	0

CONTROL: No Control

TEV	1274 AM	0 NOON	1415 PM
PHF	0.93		0.95

Cars (AM)



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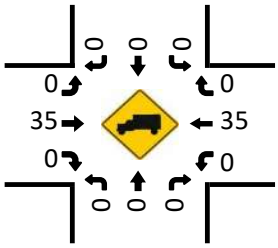

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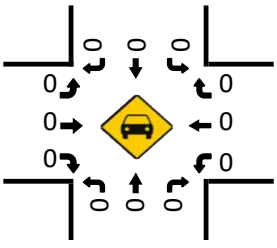

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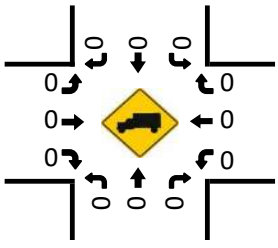
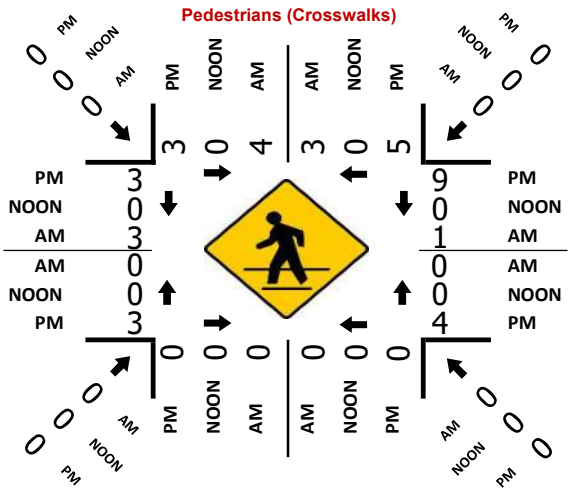
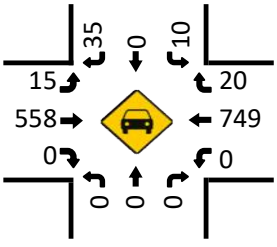


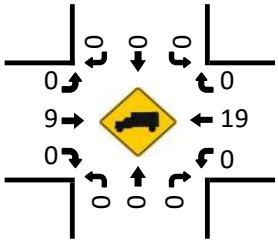
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Columbia Bank Dwy & N Ave W

Peak Hour Turning Movement Count

ID: 22-340035-004
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	6:00 AM - 10:00 AM
NONE	NONE
04:45 PM - 05:45 PM	3:00 PM - 07:00 PM

SOUTHBOUND (Columbia Bank Dwy)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (N Ave W)

AM	NOON	PM	
698	0	804	⇦
0	0	0	↰ 0
0	0	0	↱ 0
555	0	556	→ 2
0	0	0	↳ 0
AM	NOON	PM	

WESTBOUND (N Ave W)

PM	NOON	AM	
0	0	0	0 ↰
802	0	698	2 ←
0	0	0	0 ↰
0	0	0	0 ↰
582	0	568	⇨
PM	NOON	AM	

NORTHBOUND (Columbia Bank Dwy)

PM	0	0	2	0	26	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	13	AM

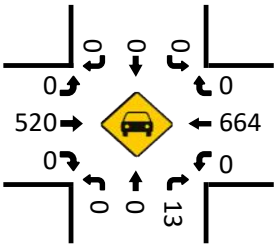
0	0	0	1
↰	↰	↑	↱

CONTROL

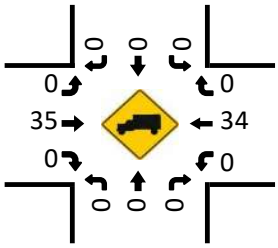
No Control

TEV	1266 AM	0 NOON	1386 PM
PHF	0.92		0.95

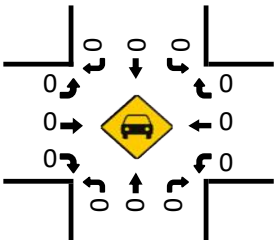
Cars (AM)



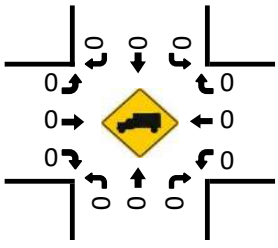
HT (AM)



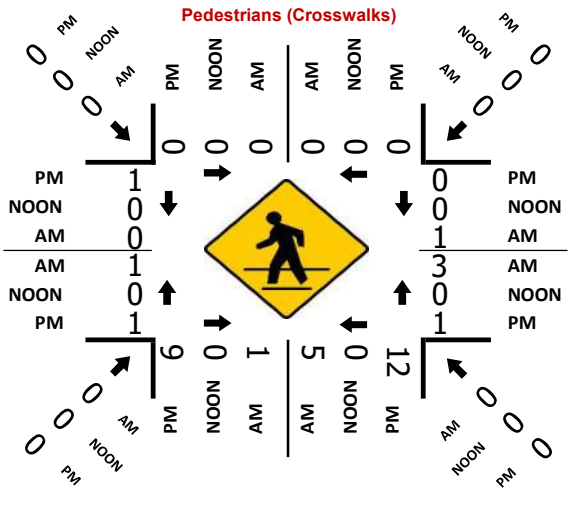
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM 1
NOON 0
AM 0
AM 1
NOON 0
PM 1
0 0 0 0 0 0
0 0 0 0 0 0
0 0 0 0 0 0
0 0 0 0 0 0
PM 0
NOON 0
AM 1
AM 3
NOON 0
PM 1
0 0 0 0 0 0
0 0 0 0 0 0
0 0 0 0 0 0
0 0 0 0 0 0

Prepared by National Data & Surveying Services

Elm St/Westfield Public Parking Lot #2 & N Ave W

Peak Hour Turning Movement Count

ID: 22-340035-005
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	6:00 AM - 10:00 AM
NONE	NONE
05:15 PM - 06:15 PM	3:00 PM - 07:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	1342	0	1525
PHF	0.90		0.96

SOUTHBOUND (Elm St/Westfield Public Parking Lot #2)

	Left	Thru	Right	U-Turn	Total
AM	23	13	73	0	116
NOON	0	0	0	0	0
PM	115	19	103	0	149

EASTBOUND (N Ave W)

	Left	Thru	Right	U-Turn
AM	634	0	801	
NOON	0	0	0	0
PM	23	0	29	0
	480	0	402	2
	22	0	21	0

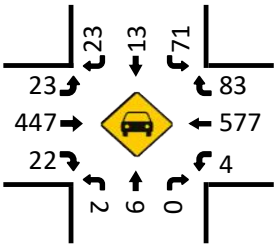
WESTBOUND (N Ave W)

	Left	Thru	Right	U-Turn
PM	104	0	84	0
NOON	670	0	609	2
AM	21	0	4	0
	0	0	0	0
	514	0	553	

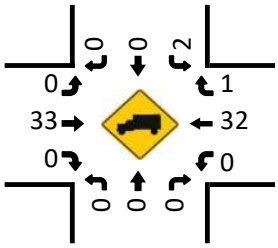
NORTHBOUND (Elm St/Westfield Public Parking Lot #2)

	Left	Thru	Right	U-Turn	Total
PM	61	0	16	16	9
NOON	0	0	0	0	0
AM	39	0	2	9	0

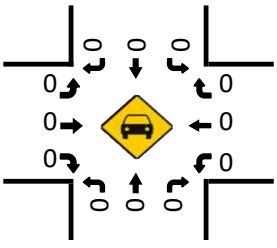
Cars (AM)



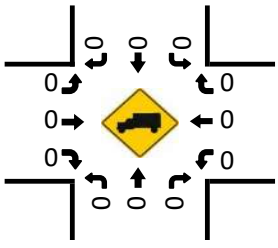
HT (AM)



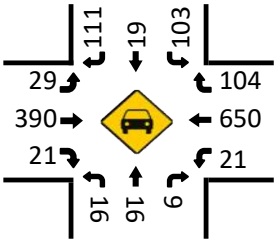
Cars (NOON)



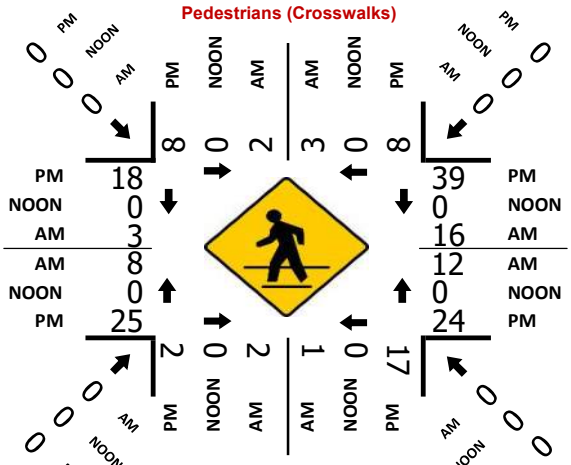
HT (NOON)



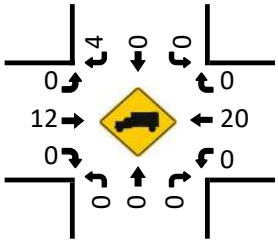
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



Prepared by National Data & Surveying Services

Lot #3 East Entrance & S Ave W

Peak Hour Turning Movement Count

ID: 22-340035-006
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	6:00 AM - 10:00 AM
NONE	NONE
05:15 PM - 06:15 PM	3:00 PM - 07:00 PM

SOUTHBOUND (Lot #3 East Entrance)

AM	21	0	13	0	46	AM
NOON	0	0	0	0	0	NOON
PM	28	0	18	0	19	PM

EASTBOUND (S Ave W)

AM	NOON	PM	
459	0	560	⇦
0	0	0	↶ 0
23	0	5	↱ 0
736	0	693	→ 1
0	0	0	↴ 0

WESTBOUND (S Ave W)

PM	NOON	AM	
14	0	23	0 ↰
532	0	438	2 ←
0	0	0	0 ↙
0	0	0	0 ↶
711	0	749	⇨

NORTHBOUND (Lot #3 East Entrance)

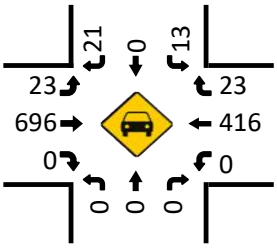
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

CONTROL

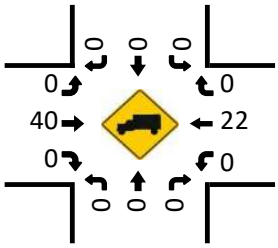
No Control

TEV	1254 AM	0 NOON	1290 PM
PHF	0.94		0.97

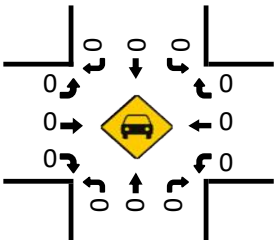
Cars (AM)



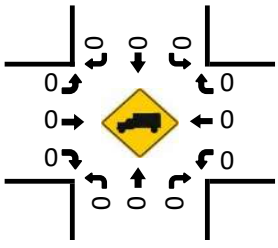
HT (AM)



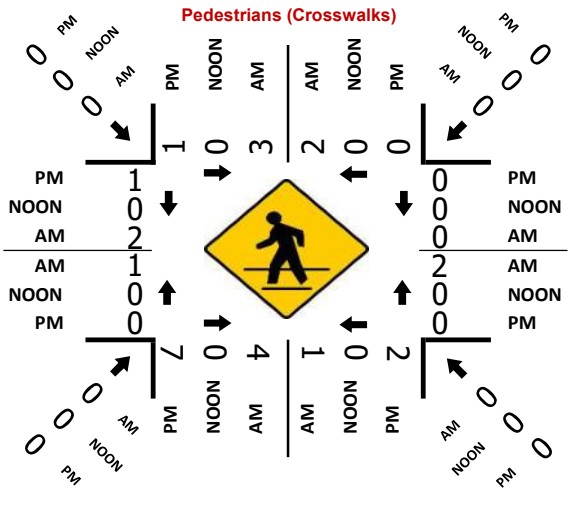
Cars (NOON)



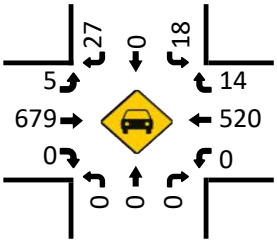
HT (NOON)



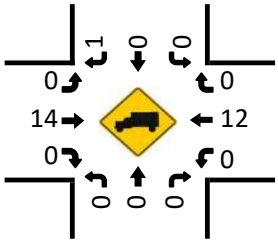
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Boulevard/ Lot #3 Center Entrance & S Ave W

Peak Hour Turning Movement Count

ID: 22-340035-007
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	6:00 AM - 10:00 AM
NONE	NONE
05:15 PM - 06:15 PM	3:00 PM - 07:00 PM

CONTROL: 1-Way Stop (NB)

	AM	NOON	PM
TEV	1332	0	1393
PHF	0.94		0.99

SOUTHBOUND (Boulevard/ Lot #3 Center Entrance)

	Left	Thru	Right	U-Turn	
AM	14	1	0	0	0 AM
NOON	0	0	0	0	0 NOON
PM	44	6	0	0	0 PM

EASTBOUND (S Ave W)

	Left	Thru	Right	
AM	501	0	610	1
NOON	0	0	0	0
PM	607	0	613	1

	Left	Thru	Right	
AM	0	0	0	0
NOON	0	0	0	0
PM	52	0	46	0

WESTBOUND (S Ave W)

	Left	Thru	Right	
AM	0	0	0	0
NOON	532	0	440	2
PM	29	0	19	0

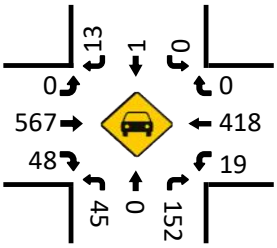
	Left	Thru	Right	
AM	0	0	0	0
NOON	0	0	0	0
PM	701	0	759	

NORTHBOUND (Boulevard/ Lot #3 Center Entrance)

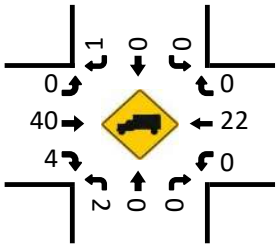
	Left	Thru	Right	U-Turn	
AM	72	0	47	0	152 AM
NOON	0	0	0	0	0 NOON
PM	82	1	34	0	88 PM

0 0 1 0

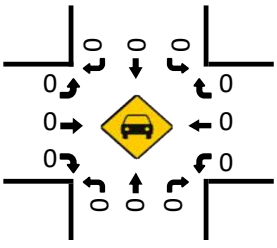
Cars (AM)



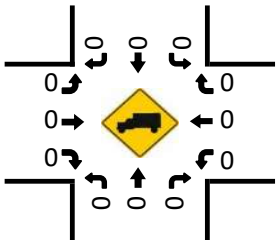
HT (AM)



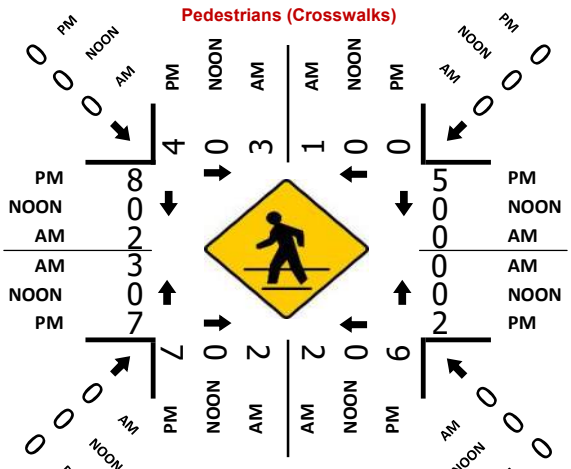
Cars (NOON)



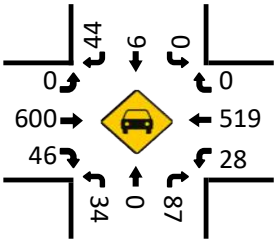
HT (NOON)



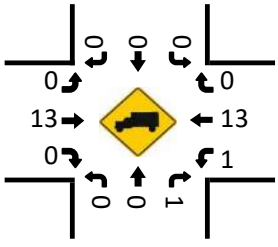
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Summit Ave and Entrance to Westfield Train Station & S Ave W

Peak Hour Turning Movement Count

ID: 22-340035-008
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	6:00 AM - 10:00 AM
NONE	NONE
05:15 PM - 06:15 PM	3:00 PM - 07:00 PM

SOUTHBOUND — Summit Ave and Entrance to Westfield Train Station

	Left	Thru	Right	U-Turn	Total	
AM	14	5	5	0	61	AM
NOON	0	0	0	0	0	NOON
PM	38	21	25	0	47	PM

EASTBOUND — S Ave W

	Left	Thru	Right	U-Turn	
AM	655	0	701		AM
NOON	0	0	0	0	NOON
PM	24	0	21	0	PM
AM	613	0	588	1	AM
NOON	38	0	30	0	NOON
PM	76	0	90	13	PM
NOON	0	0	0	0	NOON
AM	53	0	169	25	AM

WESTBOUND — S Ave W

	Left	Thru	Right	U-Turn	
PM	13	0	12	0	PM
NOON	573	0	472	2	NOON
AM	25	0	10	0	AM
PM	0	0	0	0	PM
NOON	654	0	655		NOON
AM	41	37	0	1	AM
NOON	0	0	0	0	NOON
PM	17	1	13	6	PM

NORTHBOUND — Summit Ave and Entrance to Westfield Train Station

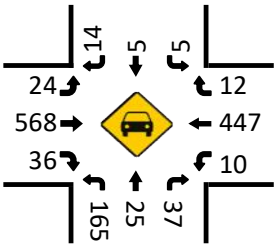
	Left	Thru	Right	U-Turn	Total	
PM	10	0	6	4	20	PM
NOON	0	0	0	0	0	NOON
AM	6	8	0	4	18	AM
AM	8	0	4	6	18	AM
NOON	0	0	0	0	0	NOON
PM	4	6	3	4	17	PM

CONTROL

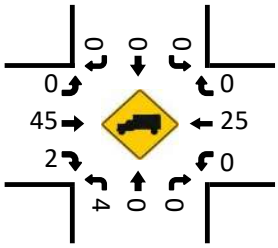
Signalized

TEV	1424 AM	0 NOON	1478 PM
PHF	0.96		0.96

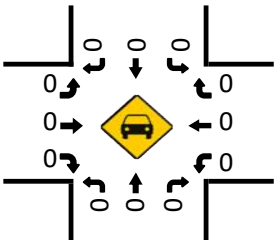
Cars (AM)



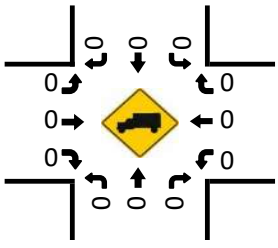
HT (AM)



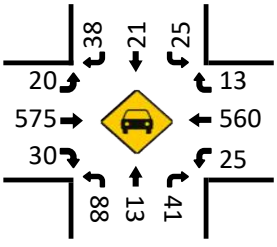
Cars (NOON)



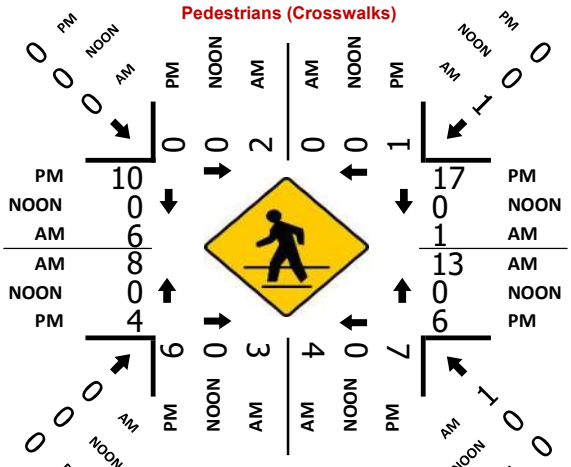
HT (NOON)



Cars (PM)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
2
0
0
1
0
0
0
1
0
PM
10
0
6
AM
AM
8
0
4
NOON
PM
17
0
1
AM
13
0
6
NOON
PM
0
0
0
0
0
0
0
0
0
0
0

Prepared by National Data & Surveying Services

Parking lot Driveways next to BP Gas & S Ave W

Peak Hour Turning Movement Count

ID: 22-340035-009
City: Westfield

Day: Tuesday
Date: 4/5/2022

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	6:00 AM - 10:00 AM
NONE	NONE
05:15 PM - 06:15 PM	3:00 PM - 07:00 PM

SOUTHBOUND — Parking lot Driveways next to BP Gas

AM	3	0	1	0	6	AM
NOON	0	0	0	0	0	NOON
PM	5	0	0	0	5	PM

EASTBOUND — S Ave W

AM	NOON	PM	
654	0	707	⇦
0	0	0	↶ 0
2	0	3	↱ 0
675	0	641	→ 1
0	0	0	↴ 0

WESTBOUND — S Ave W

PM	NOON	AM	
2	0	4	↰ 0
702	0	651	← 2
0	0	0	↙ 0
0	0	0	↶ 0
641	0	676	⇨

NORTHBOUND — Parking lot Driveways next to BP Gas

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

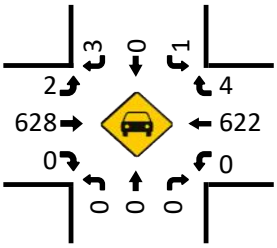
0	1	0	0
0	0	0	0

CONTROL

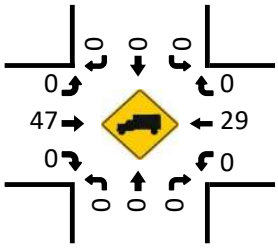
No Control

TEV	1336 AM	0 NOON	1353 PM
PHF	0.97		0.96

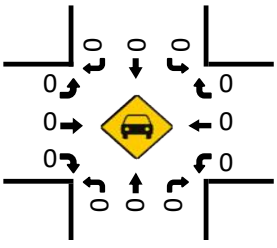
Cars (AM)



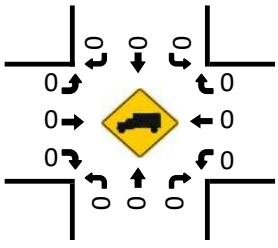
HT (AM)



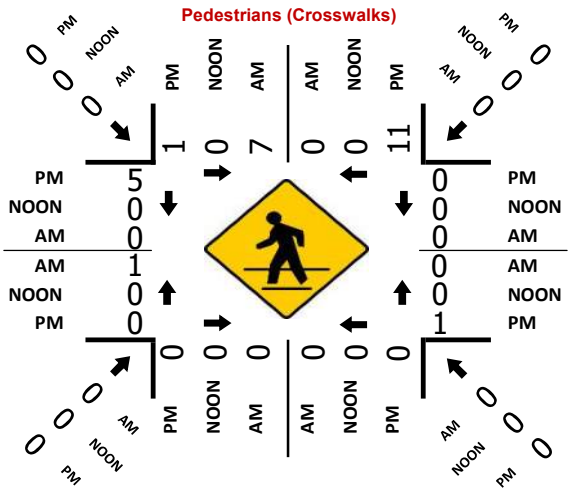
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
1
0
7
0
0
11
5
0
0
0
0
0
1
0
0
0
0
0
0
0
0
0
0
0
0
0

APPENDIX E

Trip Generation

	Census Tract 366, Union County, New Jersey	
	Estimate	Percent
Car – drove alone + carpooled	1,361	65.3%
Public Transportation (excluding taxicab)	538	25.8%
Walked	46	2.2%
Bicycle	-	0.0%
Taxicab, motorcycle, or other means	13	0.6%
Worked at home	125	6.0%
Total	2,083	
Multimodal Reduction		34.0%

ACS 2019 5-Year Estimates

AM PEAK HOUR TRIP GENERATION

EXISTING WEEKDAY AM PEAK HOUR TRIP GENERATION (L&T WEST ZONE)

ITE TRIP GENERATION CHARACTERISTICS						DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	Land Use Type	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	CC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
Department Store	Retail	11	875	143.836	KSF	64%	36%	53	30	83	22.2%	18	41	24	65	0.0%	0	41	24	65	6.07%	5	38	22	60	0.0%	0	38	22	60
ITE Land Use Code			Rate or Equation				**Total:**	**53**	**30**	**83**	**21.7%**	**18**	**41**	**24**	**65**	**0.0%**	**0**	**41**	**24**	**65**	**7.8%**	**5**	**38**	**22**	**60**	**0.0%**	**0**	**38**	**22**	**60**
875			Y=0.58(X)																											

PM PEAK HOUR TRIP GENERATION

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION (L&T WEST ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
					Percent																								
Land Use	ITE Edition	ITE Code	Scale	ITE Units	In	Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	CC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
Department Store	11	875	143.836	KSF	50%	50%	140	140	280	22.2%	62	109	109	218	0.0%	0	109	109	218	7.37%	21	99	98	197	0.0%	0	99	98	197
ITE Land Use Code		Rate or Equation				**Total:**	**140**	**140**	**280**	**22.1%**	**62**	**109**	**109**	**218**	**0.0%**	**0**	**109**	**109**	**218**	**9.5%**	**21**	**99**	**98**	**197**	**0.0%**	**0**	**99**	**98**	**197**
875		Y=1.95(X)																											

SATURDAY MIDDAY PEAK HOUR TRIP GENERATION

EXISTING SATURDAY MIDDAY PEAK HOUR TRIP GENERATION (L&T WEST ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
					Percent																								
Land Use	ITE Edition	ITE Code	Scale	ITE Units	In	Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	CC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
Department Store	11	875	143.836	KSF	53%	47%	263	233	496	22.2%	110	205	181	386	0.0%	0	205	181	386	6.72%	33	187	166	353	0.0%	0	187	166	353
						Total:	**263**	**233**	**496**	**22.2%**	**110**	**205**	**181**	**386**	**0.0%**	**0**	**205**	**181**	**386**	**8.6%**	**33**	**187**	**166**	**353**	**0.0%**	**0**	**187**	**166**	**353**

ITE Land Use Code	Rate or Equation
875	Y=3.45(X)

Preliminary Traffic Engineering Assessment
Westfield Transit Oriented Development (TOD)
Town of Westfield
Union County, New Jersey

Saturday Trip Ratios - Residential

215 - Single-Family Attached Housing

General Urban/Suburban

AM	0.48	AMT/AM	0.81
PM	0.57	PMT/PM	0.51
SAT	0.57		

Dense Multi-Use Urban

		AVG	0.66
AMT	0.39		
PMT	0.29		

SATT = SAT * AVG of Dense Multi-Use Urban over General Urban/Suburban	0.38

221 - Multifamily Housing (Mid-Rise)

General Urban/Suburban

AM	0.37	AMT/AM	0.68
PM	0.39	PMT/PM	0.64
SAT	0.39		

Dense Multi-Use Urban

		AVG	0.66
AMT	0.25		
PMT	0.25		

SATT = SAT * AVG of Dense Multi-Use Urban over General Urban/Suburban	0.26

223 - Affordable Housing - Income Limits

General Urban/Suburban

AM	0.36
PM	0.46
SAT	1.28

Dense Multi-Use Urban

AMT	0.5
PMT	0.36

SATT	0.46	per ITE

Source: ITE Trip Generation Manual, 11th Edition

AM PEAK HOUR TRIP GENERATION

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION (NORTH ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
	ITE	ITE		ITE	Percent						MR					IC					CC					PB			
Land Use	Edition	Code	Scale	Units	In	Out	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total
Multifamily (Mid-Rise)	10	221	35	DU	26%	74%	3	10	13	38.2%	5	2	6	8	22.2%	2	2	4	6	6.07%	0	2	4	6	0.0%	0	2	4	6
Quality Restaurant	10	931	2.11	KSF	56%	44%	5	4	9	22.2%	2	4	3	7	15.4%	1	3	3	6	6.07%	0	3	3	6	10.0%	1	3	2	5
ITE Land Use Code		Rate or Equation				**Total:**	**8**	**14**	**22**	**31.8%**	**7**	**6**	**9**	**15**	**13.3%**	**3**	**5**	**7**	**12**	**0.00%**	**0**	**5**	**7**	**12**	**8.1%**	**1**	**5**	**6**	**11**
221		Y=0.36(X)			Based upon NJDOT's HAPS																								
931		Y=4.47(X)			Based upon NJDOT's HAPS																								

PM PEAK HOUR TRIP GENERATION

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION (NORTH ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
	ITE	ITE		ITE	Percent						MR					IC					CC					PB			
Land Use	Edition	Code	Scale	Units	In	Out	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total
Multifamily (Mid-Rise)	10	221	35	DU	61%	39%	9	6	15	38.2%	6	5	4	9	22.2%	2	4	3	7	7.37%	1	4	2	6	0.0%	0	4	2	6
Quality Restaurant	10	931	2.11	KSF	58%	42%	10	7	17	22.2%	4	8	5	13	15.4%	2	7	4	11	7.37%	1	6	4	10	10.0%	1	6	3	9
						Total:	**19**	**13**	**32**	**31.3%**	**10**	**13**	**9**	**22**	**18.2%**	**4**	**11**	**7**	**18**	**11.1%**	**2**	**10**	**6**	**16**	**6.3%**	**1**	**10**	**5**	**15**

ITE Land Use Code	Rate or Equation	
221	Y=0.44(X)	Based upon NJDOT's HAPS
931	Y=8.28(X)	Based upon NJDOT's HAPS

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

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

INPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	0	0	0	0
Retail	0	0	0	0
Restaurant	4	3	8	5
Cinema/Entertainment	0	0	0	0
Residential	2	6	5	4
Hotel	0	0	0	0
	6	9	13	9

INTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	0	0	0	0
Retail	0	0	0	0
Restaurant	1	0	1	1
Cinema/Entertainment	0	0	0	0
Residential	0	1	1	1
Hotel	0	0	0	0
	1	1	2	2

OUTPUT

Total % Reduction	***13.3%***	***18.2%***
Office		
Retail		
Restaurant	14.3%	15.4%
Cinema/Entertainment		
Residential	12.5%	22.2%
Hotel		

EXTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	0	0	0	0
Retail	0	0	0	0
Restaurant	3	3	7	4
Cinema/Entertainment	0	0	0	0
Residential	2	5	4	3
Hotel	0	0	0	0
	5	8	11	7

SATURDAY MIDDAY PEAK HOUR TRIP GENERATION

PROPOSED SATURDAY MIDDAY PEAK HOUR TRIP GENERATION (NORTH ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
	ITE	ITE		ITE	Percent						MR					IC					CC					PB			
Land Use	Edition	Code	Scale	Units	In	Out	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total
Multifamily (Mid-Rise)	10	221	35	DU	51%	49%	8	7	15	38.2%	6	5	4	9	22.2%	2	4	3	7	6.72%	0	4	3	7	0.0%	0	4	3	7
Quality Restaurant	10	931	2.11	KSF	59%	41%	14	9	23	22.2%	5	11	7	18	11.1%	2	10	6	16	6.72%	1	9	6	15	10.0%	1	9	5	14
					Total:		**22**	**16**	**38**	**28.9%**	**11**	**16**	**11**	**27**	**14.8%**	**4**	**14**	**9**	**23**	**4.3%**	**1**	**13**	**9**	**22**	**4.5%**	**1**	**13**	**8**	**21**

ITE Land Use Code	Rate or Equation	
221	Y=0.44(X)	Based upon NJDOT's HAPS
931	Y=10.68(X)	Based upon NJDOT's HAPS

Internal Capture Reduction Calculations

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

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

INPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	0	0
Retail	0	0
Restaurant	11	7
Cinema/Entertainment	0	0
Residential	5	4
Hotel	0	0
	16	11

INTERNAL TRIPS

OUTPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	0	0
Retail	0	0
Restaurant	1	1
Cinema/Entertainment	0	0
Residential	1	1
Hotel	0	0
	2	2

OUTPUT

Total % Reduction	***14.8%***
Office	
Retail	
Restaurant	11.1%
Cinema/Entertainment	
Residential	22.2%
Hotel	

EXTERNAL TRIPS

OUTPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	0	0
Retail	0	0
Restaurant	10	6
Cinema/Entertainment	0	0
Residential	4	3
Hotel	0	0
	14	9

AM PEAK HOUR TRIP GENERATION

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION (WEST ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
	ITE	ITE		ITE	Percent						MR					IC					CC					PB			
Land Use	Edition	Code	Scale	Units	In	Out	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total
Single-Family Attached Housing	11	215	16	DU	33%	67%	2	4	6	0.0%	0	2	4	6	4.3%	0	2	4	6	6.07%	0	2	4	6	0.0%	0	2	4	6
Multifamily Housing (Mid-Rise)	11	221	138	DU	15%	85%	5	30	35	0.0%	0	5	30	35	4.3%	2	5	28	33	6.07%	2	5	26	31	0.0%	0	5	26	31
Single-Family Attached Housing	11	215	34	DU	33%	67%	2	4	6	0.0%	0	2	4	6	4.3%	0	2	4	6	6.07%	0	2	4	6	0.0%	0	2	4	6
General Office Building	11	710	40	ksf	87%	13%	47	7	54	0.0%	0	47	7	54	3.8%	2	46	6	52	6.07%	3	43	6	49	0.0%	0	43	6	49
Medical-Dental Office Building	11	720	60	ksf	79%	21%	120	32	152	33.2%	50	80	22	102	3.8%	4	78	20	98	6.07%	6	73	19	92	0.0%	0	73	19	92
Strip Retail Plaza	11	822	2.5	ksf	60%	40%	7	5	12	22.2%	3	5	4	9	44.4%	4	3	2	5	6.07%	0	3	2	5	34.0%	2	2	1	3
Fine Dining Restaurant	11	931	10.8	ksf	80%	20%	6	2	8	22.2%	2	4	2	6	40.0%	2	3	1	4	6.07%	0	3	1	4	10.0%	0	3	2	4
						Total:	**189**	**84**	**273**	**20.1%**	**55**	**145**	**73**	**218**	**7.3%**	**14**	**139**	**65**	**204**	**5.6%**	**11**	**131**	**62**	**193**	**1.0%**	**2**	**130**	**61**	**191**

ITE Land Use Code	Rate or Equation	
215	Y=0.39(X)	From ITE Web-based App (Dense Multi-Use Urban)
221	Y=0.25(X)	From ITE Web-based App (Close to Rail Transit/Dense Multi-Use Urban)
710	Y=0.72(X) + 25.14	From ITE Web-based App (Dense Multi-Use Urban)
720	LN(Y) = 0.9*LN(X)+1.34	
822	LN(Y) = 0.66*LN(X)+1.84	
931	Y=0.73(X)	

PM PEAK HOUR TRIP GENERATION

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION (WEST ZONE)

ITE TRIP GENERATION CHARACTERISTICS						DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	Land Use Type	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	CC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
Single-Family Attached Housing	Residential	11	215	16	DU	63%	37%	3	2	5	0.0%	0	3	2	5	28.9%	2	2	1	3	7.37%	0	2	1	3	0.0%	0	2	1	3
Multifamily Housing (Mid-Rise)	Residential	11	221	138	DU	74%	26%	26	9	35	0.0%	0	26	9	35	28.9%	10	19	6	25	7.37%	2	18	5	23	0.0%	0	18	5	23
Single-Family Attached Housing	Residential	11	215	16	DU	63%	37%	3	2	5	0.0%	0	3	2	5	28.9%	2	2	1	3	7.37%	0	2	1	3	0.0%	0	2	1	3
General Office Building	Office	11	710	40	ksf	16%	84%	7	34	41	0.0%	0	7	34	41	2.5%	1	7	33	40	7.37%	3	6	31	37	0.0%	0	6	31	37
Medical-Dental Office Building	Office	11	720	60	ksf	30%	70%	72	169	241	33.2%	80	48	114	161	2.5%	4	46	112	157	7.37%	13	42	102	144	0.0%	0	42	102	144
Strip Retail Plaza	Retail	11	822	2.5	ksf	50%	50%	15	15	30	22.2%	7	12	11	23	45.0%	10	7	6	13	7.37%	1	6	6	12	34.0%	4	4	4	8
Fine Dining Restaurant	Restaurant	11	931	10.8	ksf	67%	33%	56	28	84	22.2%	19	44	21	65	26.2%	17	38	10	48	7.37%	4	35	9	44	10.0%	4	31	9	40
							Total:	**182**	**259**	**441**	**24.0%**	**106**	**143**	**193**	**335**	**13.4%**	**46**	**121**	**169**	**289**	**7.4%**	**21**	**111**	**155**	**267**	**3.0%**	**8**	**105**	**152**	**258**

ITE Land Use Code	Rate or Equation	
215	Y=0.29(X)	From ITE Web-based App (Dense Multi-Use Urban)
221	Y=0.24(X) + 2.00	From ITE Web-based App (Close to Rail Transit/Dense Multi-Use Urban)
710	Y=0.83(X) + 7.46	From ITE Web-based App (Dense Multi-Use Urban)
720	Y=4.07*(X)+-3.17	
822	LN(Y) = 0.71*LN(X)+2.72	
931	Y=7.8(X)	

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

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

INPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	127	29	55	148
Retail	5	4	12	11
Restaurant	4	2	44	21
Cinema/Entertainment	0	0	0	0
Residential	9	38	32	13
Hotel	0	0	0	0
	145	73	143	193

INTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	3	3	2	3
Retail	2	2	5	5
Restaurant	2	2	6	11
Cinema/Entertainment	0	0	0	0
Residential	0	2	8	5
Hotel	0	0	0	0
	7	9	21	24

OUTPUT

Total % Reduction	***7.3%***	***13.4%***
Office	3.8%	2.5%
Retail	44.4%	45.0%
Restaurant	66.7%	26.2%
Cinema/Entertainment		
Residential	4.3%	28.9%
Hotel		

EXTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	124	26	53	145
Retail	3	2	7	6
Restaurant	2	0	38	10
Cinema/Entertainment	0	0	0	0
Residential	9	36	24	8
Hotel	0	0	0	0
	138	64	122	169

SATURDAY MIDDAY PEAK HOUR TRIP GENERATION

PROPOSED SATURDAY MIDDAY PEAK HOUR TRIP GENERATION (WEST ZONE)

ITE TRIP GENERATION CHARACTERISTICS						DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
Land Use	Land Use Type	ITE Edition	ITE Code	Scale	ITE Units	Percent In	Percent Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	CC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
Single-Family Attached Housing	Residential	11	215	16	DU	48%	52%	3	3	6	0.0%	0	3	3	6	29.2%	2	2	2	4	6.72%	0	2	2	4	0.0%	0	2	2	4
Multifamily Housing (Mid-Rise)	Residential	11	221	138	DU	51%	49%	18	18	36	0.0%	0	18	18	36	29.2%	11	13	12	25	6.72%	2	12	11	23	0.0%	0	12	11	23
Single-Family Attached Housing	Residential	11	215	16	DU	48%	52%	3	3	6	0.0%	0	3	3	6	29.2%	2	2	2	4	6.72%	0	2	2	4	0.0%	0	2	2	4
General Office Building	Office	11	710	40	ksf	8%	92%	1	6	7	0.0%	0	1	6	7	3.1%	0	1	6	7	6.72%	0	1	6	7	0.0%	0	1	6	7
Medical-Dental Office Building	Office	11	720	60	ksf	57%	43%	103	78	181	33.2%	60	69	52	121	3.1%	4	67	50	117	6.72%	8	62	47	109	0.0%	0	62	47	109
Strip Retail Plaza	Retail	11	822	2.5	ksf	51%	49%	8	8	16	22.2%	4	6	6	12	50.0%	7	3	2	5	6.72%	0	3	2	5	34.0%	2	2	1	3
Fine Dining Restaurant	Restaurant	11	931	10.8	ksf	59%	41%	45	32	77	22.2%	17	35	25	60	26.7%	16	27	17	44	6.72%	3	25	16	41	10.0%	4	23	14	37
							Total:	**181**	**148**	**329**	**24.6%**	**81**	**135**	**113**	**248**	**16.5%**	**42**	**115**	**91**	**206**	**6.2%**	**13**	**107**	**86**	**193**	**3.1%**	**6**	**104**	**83**	**187**

ITE Land Use Code	Rate or Equation	
215	Y=0.38(X)	Calculated Rate, which accounts for Transit/Multimodal Reduction
221	Y=0.26(X)	Calculated Rate, which accounts for Transit/Multimodal Reduction
710	Y=0.17(X)	Calculated Rate, which accounts for Transit/Multimodal Reduction
720	Y=3.02(X)	
822	Y=6.57(X)	
931	Y=7.16(X)	

Internal Capture Reduction Calculations

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

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

INPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	70	58
Retail	**6**	**6**
Restaurant	35	25
Cinema/Entertainment	0	0
Residential	24	24
Hotel	0	0
	135	113

INTERNAL TRIPS

OUTPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	2	2
Retail	**3**	**4**
Restaurant	8	8
Cinema/Entertainment	0	0
Residential	7	7
Hotel	0	0
	20	21

OUTPUT

Total % Reduction	***16.5%***
Office	3.1%
Retail	50.0%
Restaurant	26.7%
Cinema/Entertainment	
Residential	29.2%
Hotel	

EXTERNAL TRIPS

OUTPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	68	56
Retail	3	2
Restaurant	27	17
Cinema/Entertainment	0	0
Residential	17	17
Hotel	0	0
	115	92

AM PEAK HOUR TRIP GENERATION

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION (SOUTH ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
	ITE	ITE		ITE	Percent						MR					IC					CC					PB			
Land Use	Edition	Code	Scale	Units	In	Out	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total
General Office Building	11	710	210	ksf	87%	13%	153	23	176	0.0%	0	153	23	176	4.0%	7	150	19	169	6.07%	10	142	17	159	0.0%	0	142	17	159
Strip Retail Plaza	11	822	9	ksf	60%	40%	16	11	27	22.2%	6	12	9	21	38.1%	8	8	5	13	6.07%	1	7	5	12	34.0%	4	5	3	8
Fine Dining Restaurant	11	931	3	ksf	80%	20%	2	0	2	22.2%	0	2	0	2	50.0%	1	1	0	1	6.07%	0	1	0	1	10.0%	0	1	0	1
						Total:	**171**	**34**	**205**	**2.9%**	**6**	**167**	**32**	**199**	**8.0%**	**16**	**159**	**24**	**183**	**6.1%**	**11**	**150**	**22**	**172**	**2.3%**	**4**	**148**	**20**	**168**

ITE Land Use Code	Rate or Equation	
710	Y=0.72(X) + 25.14	From ITE Web-based App (Dense Multi-Use Urban)
822	LN(Y) = 0.66*LN(X)+1.84	
931	Y=0.73(X)	

PM PEAK HOUR TRIP GENERATION

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION (SOUTH ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
	ITE	ITE		ITE	Percent						MR					IC					CC					PB			
Land Use	Edition	Code	Scale	Units	In	Out	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total
General Office Building	11	710	210	ksf	16%	84%	29	153	182	0.0%	0	29	153	182	1.6%	3	28	151	179	7.37%	13	27	139	166	0.0%	0	27	139	166
Strip Retail Plaza	11	822	9	ksf	50%	50%	36	36	72	22.2%	16	28	28	56	14.3%	8	24	24	48	7.37%	4	22	22	44	34.0%	15	14	15	29
Fine Dining Restaurant	11	931	3	ksf	67%	33%	15	8	23	22.2%	5	12	6	18	27.8%	5	9	4	13	7.37%	1	8	4	12	10.0%	1	8	3	11
ITE Land Use Code		Rate or Equation			**Total:**		**80**	**197**	**277**	**7.6%**	**21**	**69**	**187**	**256**	**6.3%**	**16**	**61**	**179**	**240**	**7.4%**	**18**	**57**	**165**	**222**	**7.2%**	**16**	**49**	**157**	**206**
710		Y=0.83(X) + 7.46			From ITE Web-based App (Dense Multi-Use Urban)																								
822		LN(Y) = 0.71*LN(X)+2.72																											
931		Y=7.8(X)																											

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

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

INPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	153	23	29	153
Retail	12	9	28	28
Restaurant	2	0	12	6
Cinema/Entertainment	0	0	0	0
Residential	0	0	0	0
Hotel	0	0	0	0
	167	32	69	187

INTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	3	4	1	2
Retail	4	4	4	4
Restaurant	1	0	3	2
Cinema/Entertainment	0	0	0	0
Residential	0	0	0	0
Hotel	0	0	0	0
	8	8	8	8

OUTPUT

Total % Reduction	***8.0%***	***6.3%***
Office	4.0%	1.6%
Retail	38.1%	14.3%
Restaurant	50.0%	27.8%
Cinema/Entertainment		
Residential		
Hotel		

EXTERNAL TRIPS

OUTPUT

Land Use	A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit
Office	150	19	28	151
Retail	8	5	24	24
Restaurant	1	0	9	4
Cinema/Entertainment	0	0	0	0
Residential	0	0	0	0
Hotel	0	0	0	0
	159	24	61	179

SATURDAY MIDDAY PEAK HOUR TRIP GENERATION

PROPOSED SATURDAY MIDDAY PEAK HOUR TRIP GENERATION (SOUTH ZONE)

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		BASELINE TRIPS			MULTIMODAL REDUCTION		GROSS TRIPS			INTERNAL CAPTURE		EXTERNAL VEHICLE TRIPS			COMMUNITY CAPTURE		EXTERNAL VEHICLE TRIPS			PASS-BY CAPTURE		NET NEW EXTERNAL TRIPS		
	ITE	ITE		ITE	Percent						MR					IC					CC					PB			
Land Use	Edition	Code	Scale	Units	In	Out	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total
General Office Building	11	710	210	ksf	8%	92%	3	33	36	0.0%	0	3	33	36	5.6%	2	2	32	34	6.72%	2	2	30	32	0.0%	0	2	30	32
Strip Retail Plaza	11	822	9	ksf	51%	49%	30	29	59	22.2%	13	23	23	46	17.4%	8	18	20	38	6.72%	3	17	18	35	34.0%	12	11	12	23
Fine Dining Restaurant	11	931	3	ksf	59%	41%	12	9	21	22.2%	5	9	7	16	37.5%	6	6	4	10	6.72%	1	6	3	9	10.0%	1	5	3	8
						Total:	**45**	**71**	**116**	**15.5%**	**18**	**35**	**63**	**98**	**16.3%**	**16**	**26**	**56**	**82**	**6.7%**	**6**	**25**	**51**	**76**	**17.0%**	**13**	**18**	**45**	**63**

ITE Land Use Code	Rate or Equation
710	Y=0.17(X)
822	Y=6.57(X)
931	Y=7.16(X)

From ITE Web-based App (Dense Multi-Use Urban)

Internal Capture Reduction Calculations

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

SUMMARY (PROPOSED)

GROSS TRIP GENERATION

INPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	3	33
Retail	23	23
Restaurant	9	7
Cinema/Entertainment	0	0
Residential	0	0
Hotel	0	0
	35	63

INTERNAL TRIPS

OUTPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	0	2
Retail	5	3
Restaurant	3	3
Cinema/Entertainment	0	0
Residential	0	0
Hotel	0	0
	8	8

OUTPUT

Total % Reduction	***16.3%***
Office	5.6%
Retail	17.4%
Restaurant	37.5%
Cinema/Entertainment	
Residential	
Hotel	

EXTERNAL TRIPS

OUTPUT

Land Use	Sat MD Peak Hour	
	Enter	Exit
Office	3	31
Retail	18	20
Restaurant	6	4
Cinema/Entertainment	0	0
Residential	0	0
Hotel	0	0
	27	55

APPENDIX F

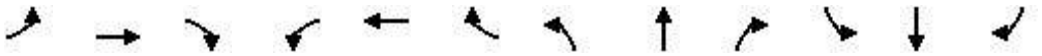
Intersection Capacity Analysis Worksheets

Kimley»Horn

DRAFT

Existing AM Peak

kimley-horn.com | 221 River Street, 9th Floor, Suite 9013, Hoboken, NJ 07030 | 609 681 2428

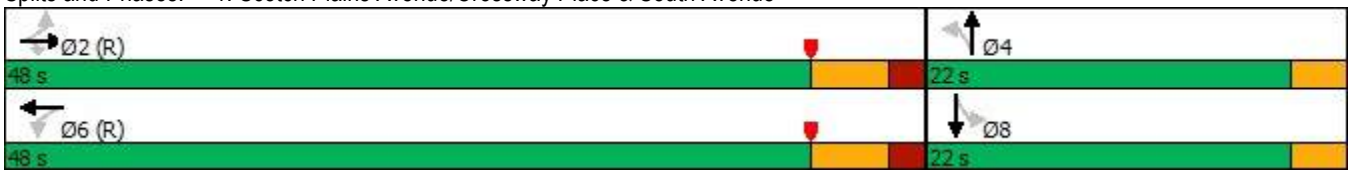


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	170	45	0	155	40	45	285	10	90	180	40
Future Volume (vph)	280	170	45	0	155	40	45	285	10	90	180	40
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.972			0.995			0.973	
Flt Protected		0.970					0.950			0.950		
Satd. Flow (prot)	0	1940	1700	0	1944	0	1900	1990	0	1900	1946	0
Flt Permitted		0.691					0.406			0.253		
Satd. Flow (perm)	0	1382	1700	0	1944	0	812	1990	0	506	1946	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			49		33			3			15	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	304	185	49	0	168	43	49	310	11	98	196	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	489	49	0	211	0	49	321	0	98	239	0
Turn Type	Perm	NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		45.2	45.2		45.2		15.8	15.8		15.8	15.8	
Actuated g/C Ratio		0.65	0.65		0.65		0.23	0.23		0.23	0.23	
v/c Ratio		0.55	0.04		0.17		0.27	0.71		0.86	0.53	
Control Delay		16.8	4.7		5.1		25.0	33.6		82.2	26.1	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		16.8	4.7		5.1		25.0	33.6		82.2	26.1	
LOS		B	A		A		C	C		F	C	
Approach Delay		15.7			5.1			32.4			42.4	
Approach LOS		B			A			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 24.6		Intersection LOS: C	
Intersection Capacity Utilization 68.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	489	49	211	49	321	98	239
v/c Ratio	0.55	0.04	0.17	0.27	0.71	0.86	0.53
Control Delay	16.8	4.7	5.1	25.0	33.6	82.2	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	4.7	5.1	25.0	33.6	82.2	26.1
Queue Length 50th (ft)	192	5	26	17	126	40	84
Queue Length 95th (ft)	295	m12	57	44	196	#115	141
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	892	1115	1267	220	542	137	539
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.04	0.17	0.22	0.59	0.72	0.44

Intersection Summary

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

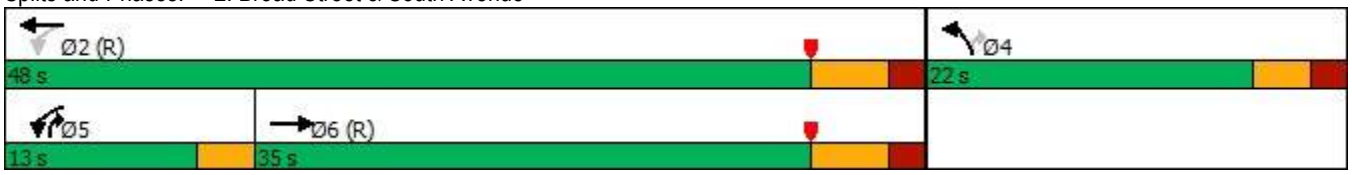
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	340	90	725	180	90	345
Future Volume (vph)	340	90	725	180	90	345
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.972					0.850
Flt Protected				0.962	0.950	
Satd. Flow (prot)	1944	0	0	3656	1900	1700
Flt Permitted				0.550	0.950	
Satd. Flow (perm)	1944	0	0	2090	1900	1700
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	370	98	788	196	98	375
Shared Lane Traffic (%)						
Lane Group Flow (vph)	468	0	0	984	98	375
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	10.0		9.0	9.0	7.0	9.0
Minimum Split (s)	35.0		13.0	35.0	22.0	13.0
Total Split (s)	35.0		13.0	48.0	22.0	13.0
Total Split (%)	50.0%		18.6%	68.6%	31.4%	18.6%
Maximum Green (s)	29.0		10.0	42.0	17.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	9.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	37.8			52.9	8.5	23.2
Actuated g/C Ratio	0.54			0.76	0.12	0.33
v/c Ratio	0.45			1.08dl	0.42	0.66
Control Delay	13.2			4.9	33.8	25.1
Queue Delay	0.0			0.0	0.0	0.0

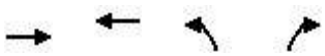
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	13.2			4.9	33.8	25.1
LOS	B			A	C	C
Approach Delay	13.2			4.9	26.9	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 77.5%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Broad Street & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	468	984	98	375
v/c Ratio	0.45	1.08dl	0.42	0.66
Control Delay	13.2	4.9	33.8	25.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.2	4.9	33.8	25.1
Queue Length 50th (ft)	114	63	40	135
Queue Length 95th (ft)	231	109	79	183
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	1049	1782	461	568
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	0.45	0.55	0.21	0.66

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

MOVEMENT SUMMARY

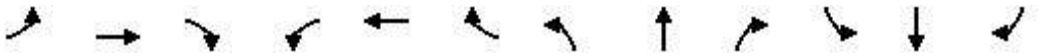
Site: 101 [Westfield RAB_Existing_AM (Site Folder: Existing Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	18	0.0	19	0.0	0.609	14.3	LOS B	5.1	132.0	0.76	0.95	1.31	21.4
6	T1	301	4.0	320	4.0	0.609	14.4	LOS B	5.1	132.0	0.76	0.95	1.31	19.6
16	R2	311	4.0	331	4.0	0.609	10.3	LOS B	5.1	132.0	0.66	0.74	0.89	22.1
Approach		630	3.9	670	3.9	0.609	12.4	LOS B	5.1	132.0	0.71	0.85	1.10	20.8
North: SB - SR 28														
7	L2	483	5.0	514	5.0	0.596	11.8	LOS B	5.6	146.1	0.65	0.72	0.97	20.6
14	R2	492	5.0	523	5.0	0.596	9.1	LOS A	5.6	146.1	0.56	0.51	0.61	19.4
Approach		975	5.0	1037	5.0	0.596	10.4	LOS B	5.6	146.1	0.60	0.62	0.79	20.1
West: EB - South Ave														
5u	U	2	0.0	2	0.0	0.991	50.3	LOS F	32.8	844.3	1.00	2.19	4.25	8.0
5	L2	554	3.0	589	3.0	0.991	50.4	LOS F	32.8	844.3	1.00	2.19	4.25	8.2
2	T1	439	5.0	467	5.0	0.991	31.3	LOS D	32.8	844.3	0.80	1.45	2.62	14.2
Approach		995	3.9	1059	3.9	0.991	42.0	LOS E	32.8	844.3	0.91	1.86	3.53	10.3
All Vehicles		2600	4.3	2766	4.3	0.991	23.0	LOS C	32.8	844.3	0.75	1.15	1.92	14.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

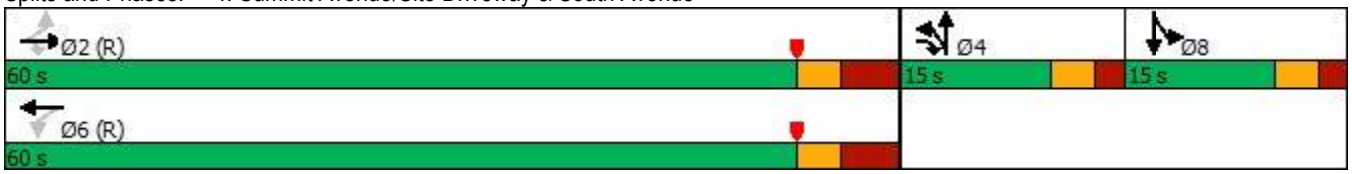


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	613	38	10	472	12	169	25	37	5	5	14
Future Volume (vph)	24	613	38	10	472	12	169	25	37	5	5	14
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		65	0		0	60		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.910			0.887	
Flt Protected		0.998			0.999		0.950			0.950		
Satd. Flow (prot)	0	1964	1700	0	3789	0	1956	1911	0	1995	1863	0
Flt Permitted		0.971			0.942		0.950			0.950		
Satd. Flow (perm)	0	1910	1700	0	3573	0	1956	1911	0	1995	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39		5			39			15	
Link Speed (mph)		25			30			25			30	
Link Distance (ft)		511			111			500			138	
Travel Time (s)		13.9			2.5			13.6			3.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	7%	5%	0%	5%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	25	639	40	10	492	13	176	26	39	5	5	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	664	40	0	515	0	176	65	0	5	20	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		63.2	83.1		63.2		9.9	9.9		7.1	7.1	
Actuated g/C Ratio		0.70	0.92		0.70		0.11	0.11		0.08	0.08	
v/c Ratio		0.50	0.03		0.21		0.82	0.27		0.03	0.12	
Control Delay		8.8	0.6		5.6		68.9	21.9		38.8	23.6	
Queue Delay		0.3	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		9.0	0.6		5.6		68.9	21.9		38.8	23.6	
LOS		A	A		A		E	C		D	C	
Approach Delay		8.6			5.6			56.2			26.7	
Approach LOS		A			A			E			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 71.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	664	40	515	176	65	5	20
v/c Ratio	0.50	0.03	0.21	0.82	0.27	0.03	0.12
Control Delay	8.8	0.6	5.6	68.9	21.9	38.8	23.6
Queue Delay	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	0.6	5.6	68.9	21.9	38.8	23.6
Queue Length 50th (ft)	113	0	34	99	14	3	3
Queue Length 95th (ft)	295	5	85	#208	51	13	25
Internal Link Dist (ft)	431		31		420		58
Turn Bay Length (ft)		65		60			
Base Capacity (vph)	1341	1556	2510	217	247	221	220
Starvation Cap Reductn	205	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.03	0.21	0.81	0.26	0.02	0.09

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	607	52	19	440	47	152
Future Volume (vph)	607	52	19	440	47	152
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.989				0.897	
Flt Protected				0.998	0.988	
Satd. Flow (prot)	1940	0	0	3800	1844	0
Flt Permitted				0.998	0.988	
Satd. Flow (perm)	1940	0	0	3800	1844	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	377			320	139	
Travel Time (s)	8.6			7.3	3.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	8%	0%	5%	4%	0%
Adj. Flow (vph)	646	55	20	468	50	162
Shared Lane Traffic (%)						
Lane Group Flow (vph)	701	0	0	488	212	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	607	52	19	440	47	152
Future Vol, veh/h	607	52	19	440	47	152
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	8	0	5	4	0
Mvmt Flow	646	55	20	468	50	162

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	701	0	948	674
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	274	-
Critical Hdwy	-	-	4.1	-	6.66	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.2	-	3.538	3.3
Pot Cap-1 Maneuver	-	-	905	-	271	458
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	743	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	905	-	263	458
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	721	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	24.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	-	-	905	-
HCM Lane V/C Ratio	0.543	-	-	0.022	-
HCM Control Delay (s)	24.7	-	-	9.1	0.1
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3.1	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	23	736	438	23	13	21
Future Volume (vph)	23	736	438	23	13	21
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.993		0.917	
Flt Protected		0.999			0.981	
Satd. Flow (prot)	0	2001	3782	0	1833	0
Flt Permitted		0.999			0.981	
Satd. Flow (perm)	0	2001	3782	0	1833	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		320	446		143	
Travel Time (s)		7.3	10.1		3.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	5%	5%	0%	0%	5%
Bus Blockages (#/hr)	5	0	0	0	0	0
Adj. Flow (vph)	24	783	466	24	14	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	807	490	0	36	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	736	438	23	13	21
Future Vol, veh/h	23	736	438	23	13	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	5	5	0	0	5
Mvmt Flow	24	783	466	24	14	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	490	0	-	0	1309	245
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	831	-
Critical Hdwy	4.1	-	-	-	6.6	6.975
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3475
Pot Cap-1 Maneuver	1084	-	-	-	165	748
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	431	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1084	-	-	-	159	748
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	431	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	18.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1084	-	-	-	310
HCM Lane V/C Ratio	0.023	-	-	-	0.117
HCM Control Delay (s)	8.4	0	-	-	18.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	210	350	145	5	20	15	275	95	10	140	585	10
Future Volume (vph)	210	350	145	5	20	15	275	95	10	140	585	10
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955						0.850			0.997	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1900	3629	0	0	0	1900	2000	1700	0	1900	1994	0
Flt Permitted	0.450					0.433				0.350		
Satd. Flow (perm)	900	3629	0	0	0	866	2000	1700	0	700	1994	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		1						126			1	
Link Speed (mph)		30					35				25	
Link Distance (ft)		446					926				398	
Travel Time (s)		10.1					18.0				10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	228	380	158	5	22	16	299	103	11	152	636	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	543	0	0	0	38	299	103	0	163	647	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	38.3	30.4				36.9	26.8	26.8		40.3	31.4	
Actuated g/C Ratio	0.43	0.34				0.42	0.30	0.30		0.45	0.35	
v/c Ratio	0.51	0.44				0.09	0.50	0.17		0.42	0.92	
Control Delay	22.2	25.4				15.3	29.4	3.7		17.6	48.1	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

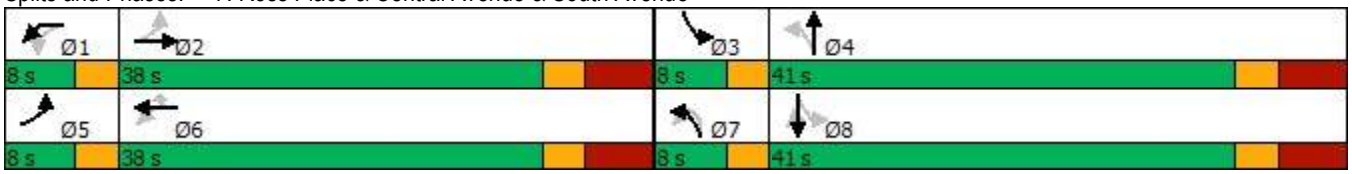


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	80	368	80	140
Future Volume (vph)	80	368	80	140
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1900	2000	1700	0
Flt Permitted	0.133			
Satd. Flow (perm)	266	2000	1700	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		792		
Travel Time (s)		21.6		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%
Adj. Flow (vph)	87	400	87	152
Shared Lane Traffic (%)				
Lane Group Flow (vph)	87	400	239	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	39.5	29.4	29.4	
Actuated g/C Ratio	0.45	0.33	0.33	
v/c Ratio	0.41	0.60	0.37	
Control Delay	19.0	29.2	12.5	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	22.2	25.4				15.3	29.4	3.7		17.6	48.1	
LOS	C	C				B	C	A		B	D	
Approach Delay		24.4					22.1				41.9	
Approach LOS		C					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 88.6			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 28.7		Intersection LOS: C	
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	19.0	29.2	12.5	
LOS	B	C	B	
Approach Delay		22.5		
Approach LOS		C		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	228	543	38	299	103	163	647	87	400	239
v/c Ratio	0.51	0.44	0.09	0.50	0.17	0.42	0.92	0.41	0.60	0.37
Control Delay	22.2	25.4	15.3	29.4	3.7	17.6	48.1	19.0	29.2	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	25.4	15.3	29.4	3.7	17.6	48.1	19.0	29.2	12.5
Queue Length 50th (ft)	83	137	12	144	0	53	372	27	195	47
Queue Length 95th (ft)	134	187	30	223	25	91	#595	53	290	107
Internal Link Dist (ft)		366		846			318		712	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	445	1246	420	686	666	387	753	212	754	720
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	0.51	0.44	0.09	0.44	0.15	0.42	0.86	0.41	0.53	0.33

Intersection Summary

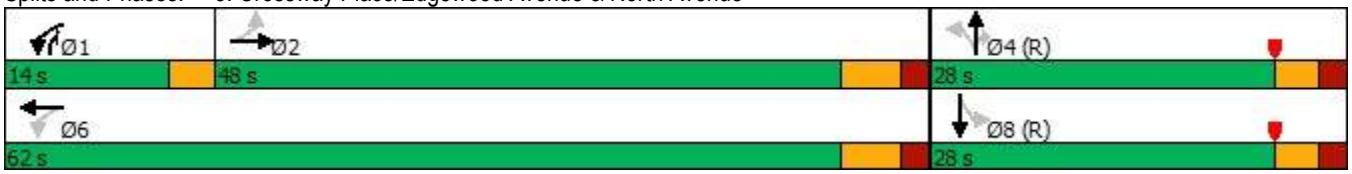
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

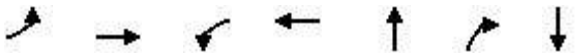
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	595	25	115	325	0	130	55	390	25	160	5
Future Volume (vph)	5	595	25	115	325	0	130	55	390	25	160	5
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994							0.850		0.997	
Flt Protected	0.950			0.950				0.966			0.993	
Satd. Flow (prot)	1900	1988	0	1900	2000	0	0	1932	1700	0	1980	0
Flt Permitted	0.550			0.206				0.579			0.941	
Satd. Flow (perm)	1100	1988	0	412	2000	0	0	1158	1700	0	1876	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							177		1	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	5	647	27	125	353	0	141	60	424	27	174	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	674	0	125	353	0	0	201	424	0	206	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	48.0	48.0		14.0	62.0		28.0	28.0	14.0	28.0	28.0	
Total Split (%)	53.3%	53.3%		15.6%	68.9%		31.1%	31.1%	15.6%	31.1%	31.1%	
Maximum Green (s)	42.0	42.0		11.0	56.0		23.0	23.0	11.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	45.1	45.1		59.0	56.0			23.0	35.9		23.0	
Actuated g/C Ratio	0.50	0.50		0.66	0.62			0.26	0.40		0.26	
v/c Ratio	0.01	0.68		0.31	0.28			0.68	0.54		0.43	
Control Delay	12.2	21.5		7.8	8.5			43.7	14.2		31.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.2	21.5		7.8	8.5			43.7	14.2		31.2	
LOS	B	C		A	A			D	B		C	
Approach Delay		21.4			8.4			23.7			31.2	
Approach LOS		C			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 20.0		Intersection LOS: B	
Intersection Capacity Utilization 73.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	674	125	353	201	424	206
v/c Ratio	0.01	0.68	0.31	0.28	0.68	0.54	0.43
Control Delay	12.2	21.5	7.8	8.5	43.7	14.2	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	21.5	7.8	8.5	43.7	14.2	31.2
Queue Length 50th (ft)	1	272	23	83	103	101	98
Queue Length 95th (ft)	7	426	43	128	#198	179	163
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	551	998	451	1244	295	836	480
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.68	0.28	0.28	0.68	0.51	0.43

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	676	529	152	185	11
Future Volume (vph)	7	676	529	152	185	11
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	2020	1963	0	1918	1785
Flt Permitted					0.950	
Satd. Flow (perm)	0	2020	1963	0	1918	1785
Link Speed (mph)		35	35		25	
Link Distance (ft)		178	120		163	
Travel Time (s)		3.5	2.3		4.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	4%	3%	4%	0%
Adj. Flow (vph)	7	704	551	158	193	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	711	709	0	193	11
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	676	529	152	185	11
Future Vol, veh/h	7	676	529	152	185	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	4	4	3	4	0
Mvmt Flow	7	704	551	158	193	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	709	0	-	0	1348	630
Stage 1	-	-	-	-	630	-
Stage 2	-	-	-	-	718	-
Critical Hdwy	4.1	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.2	-	-	-	3.536	3.3
Pot Cap-1 Maneuver	899	-	-	-	354	677
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	899	-	-	-	349	677
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	26.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	899	-	-	-	349	677
HCM Lane V/C Ratio	0.008	-	-	-	0.552	0.017
HCM Control Delay (s)	9	0	-	-	27.3	10.4
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0	-	-	-	3.2	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	164	176	0	41	43
Future Volume (vph)	0	164	176	0	41	43
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931	
Flt Protected					0.976	
Satd. Flow (prot)	0	2079	2039	0	1854	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	2079	2039	0	1854	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		108	163		288	
Travel Time (s)		2.9	4.4		7.9	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	1%	3%	0%	6%	0%
Adj. Flow (vph)	0	231	248	0	58	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	231	248	0	119	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Traffic Vol, veh/h	0	164	176	0	41	43
Future Vol, veh/h	0	164	176	0	41	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	0	1	3	0	6	0
Mvmt Flow	0	231	248	0	58	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	479	248
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	-	-	-	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	-	-	3.554	3.3
Pot Cap-1 Maneuver	0	-	-	0	538	796
Stage 1	0	-	-	0	784	-
Stage 2	0	-	-	0	798	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	538	796
Mov Cap-2 Maneuver	-	-	-	-	538	-
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	798	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

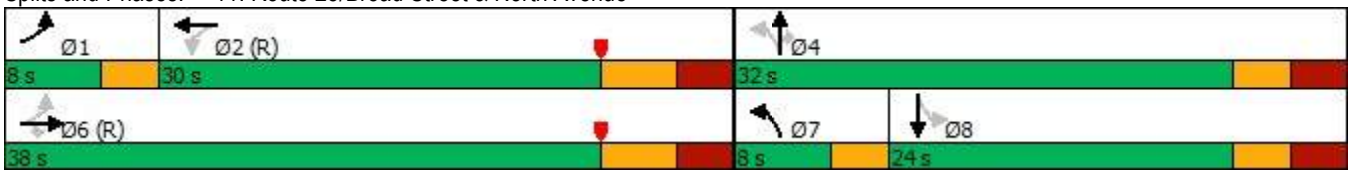
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	645
HCM Lane V/C Ratio	-	-	0.183
HCM Control Delay (s)	-	-	11.8
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	348	320	197	409	5	210	543	111	6	456	73
Future Volume (vph)	170	348	320	197	409	5	210	543	111	6	456	73
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.999				0.850		0.980	
Flt Protected	0.950				0.984		0.950				0.999	
Satd. Flow (prot)	1847	1509	1700	0	3761	0	1956	2039	1684	0	3732	0
Flt Permitted	0.295				0.728		0.252				0.908	
Satd. Flow (perm)	574	1509	1700	0	2782	0	519	2039	1684	0	3392	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			303		1						24	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		267			555			498			430	
Travel Time (s)		5.2			15.1			13.6			11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	6%	5%	5%	4%	0%	2%	3%	6%	0%	5%	3%
Adj. Flow (vph)	185	378	348	214	445	5	228	590	121	7	496	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	378	348	0	664	0	228	590	121	0	582	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	36.8	32.8	32.8		23.9		27.2	24.2	24.2		16.2	
Actuated g/C Ratio	0.53	0.47	0.47		0.34		0.39	0.35	0.35		0.23	
v/c Ratio	0.45	0.54	0.36		0.70		0.75	0.84	0.21		0.72	
Control Delay	13.5	17.4	3.7		28.9		32.9	32.9	16.5		29.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	13.5	17.4	3.7		28.9		32.9	32.9	16.5		29.2	
LOS	B	B	A		C		C	C	B		C	
Approach Delay		11.4			28.9			30.8			29.2	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 24.4		Intersection LOS: C	
Intersection Capacity Utilization 98.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	185	378	348	664	228	590	121	582
v/c Ratio	0.45	0.54	0.36	0.70	0.75	0.84	0.21	0.72
Control Delay	13.5	17.4	3.7	28.9	32.9	32.9	16.5	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	17.4	3.7	28.9	32.9	32.9	16.5	29.2
Queue Length 50th (ft)	41	116	11	157	63	219	34	112
Queue Length 95th (ft)	76	196	54	212	#133	#376	69	164
Internal Link Dist (ft)		187		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	407	706	956	951	304	757	625	890
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.54	0.36	0.70	0.75	0.78	0.19	0.65

Intersection Summary

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

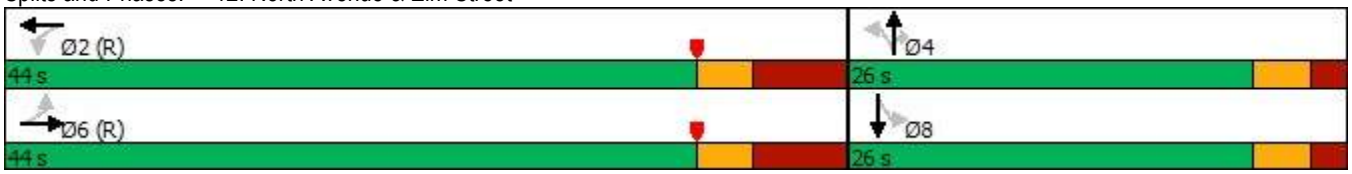
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	480	22	4	609	84	2	9	0	73	13	23
Future Volume (vph)	23	480	22	4	609	84	2	9	0	73	13	23
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.994			0.982						0.971	
Flt Protected		0.998						0.992			0.968	
Satd. Flow (prot)	0	3720	0	0	3750	0	0	1885	2000	0	1751	0
Flt Permitted		0.900			0.952			0.952			0.791	
Satd. Flow (perm)	0	3355	0	0	3570	0	0	1809	2000	0	1431	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			31						20	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			460			167			176	
Travel Time (s)		4.4			12.5			3.8			4.0	
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 (%)	0%	7%	0%	0%	5%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	26	533	24	4	677	93	2	10	0	81	14	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	774	0	0	12	0	0	121	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	18.0	18.0		18.0	18.0		10.0	10.0	10.0	10.0	10.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Act Effct Green (s)		50.5			50.5			10.2			10.2	
Actuated g/C Ratio		0.72			0.72			0.15			0.15	
v/c Ratio		0.24			0.30			0.05			0.54	
Control Delay		7.4			5.7			23.6			30.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.4			5.7			23.6			30.9	
LOS		A			A			C			C	
Approach Delay		7.4			5.7			23.6			30.9	
Approach LOS		A			A			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

* User Entered Value

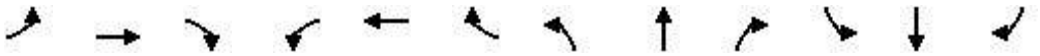
Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	583	774	12	121
v/c Ratio	0.24	0.30	0.05	0.54
Control Delay	7.4	5.7	23.6	30.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.4	5.7	23.6	30.9
Queue Length 50th (ft)	56	49	5	43
Queue Length 95th (ft)	101	m106	17	86
Internal Link Dist (ft)	83	380	87	96
Turn Bay Length (ft)				
Base Capacity (vph)	2421	2582	542	443
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.30	0.02	0.27

Intersection Summary

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

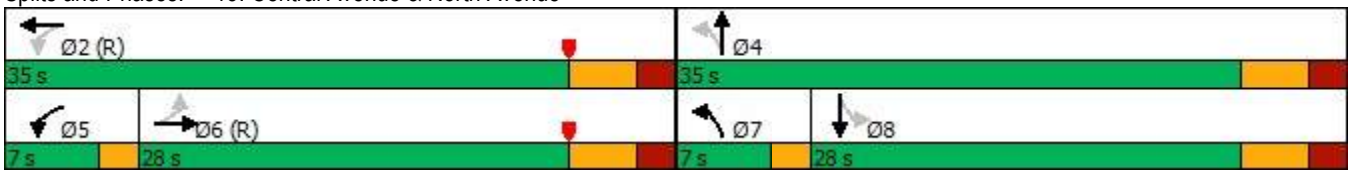


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	375	100	150	465	15	185	585	120	15	415	10
Future Volume (vph)	10	375	100	150	465	15	185	585	120	15	415	10
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.969			0.996			0.980			0.997	
Flt Protected		0.999			0.988			0.990			0.998	
Satd. Flow (prot)	0	3679	0	0	3739	0	0	3687	0	0	3781	0
Flt Permitted		0.936			0.652			0.684			0.904	
Satd. Flow (perm)	0	3447	0	0	2468	0	0	2547	0	0	3425	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					4			30				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		221			706			792			210	
Travel Time (s)		6.0			13.8			21.6			5.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	11	408	109	163	505	16	201	636	130	16	451	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	0	0	684	0	0	967	0	0	478	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		4.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		23.0			30.1			28.7			21.7	
Actuated g/C Ratio		0.33			0.43			0.41			0.31	
v/c Ratio		0.47			0.63			0.89			0.45	
Control Delay		18.5			18.5			30.7			20.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.5			18.5			30.7			20.8	
LOS		B			B			C			C	
Approach Delay		18.5			18.5			30.7			20.8	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type:	Other	
Cycle Length: 70		
Actuated Cycle Length: 70		
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.89		
Intersection Signal Delay: 23.3		Intersection LOS: C
Intersection Capacity Utilization 81.2%		ICU Level of Service D
Analysis Period (min) 15		

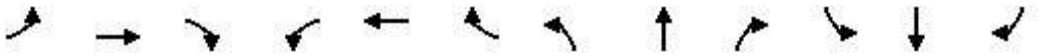
Splits and Phases: 13: Central Avenue & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	528	684	967	478
v/c Ratio	0.47	0.63	0.89	0.45
Control Delay	18.5	18.5	30.7	20.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.5	18.5	30.7	20.8
Queue Length 50th (ft)	113	105	159	84
Queue Length 95th (ft)	65	147	#253	124
Internal Link Dist (ft)	141	626	712	130
Turn Bay Length (ft)				
Base Capacity (vph)	1133	1092	1109	1096
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	0.47	0.63	0.87	0.44

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	490	0	0	525	30	5	40	10	0	0	115
Future Volume (vph)	55	490	0	0	525	30	5	40	10	0	0	115
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.993			0.975			0.865	
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1900	2000	0	0	1986	0	0	1942	0	0	1730	0
Flt Permitted	0.950							0.996				
Satd. Flow (perm)	1900	2000	0	0	1986	0	0	1942	0	0	1730	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	60	533	0	0	571	33	5	43	11	0	0	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	533	0	0	604	0	0	59	0	0	125	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	55	490	0	0	525	30	5	40	10	0	0	115
Future Vol, veh/h	55	490	0	0	525	30	5	40	10	0	0	115
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	60	533	0	0	571	33	5	43	11	0	0	125

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	604	0	-	-	-	0	1303	1257	533	-	1241	588
Stage 1	-	-	-	-	-	-	653	653	-	-	588	-
Stage 2	-	-	-	-	-	-	650	604	-	-	653	-
Critical Hdwy	4.15	-	-	-	-	-	7.15	6.55	6.25	-	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	-	5.55	-
Follow-up Hdwy	2.245	-	-	-	-	-	3.545	4.045	3.345	-	4.045	3.345
Pot Cap-1 Maneuver	959	-	0	0	-	-	136	169	541	0	173	503
Stage 1	-	-	0	0	-	-	451	459	-	0	491	-
Stage 2	-	-	0	0	-	-	453	483	-	0	459	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	959	-	-	-	-	-	97	158	541	-	162	503
Mov Cap-2 Maneuver	-	-	-	-	-	-	97	158	-	-	162	-
Stage 1	-	-	-	-	-	-	423	430	-	-	491	-
Stage 2	-	-	-	-	-	-	340	483	-	-	430	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	37.2	14.5
HCM LOS			E	B

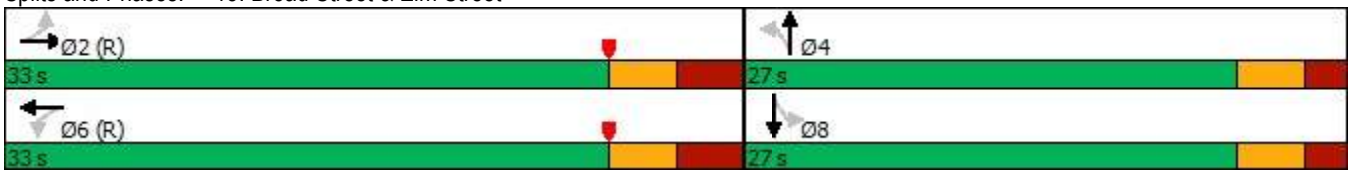
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	170	959	-	-	-	503
HCM Lane V/C Ratio	0.352	0.062	-	-	-	0.249
HCM Control Delay (s)	37.2	9	-	-	-	14.5
HCM Lane LOS	E	A	-	-	-	B
HCM 95th %tile Q(veh)	1.5	0.2	-	-	-	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	475	5	20	490	80	5	20	10	80	50	65
Future Volume (vph)	20	475	5	20	490	80	5	20	10	80	50	65
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.979			0.948			0.916	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1900	1998	0	1900	1958	0	1900	1896	0	1900	1832	0
Flt Permitted	0.402			0.463			0.679			0.736		
Satd. Flow (perm)	804	1998	0	926	1958	0	1358	1896	0	1472	1832	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			18			11			68	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	21	500	5	21	516	84	5	21	11	84	53	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	505	0	21	600	0	5	32	0	84	121	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	43.5	43.5		43.5	43.5		9.1	9.1		9.1	9.1	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.15	0.15		0.15	0.15	
v/c Ratio	0.04	0.35		0.03	0.42		0.02	0.11		0.38	0.36	
Control Delay	4.5	5.4		3.5	6.5		20.2	16.5		27.1	14.4	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	4.5	5.4		3.5	6.7		20.2	16.5		27.1	14.4	
LOS	A	A		A	A		C	B		C	B	
Approach Delay		5.4			6.6			17.0			19.6	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 8.4		Intersection LOS: A	
Intersection Capacity Utilization 47.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	505	21	600	5	32	84	121
v/c Ratio	0.04	0.35	0.03	0.42	0.02	0.11	0.38	0.36
Control Delay	4.5	5.4	3.5	6.5	20.2	16.5	27.1	14.4
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	4.5	5.4	3.5	6.7	20.2	16.5	27.1	14.4
Queue Length 50th (ft)	2	65	1	138	2	7	28	17
Queue Length 95th (ft)	9	134	m8	227	9	25	60	53
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	582	1447	670	1423	497	702	539	714
Starvation Cap Reductn	0	0	0	294	0	0	0	0
Spillback Cap Reductn	0	61	0	0	0	7	5	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.36	0.03	0.53	0.01	0.05	0.16	0.17

Intersection Summary

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

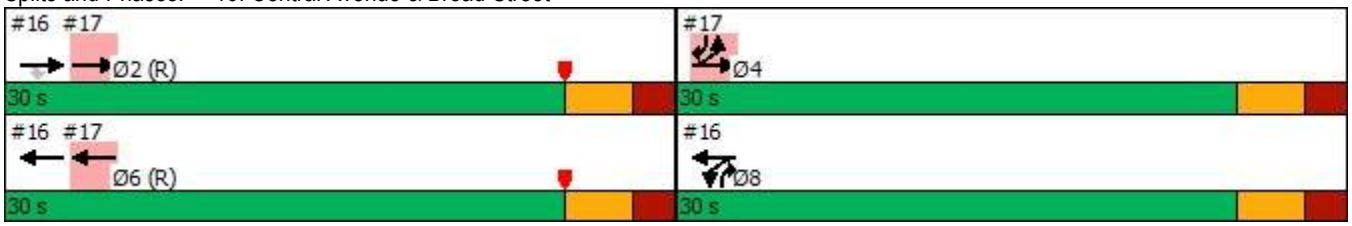


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	505	55	345	545	0	520		
Future Volume (vph)	505	55	345	545	0	520		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2000	1700	1900	2000	0	1730		
Flt Permitted			0.950					
Satd. Flow (perm)	2000	1700	1900	2000	0	1730		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		60				194		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	728			
Travel Time (s)	8.7			2.8	19.9			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%		
Adj. Flow (vph)	549	60	375	592	0	565		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	549	60	375	592	0	565		
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0			5.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	24.0	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	25.3	25.3	24.7	60.0		24.7		
Actuated g/C Ratio	0.42	0.42	0.41	1.00		0.41		
v/c Ratio	0.65	0.08	0.48	0.30		0.68		
Control Delay	23.1	8.5	20.0	0.7		14.2		
Queue Delay	14.8	0.0	5.6	0.0		0.6		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	37.9	8.5	25.5	0.7		14.8		
LOS	D	A	C	A		B		
Approach Delay	35.0			10.3	14.8			
Approach LOS	C			B	B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 25 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 61.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	549	60	375	592	565
v/c Ratio	0.65	0.08	0.48	0.30	0.68
Control Delay	23.1	8.5	20.0	0.7	14.2
Queue Delay	14.8	0.0	5.6	0.0	0.6
Total Delay	37.9	8.5	25.5	0.7	14.8
Queue Length 50th (ft)	190	1	124	0	99
Queue Length 95th (ft)	270	29	206	9	202
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	842	751	791	1976	834
Starvation Cap Reductn	169	0	348	0	0
Spillback Cap Reductn	280	0	0	82	68
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.08	0.85	0.31	0.74

Intersection Summary



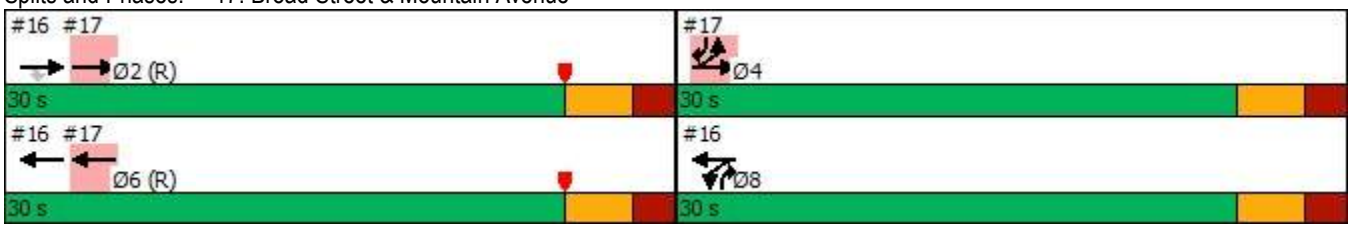
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	640	390	490	20	0	400		
Future Volume (vph)	640	390	490	20	0	400		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.994			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1900	2000	3777	0	0	2992		
Flt Permitted	0.950							
Satd. Flow (perm)	1900	2000	3777	0	0	2992		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			8			360		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	392		630			
Travel Time (s)		2.5	10.7		17.2			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%		
Adj. Flow (vph)	696	424	533	22	0	435		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	696	424	555	0	0	435		
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	5.0
Minimum Split (s)	24.0		30.0			24.0	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.0		25.0			25.0	25.0	25.0
Yellow Time (s)	3.0		3.0			3.0	3.0	3.0
All-Red Time (s)	2.0		2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	5.0		5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	24.7	60.0	25.3			24.7		
Actuated g/C Ratio	0.41	1.00	0.42			0.41		
v/c Ratio	0.89	0.21	0.35			0.30		
Control Delay	30.5	0.2	12.5			3.2		
Queue Delay	49.4	0.0	0.9			0.1		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	79.9	0.2	13.4			3.3		
LOS	E	A	B			A		
Approach Delay		49.7	13.4		3.3			
Approach LOS		D	B		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 25 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 30.6		Intersection LOS: C	
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	696	424	555	435
v/c Ratio	0.89	0.21	0.35	0.30
Control Delay	30.5	0.2	12.5	3.2
Queue Delay	49.4	0.0	0.9	0.1
Total Delay	79.9	0.2	13.4	3.3
Queue Length 50th (ft)	235	0	67	9
Queue Length 95th (ft)	#417	0	101	34
Internal Link Dist (ft)		13	312	
Turn Bay Length (ft)				150
Base Capacity (vph)	791	1976	1596	1456
Starvation Cap Reductn	241	0	0	0
Spillback Cap Reductn	0	0	732	208
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.27	0.21	0.64	0.35

Intersection Summary

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

Kimley»Horn

DRAFT

Existing PM Peak

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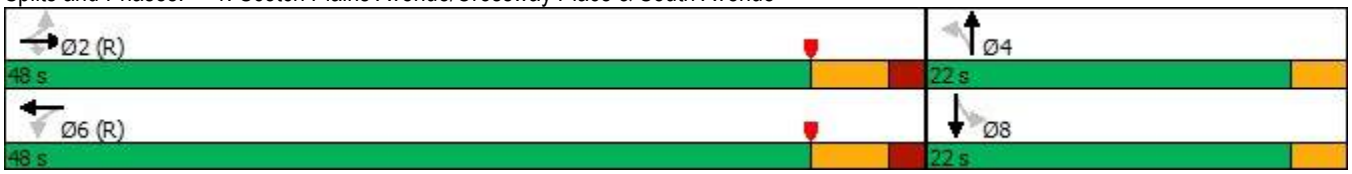
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	255	55	15	240	90	35	195	10	50	215	135
Future Volume (vph)	75	255	55	15	240	90	35	195	10	50	215	135
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.965			0.993			0.942	
Flt Protected		0.989			0.998		0.950			0.950		
Satd. Flow (prot)	0	2036	1750	0	1983	0	1956	2044	0	1956	1939	0
Flt Permitted		0.844			0.981		0.245			0.445		
Satd. Flow (perm)	0	1738	1750	0	1949	0	504	2044	0	916	1939	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			60		45			4			44	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	82	277	60	16	261	98	38	212	11	54	234	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	359	60	0	375	0	38	223	0	54	381	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		44.7	44.7		44.7		16.3	16.3		16.3	16.3	
Actuated g/C Ratio		0.64	0.64		0.64		0.23	0.23		0.23	0.23	
v/c Ratio		0.32	0.05		0.30		0.32	0.47		0.25	0.79	
Control Delay		11.0	4.6		6.2		29.3	25.4		24.0	34.1	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.0	4.6		6.2		29.3	25.4		24.0	34.1	
LOS		B	A		A		C	C		C	C	
Approach Delay		10.1			6.2			25.9			32.8	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 73.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	359	60	375	38	223	54	381
v/c Ratio	0.32	0.05	0.30	0.32	0.47	0.25	0.79
Control Delay	11.0	4.6	6.2	29.3	25.4	24.0	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	4.6	6.2	29.3	25.4	24.0	34.1
Queue Length 50th (ft)	110	5	57	13	79	19	133
Queue Length 95th (ft)	187	m16	103	39	134	46	218
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	1109	1139	1260	136	557	248	558
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.05	0.30	0.28	0.40	0.22	0.68

Intersection Summary

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



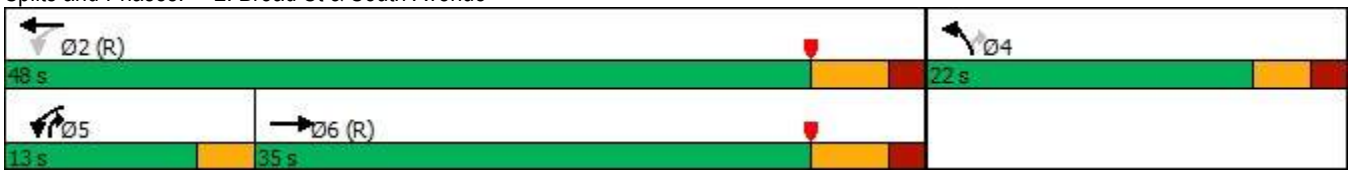
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	250	110	645	405	190	370
Future Volume (vph)	250	110	645	405	190	370
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.959					0.850
Flt Protected				0.970	0.950	
Satd. Flow (prot)	1974	0	0	3794	1956	1750
Flt Permitted				0.593	0.950	
Satd. Flow (perm)	1974	0	0	2320	1956	1750
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	272	120	701	440	207	402
Shared Lane Traffic (%)						
Lane Group Flow (vph)	392	0	0	1141	207	402
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	9.0		10.0	9.0	7.0	10.0
Minimum Split (s)	35.0		13.0	35.0	22.0	13.0
Total Split (s)	35.0		13.0	48.0	22.0	13.0
Total Split (%)	50.0%		18.6%	68.6%	31.4%	18.6%
Maximum Green (s)	29.0		10.0	42.0	17.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	9.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	34.3			47.3	11.7	26.7
Actuated g/C Ratio	0.49			0.68	0.17	0.38
v/c Ratio	0.41			0.99dl	0.63	0.60
Control Delay	13.9			8.6	35.5	21.1
Queue Delay	0.0			0.0	0.0	0.0

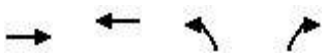
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	13.9			8.6	35.5	21.1
LOS	B			A	D	C
Approach Delay	13.9			8.6	26.0	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 74.0%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Broad St & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	392	1141	207	402
v/c Ratio	0.41	0.99dl	0.63	0.60
Control Delay	13.9	8.6	35.5	21.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.9	8.6	35.5	21.1
Queue Length 50th (ft)	101	100	84	135
Queue Length 95th (ft)	188	170	136	195
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	967	1715	475	667
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	0.41	0.67	0.44	0.60

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

MOVEMENT SUMMARY

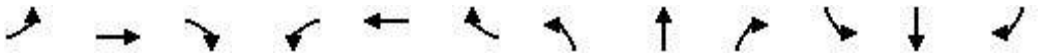
Site: 101 [Westfield RAB_Existing_PM (Site Folder: Existing Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	14	0.0	15	0.0	0.454	9.5	LOS A	2.8	70.3	0.64	0.69	0.80	24.4
6	T1	382	2.0	390	2.0	0.454	9.6	LOS A	2.8	70.3	0.64	0.69	0.80	22.8
16	R2	308	3.0	314	3.0	0.454	8.0	LOS A	2.8	70.3	0.59	0.56	0.59	23.6
Approach		704	2.4	719	2.4	0.454	8.9	LOS A	2.8	70.3	0.62	0.63	0.71	23.2
North: SB - SR 28														
7	L2	440	2.0	449	2.0	0.455	9.0	LOS A	2.6	66.6	0.58	0.57	0.67	22.0
14	R2	521	2.0	532	2.0	0.539	10.5	LOS B	4.2	106.8	0.63	0.70	0.89	18.8
Approach		961	2.0	981	2.0	0.539	9.8	LOS A	4.2	106.8	0.61	0.64	0.79	20.5
West: EB - South Ave														
5u	U	2	0.0	2	0.0	0.855	25.7	LOS D	18.4	466.7	0.97	1.55	2.46	11.6
5	L2	476	1.0	486	1.0	0.855	25.7	LOS D	18.4	466.7	0.97	1.55	2.46	11.8
2	T1	391	3.0	399	3.0	0.855	21.6	LOS C	18.4	466.7	0.87	1.31	2.07	17.1
Approach		869	1.9	887	1.9	0.855	23.9	LOS C	18.4	466.7	0.92	1.44	2.28	14.0
All Vehicles		2534	2.1	2586	2.1	0.855	14.4	LOS B	18.4	466.7	0.72	0.91	1.28	18.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

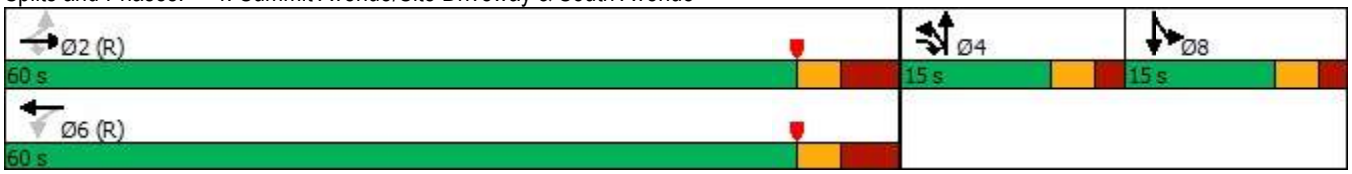


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	588	30	25	573	13	90	13	41	25	21	38
Future Volume (vph)	21	588	30	25	573	13	90	13	41	25	21	38
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	0		70	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997			0.887			0.903	
Flt Protected		0.998			0.998		0.950			0.950		
Satd. Flow (prot)	0	2053	1785	0	3897	0	1956	1863	0	1995	1872	0
Flt Permitted		0.968			0.914		0.950			0.950		
Satd. Flow (perm)	0	1991	1785	0	3569	0	1956	1863	0	1995	1872	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			31		4			43			40	
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		511			156			500			138	
Travel Time (s)		13.9			3.5			13.6			3.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	2%	0%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Adj. Flow (vph)	22	613	31	26	597	14	94	14	43	26	22	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	635	31	0	637	0	94	57	0	26	62	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		62.6	75.8		62.6		9.0	9.0		7.6	7.6	
Actuated g/C Ratio		0.70	0.84		0.70		0.10	0.10		0.08	0.08	
v/c Ratio		0.46	0.02		0.26		0.48	0.25		0.15	0.32	
Control Delay		10.0	0.8		7.4		46.7	19.0		39.8	23.3	
Queue Delay		0.2	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		10.2	0.8		7.4		46.7	19.0		39.8	23.3	
LOS		B	A		A		D	B		D	C	
Approach Delay		9.8			7.4			36.3			28.2	
Approach LOS		A			A			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	635	31	637	94	57	26	62
v/c Ratio	0.46	0.02	0.26	0.48	0.25	0.15	0.32
Control Delay	10.0	0.8	7.4	46.7	19.0	39.8	23.3
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	0.8	7.4	46.7	19.0	39.8	23.3
Queue Length 50th (ft)	179	0	77	51	7	14	12
Queue Length 95th (ft)	288	5	116	99	42	38	49
Internal Link Dist (ft)	431		76		420		58
Turn Bay Length (ft)							
Base Capacity (vph)	1384	1516	2483	217	245	221	243
Starvation Cap Reductn	197	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.02	0.26	0.43	0.23	0.12	0.26

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	613	46	29	532	35	88
Future Volume (vph)	613	46	29	532	35	88
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.991				0.903	
Flt Protected				0.997	0.986	
Satd. Flow (prot)	2043	0	0	3898	1856	0
Flt Permitted				0.997	0.986	
Satd. Flow (perm)	2043	0	0	3898	1856	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	339			279	211	
Travel Time (s)	7.7			6.3	4.8	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	3%	2%	0%	1%
Adj. Flow (vph)	619	46	29	537	35	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	665	0	0	566	124	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	613	46	29	532	35	88
Future Vol, veh/h	613	46	29	532	35	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	0	3	2	0	1
Mvmt Flow	619	46	29	537	35	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	665	0	969	642
Stage 1	-	-	-	-	642	-
Stage 2	-	-	-	-	327	-
Critical Hdwy	-	-	4.145	-	6.6	6.215
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2285	-	3.5	3.3095
Pot Cap-1 Maneuver	-	-	916	-	269	475
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	709	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	916	-	257	475
Mov Cap-2 Maneuver	-	-	-	-	257	-
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	383	-	-	916	-
HCM Lane V/C Ratio	0.324	-	-	0.032	-
HCM Control Delay (s)	18.8	-	-	9.1	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	693	532	14	18	28
Future Volume (vph)	5	693	532	14	18	28
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.996		0.918	
Flt Protected					0.981	
Satd. Flow (prot)	0	2059	3898	0	1891	0
Flt Permitted					0.981	
Satd. Flow (perm)	0	2059	3898	0	1891	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		279	494		163	
Travel Time (s)		6.3	11.2		4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	5	714	548	14	19	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	719	562	0	48	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	693	532	14	18	28
Future Vol, veh/h	5	693	532	14	18	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	5	714	548	14	19	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	562	0	-	0	1279	281
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	724	-
Critical Hdwy	4.1	-	-	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1019	-	-	-	172	722
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	484	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1019	-	-	-	171	722
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	540	-
Stage 2	-	-	-	-	484	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	18.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1019	-	-	-	319
HCM Lane V/C Ratio	0.005	-	-	-	0.149
HCM Control Delay (s)	8.6	0	-	-	18.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.5

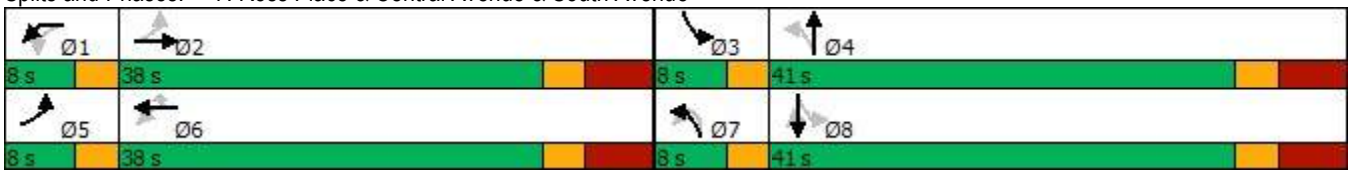
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	168	440	165	5	50	30	390	170	5	150	530	30
Future Volume (vph)	168	440	165	5	50	30	390	170	5	150	530	30
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.958						0.850			0.992	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1956	3747	0	0	0	1956	2059	1750	0	1956	2042	0
Flt Permitted	0.302					0.321				0.129		
Satd. Flow (perm)	622	3747	0	0	0	661	2059	1750	0	266	2042	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		1						135			3	
Link Speed (mph)		30					30				25	
Link Distance (ft)		494					926				398	
Travel Time (s)		11.2					21.0				10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	183	478	179	5	54	33	424	185	5	163	576	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	662	0	0	0	87	424	185	0	168	609	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	39.1	30.2				38.4	28.3	28.3		41.0	30.9	
Actuated g/C Ratio	0.43	0.33				0.42	0.31	0.31		0.45	0.34	
v/c Ratio	0.54	0.53				0.25	0.67	0.29		0.79	0.88	
Control Delay	23.3	27.7				16.9	33.7	9.2		44.0	44.5	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	155	575	85	160
Future Volume (vph)	155	575	85	160
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1956	2059	1750	0
Flt Permitted	0.129			
Satd. Flow (perm)	266	2059	1750	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		809		
Travel Time (s)		22.1		
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%
Adj. Flow (vph)	168	625	92	174
Shared Lane Traffic (%)				
Lane Group Flow (vph)	168	625	266	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	41.0	30.9	30.9	
Actuated g/C Ratio	0.45	0.34	0.34	
v/c Ratio	0.79	0.90	0.39	
Control Delay	44.0	46.7	13.8	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	23.3	27.7				16.9	33.7	9.2		44.0	44.5	
LOS	C	C				B	C	A		D	D	
Approach Delay		26.8					25.1				44.4	
Approach LOS		C					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 91.4			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 34.0		Intersection LOS: C	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	44.0	46.7	13.8	
LOS	D	D	B	
Approach Delay		38.0		
Approach LOS		D		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	183	662	87	424	185	168	609	168	625	266
v/c Ratio	0.54	0.53	0.25	0.67	0.29	0.79	0.88	0.79	0.90	0.39
Control Delay	23.3	27.7	16.9	33.7	9.2	44.0	44.5	44.0	46.7	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	27.7	16.9	33.7	9.2	44.0	44.5	44.0	46.7	13.8
Queue Length 50th (ft)	65	173	29	219	21	55	336	55	349	59
Queue Length 95th (ft)	108	230	57	323	70	#133	#528	#133	#547	124
Internal Link Dist (ft)		414		846			318		729	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	339	1238	348	680	668	212	744	212	748	716
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	0.54	0.53	0.25	0.62	0.28	0.79	0.82	0.79	0.84	0.37

Intersection Summary

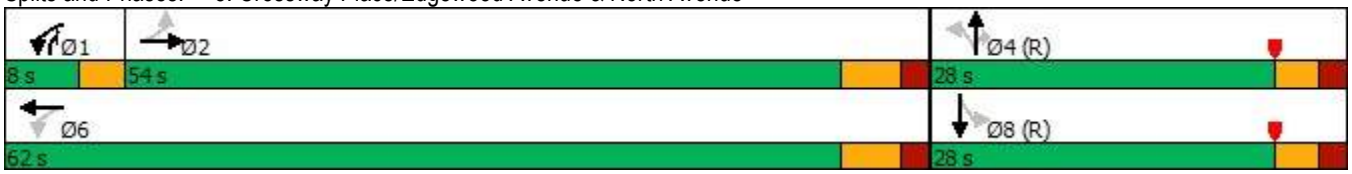
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

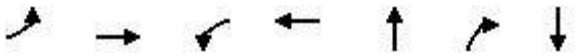
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	510	40	335	585	5	90	60	205	10	35	15
Future Volume (vph)	5	510	40	335	585	5	90	60	205	10	35	15
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.999				0.850		0.967	
Flt Protected	0.950			0.950				0.971			0.992	
Satd. Flow (prot)	1956	2036	0	1956	2057	0	0	1999	1750	0	1975	0
Flt Permitted	0.379			0.285				0.789			0.948	
Satd. Flow (perm)	780	2036	0	587	2057	0	0	1624	1750	0	1887	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1				223		16	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	5	554	43	364	636	5	98	65	223	11	38	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	597	0	364	641	0	0	163	223	0	65	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	54.0	54.0		8.0	62.0		28.0	28.0	8.0	28.0	28.0	
Total Split (%)	60.0%	60.0%		8.9%	68.9%		31.1%	31.1%	8.9%	31.1%	31.1%	
Maximum Green (s)	48.0	48.0		5.0	56.0		23.0	23.0	5.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		59.0	56.0			23.0	33.0		23.0	
Actuated g/C Ratio	0.53	0.53		0.66	0.62			0.26	0.37		0.26	
v/c Ratio	0.01	0.55		0.79	0.50			0.39	0.29		0.13	
Control Delay	10.0	16.1		23.1	11.0			31.1	3.9		21.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.0	16.1		23.1	11.0			31.1	3.9		21.5	
LOS	A	B		C	B			C	A		C	
Approach Delay		16.0			15.4			15.4			21.5	
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 15.8		Intersection LOS: B	
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	597	364	641	163	223	65
v/c Ratio	0.01	0.55	0.79	0.50	0.39	0.29	0.13
Control Delay	10.0	16.1	23.1	11.0	31.1	3.9	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	16.1	23.1	11.0	31.1	3.9	21.5
Queue Length 50th (ft)	1	208	78	181	77	0	21
Queue Length 95th (ft)	6	304	#150	262	135	44	53
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	416	1089	460	1280	415	782	494
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.55	0.79	0.50	0.39	0.29	0.13

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	533	651	146	221	35
Future Volume (vph)	5	533	651	146	221	35
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.975			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	2059	2007	0	1956	1750
Flt Permitted					0.950	
Satd. Flow (perm)	0	2059	2007	0	1956	1750
Link Speed (mph)		35	35		25	
Link Distance (ft)		175	117		156	
Travel Time (s)		3.4	2.3		4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	579	708	159	240	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	584	867	0	240	38
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	533	651	146	221	35
Future Vol, veh/h	5	533	651	146	221	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	579	708	159	240	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	867	0	-	0	1377	788
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	589	-
Critical Hdwy	4.12	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	777	-	-	-	346	595
Stage 1	-	-	-	-	448	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	777	-	-	-	343	595
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	33.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	777	-	-	-	343	595
HCM Lane V/C Ratio	0.007	-	-	-	0.7	0.064
HCM Control Delay (s)	9.7	0	-	-	36.7	11.5
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q(veh)	0	-	-	-	5	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	188	197	0	51	38
Future Volume (vph)	0	188	197	0	51	38
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.943	
Flt Protected					0.972	
Satd. Flow (prot)	0	2079	2059	0	1925	0
Flt Permitted					0.972	
Satd. Flow (perm)	0	2079	2059	0	1925	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		92	156		448	
Travel Time (s)		2.5	4.3		12.2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	0	224	235	0	61	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	224	235	0	106	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Traffic Vol, veh/h	0	188	197	0	51	38
Future Vol, veh/h	0	188	197	0	51	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	224	235	0	61	45

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	459	235
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	564	809
Stage 1	0	-	-	0	809	-
Stage 2	0	-	-	0	818	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	564	809
Mov Cap-2 Maneuver	-	-	-	-	564	-
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	818	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

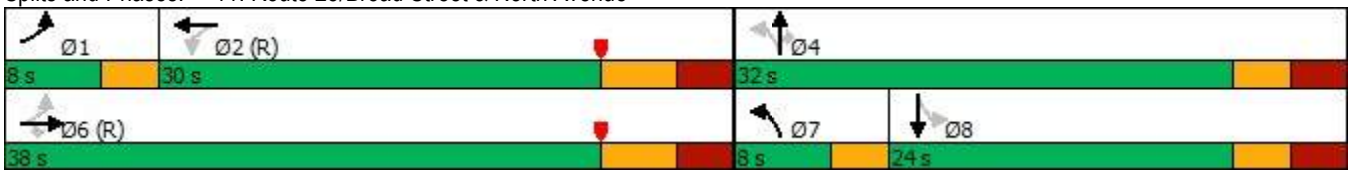
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	648
HCM Lane V/C Ratio	-	-	0.164
HCM Control Delay (s)	-	-	11.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	299	339	199	436	6	236	448	123	26	422	108
Future Volume (vph)	122	299	339	199	436	6	236	448	123	26	422	108
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.999				0.850		0.971	
Flt Protected	0.950				0.985		0.950				0.998	
Satd. Flow (prot)	1956	1538	1750	0	3813	0	1956	2059	1785	0	3745	0
Flt Permitted	0.303				0.752		0.250				0.910	
Satd. Flow (perm)	624	1538	1750	0	2911	0	515	2059	1785	0	3415	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			326		1						41	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		278			555			498			430	
Travel Time (s)		5.4			15.1			13.6			11.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	3%	3%	0%	2%	2%	0%	0%	3%	5%
Adj. Flow (vph)	127	311	353	207	454	6	246	467	128	27	440	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	311	353	0	667	0	246	467	128	0	580	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	37.0	33.0	33.0		26.0		27.0	24.0	24.0		16.0	
Actuated g/C Ratio	0.53	0.47	0.47		0.37		0.39	0.34	0.34		0.23	
v/c Ratio	0.29	0.43	0.35		0.62		0.82	0.66	0.21		0.71	
Control Delay	10.8	15.3	3.2		21.8		39.6	24.4	16.6		28.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.8	15.3	3.2		21.8		39.6	24.4	16.6		28.2	
LOS	B	B	A		C		D	C	B		C	
Approach Delay		9.2			21.8			27.6			28.2	
Approach LOS		A			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 21.3		Intersection LOS: C	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	127	311	353	667	246	467	128	580
v/c Ratio	0.29	0.43	0.35	0.62	0.82	0.66	0.21	0.71
Control Delay	10.8	15.3	3.2	21.8	39.6	24.4	16.6	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	15.3	3.2	21.8	39.6	24.4	16.6	28.2
Queue Length 50th (ft)	26	87	6	138	70	164	37	110
Queue Length 95th (ft)	54	154	49	215	#155	251	71	159
Internal Link Dist (ft)		198		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	439	724	996	1082	301	764	663	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.43	0.35	0.62	0.82	0.61	0.19	0.64

Intersection Summary

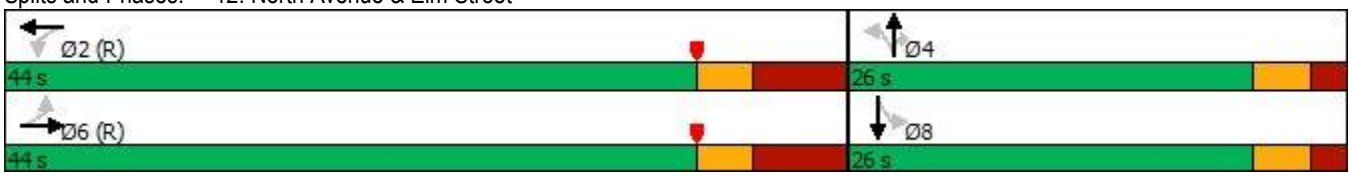
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	402	21	21	670	104	16	16	9	103	19	115
Future Volume (vph)	29	402	21	21	670	104	16	16	9	103	19	115
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.993			0.980				0.850		0.934	
Flt Protected		0.997			0.999			0.976			0.979	
Satd. Flow (prot)	0	3848	0	0	3810	0	0	1854	1700	0	1712	0
Flt Permitted		0.864			0.933			0.831			0.846	
Satd. Flow (perm)	0	3334	0	0	3558	0	0	1579	1700	0	1480	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			35				78		69	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			479			193			176	
Travel Time (s)		4.4			13.1			4.4			4.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	30	419	22	22	698	108	17	17	9	107	20	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	471	0	0	828	0	0	34	9	0	247	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		26.0	26.0	26.0	26.0	26.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	160	160		160	160		160	160	160	160	160	
Act Effct Green (s)		36.0			36.0			21.0	21.0		21.0	
Actuated g/C Ratio		0.51			0.51			0.30	0.30		0.30	
v/c Ratio		0.27			0.45			0.07	0.02		0.50	
Control Delay		9.9			13.4			18.2	0.0		18.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		9.9			13.4			18.2	0.0		18.5	
LOS		A			B			B	A		B	
Approach Delay		9.9			13.4			14.4			18.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	471	828	34	9	247
v/c Ratio	0.27	0.45	0.07	0.02	0.50
Control Delay	9.9	13.4	18.2	0.0	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	13.4	18.2	0.0	18.5
Queue Length 50th (ft)	24	107	10	0	63
Queue Length 95th (ft)	101	m136	30	0	132
Internal Link Dist (ft)	83	399	113		96
Turn Bay Length (ft)					
Base Capacity (vph)	1719	1846	473	564	492
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	0.27	0.45	0.07	0.02	0.50

Intersection Summary

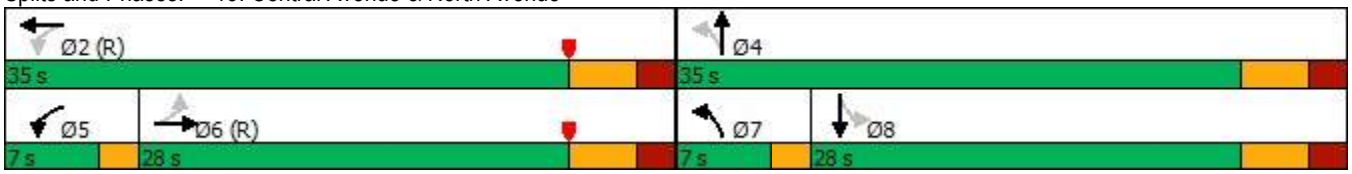
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	420	140	210	610	45	150	525	190	55	625	10
Future Volume (vph)	25	420	140	210	610	45	150	525	190	55	625	10
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.964			0.992			0.967			0.998	
Flt Protected		0.998			0.988			0.991			0.996	
Satd. Flow (prot)	0	3763	0	0	3834	0	0	3749	0	0	3888	0
Flt Permitted		0.886			0.612			0.590			0.796	
Satd. Flow (perm)	0	3341	0	0	2375	0	0	2232	0	0	3108	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					10			64				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		203			706			809			223	
Travel Time (s)		5.5			13.8			22.1			6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	26	442	147	221	642	47	158	553	200	58	658	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	615	0	0	910	0	0	911	0	0	727	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		22.8			29.9			28.9			21.9	
Actuated g/C Ratio		0.33			0.43			0.41			0.31	
v/c Ratio		0.57			0.87			0.92			0.75	
Control Delay		18.4			28.8			34.2			27.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.4			28.8			34.2			27.1	
LOS		B			C			C			C	
Approach Delay		18.4			28.8			34.2			27.1	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 27.9		Intersection LOS: C	
Intersection Capacity Utilization 95.9%		ICU Level of Service F	
Analysis Period (min) 15			

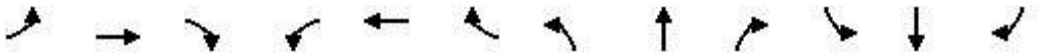
Splits and Phases: 13: Central Avenue & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	615	910	911	727
v/c Ratio	0.57	0.87	0.92	0.75
Control Delay	18.4	28.8	34.2	27.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.4	28.8	34.2	27.1
Queue Length 50th (ft)	90	148	140	144
Queue Length 95th (ft)	96	#241	#243	205
Internal Link Dist (ft)	123	626	729	143
Turn Bay Length (ft)				
Base Capacity (vph)	1087	1051	1004	994
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	0.57	0.87	0.91	0.73

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	560	0	0	485	45	10	40	15	0	0	110
Future Volume (vph)	115	560	0	0	485	45	10	40	15	0	0	110
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989			0.969			0.865	
Flt Protected	0.950							0.992				
Satd. Flow (prot)	1956	2059	0	0	2036	0	0	1979	0	0	1781	0
Flt Permitted	0.950							0.992				
Satd. Flow (perm)	1956	2059	0	0	2036	0	0	1979	0	0	1781	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	121	589	0	0	511	47	11	42	16	0	0	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	589	0	0	558	0	0	69	0	0	116	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	115	560	0	0	485	45	10	40	15	0	0	110
Future Vol, veh/h	115	560	0	0	485	45	10	40	15	0	0	110
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	589	0	0	511	47	11	42	16	0	0	116

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	558	0	-	-	-	0	1424	1389	589	-	1366	535
Stage 1	-	-	-	-	-	-	831	831	-	-	535	-
Stage 2	-	-	-	-	-	-	593	558	-	-	831	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	-	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	-	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	-	4.018	3.318
Pot Cap-1 Maneuver	1013	-	0	0	-	-	113	142	508	0	147	545
Stage 1	-	-	0	0	-	-	364	384	-	0	524	-
Stage 2	-	-	0	0	-	-	492	512	-	0	384	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1013	-	-	-	-	-	81	125	508	-	130	545
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	125	-	-	130	-
Stage 1	-	-	-	-	-	-	321	338	-	-	524	-
Stage 2	-	-	-	-	-	-	387	512	-	-	338	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	55	13.4
HCM LOS			F	B

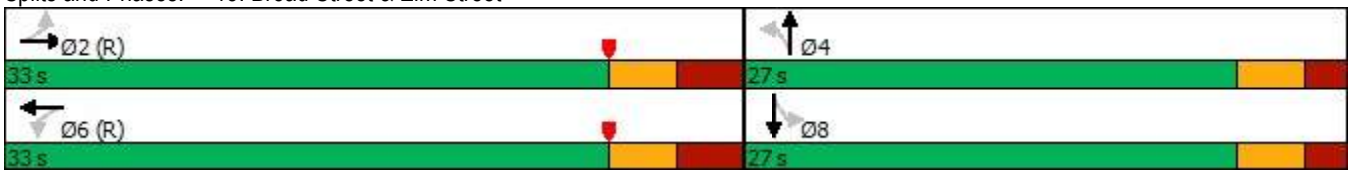
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	137	1013	-	-	-	545
HCM Lane V/C Ratio	0.499	0.119	-	-	-	0.212
HCM Control Delay (s)	55	9	-	-	-	13.4
HCM Lane LOS	F	A	-	-	-	B
HCM 95th %tile Q(veh)	2.3	0.4	-	-	-	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	485	35	40	420	75	25	60	20	160	80	85
Future Volume (vph)	60	485	35	40	420	75	25	60	20	160	80	85
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.977			0.962			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1956	2038	0	1956	2011	0	1956	1981	0	1956	1900	0
Flt Permitted	0.426			0.406			0.645			0.702		
Satd. Flow (perm)	877	2038	0	836	2011	0	1328	1981	0	1445	1900	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			19			21			89	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	63	511	37	42	442	79	26	63	21	168	84	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	548	0	42	521	0	26	84	0	168	173	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.6	36.6		36.6	36.6		12.4	12.4		12.4	12.4	
Actuated g/C Ratio	0.61	0.61		0.61	0.61		0.21	0.21		0.21	0.21	
v/c Ratio	0.12	0.44		0.08	0.42		0.09	0.20		0.56	0.37	
Control Delay	7.1	8.5		6.9	9.0		17.7	15.2		27.8	12.1	
Queue Delay	0.0	0.1		0.0	0.4		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	7.1	8.6		6.9	9.5		17.7	15.2		27.9	12.1	
LOS	A	A		A	A		B	B		C	B	
Approach Delay		8.4			9.3			15.8			19.8	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	63	548	42	521	26	84	168	173
v/c Ratio	0.12	0.44	0.08	0.42	0.09	0.20	0.56	0.37
Control Delay	7.1	8.5	6.9	9.0	17.7	15.2	27.8	12.1
Queue Delay	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	7.1	8.6	6.9	9.5	17.7	15.2	27.9	12.1
Queue Length 50th (ft)	8	88	7	116	8	19	55	26
Queue Length 95th (ft)	29	194	26	206	22	43	94	61
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	534	1246	510	1234	486	739	529	753
Starvation Cap Reductn	0	0	0	314	0	0	0	0
Spillback Cap Reductn	0	66	0	0	0	6	4	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.46	0.08	0.57	0.05	0.11	0.32	0.23

Intersection Summary

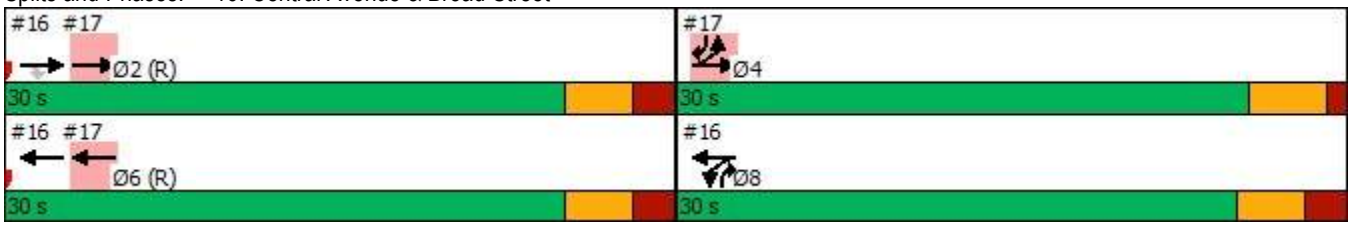


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	580	85	515	485	0	390		
Future Volume (vph)	580	85	515	485	0	390		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2059	1750	1956	2059	0	1781		
Flt Permitted			0.950					
Satd. Flow (perm)	2059	1750	1956	2059	0	1781		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		89				158		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	716			
Travel Time (s)	8.7			2.8	19.5			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%		
Adj. Flow (vph)	611	89	542	511	0	411		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	611	89	542	511	0	411		
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0			7.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	23.5	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.5	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	26.6	26.6	23.4	60.0		23.4		
Actuated g/C Ratio	0.44	0.44	0.39	1.00		0.39		
v/c Ratio	0.67	0.11	0.71	0.25		0.52		
Control Delay	19.4	5.8	24.9	0.3		10.5		
Queue Delay	4.0	0.0	17.7	0.0		0.1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	23.4	5.8	42.6	0.3		10.6		
LOS	C	A	D	A		B		
Approach Delay	21.2			22.1	10.6			
Approach LOS	C			C	B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 19.6		Intersection LOS: B	
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	611	89	542	511	411
v/c Ratio	0.67	0.11	0.71	0.25	0.52
Control Delay	19.4	5.8	24.9	0.3	10.5
Queue Delay	4.0	0.0	17.7	0.0	0.1
Total Delay	23.4	5.8	42.6	0.3	10.6
Queue Length 50th (ft)	183	3	194	0	59
Queue Length 95th (ft)	269	34	290	0	125
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	912	825	815	2027	834
Starvation Cap Reductn	126	0	268	0	0
Spillback Cap Reductn	218	0	0	12	53
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.88	0.11	0.99	0.25	0.53

Intersection Summary



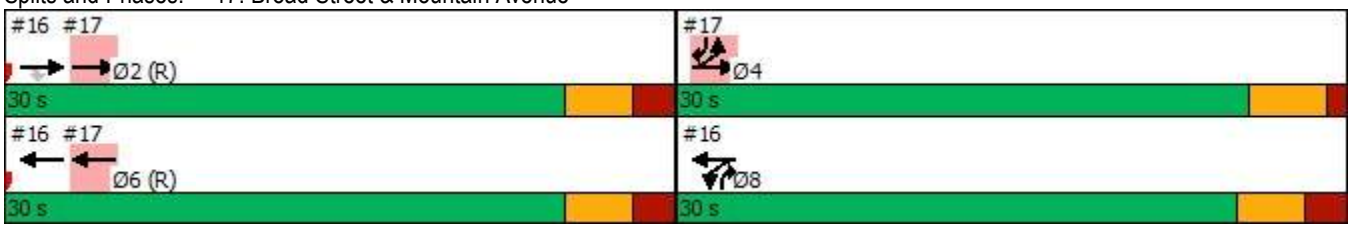
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	460	505	525	25	0	475		
Future Volume (vph)	460	505	525	25	0	475		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.993			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1956	2059	3884	0	0	3080		
Flt Permitted	0.950							
Satd. Flow (perm)	1956	2059	3884	0	0	3080		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			10			338		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	398		1032			
Travel Time (s)		2.5	10.9		28.1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%		
Adj. Flow (vph)	484	532	553	26	0	500		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	484	532	579	0	0	500		
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	7.0
Minimum Split (s)	23.5		30.0			23.5	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.5		25.0			25.5	25.0	25.0
Yellow Time (s)	3.5		3.0			3.5	3.0	3.0
All-Red Time (s)	1.0		2.0			1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	4.5		5.0			4.5		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	23.9	60.0	26.6			23.9		
Actuated g/C Ratio	0.40	1.00	0.44			0.40		
v/c Ratio	0.62	0.26	0.34			0.35		
Control Delay	19.4	0.2	11.9			4.5		
Queue Delay	20.0	0.0	54.9			0.1		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	39.4	0.2	66.9			4.6		
LOS	D	A	E			A		
Approach Delay		18.9	66.9		4.6			
Approach LOS		B	E		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 28.8		Intersection LOS: C	
Intersection Capacity Utilization 44.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	484	532	579	500
v/c Ratio	0.62	0.26	0.34	0.35
Control Delay	19.4	0.2	11.9	4.5
Queue Delay	20.0	0.0	54.9	0.1
Total Delay	39.4	0.2	66.9	4.6
Queue Length 50th (ft)	145	0	71	19
Queue Length 95th (ft)	230	0	104	47
Internal Link Dist (ft)		13	318	
Turn Bay Length (ft)				150
Base Capacity (vph)	831	2027	1727	1503
Starvation Cap Reductn	344	0	0	0
Spillback Cap Reductn	0	0	1245	240
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.99	0.26	1.20	0.40

Intersection Summary

Kimley»Horn

DRAFT

Existing Saturday Midday Peak

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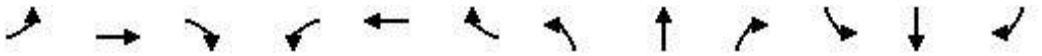
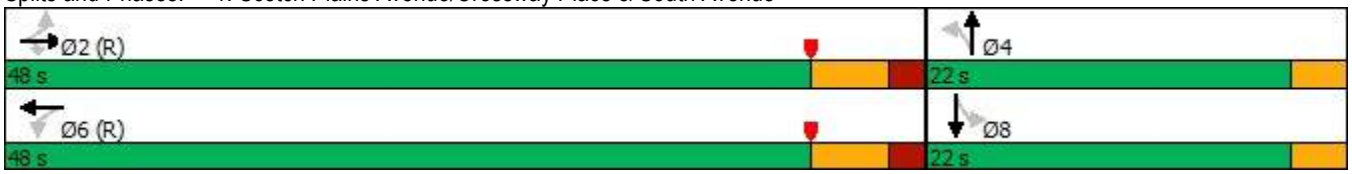


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	360	44	25	336	73	42	154	19	61	132	115
Future Volume (vph)	145	360	44	25	336	73	42	154	19	61	132	115
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.977			0.983			0.930	
Flt Protected		0.986			0.997		0.950			0.950		
Satd. Flow (prot)	0	2065	1785	0	2037	0	1995	2035	0	1975	1953	0
Flt Permitted		0.760			0.960		0.315			0.473		
Satd. Flow (perm)	0	1591	1785	0	1962	0	662	2035	0	983	1953	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			46		26			9			61	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	4%	0%	1%	0%	1%	5%	1%	0%	0%
Adj. Flow (vph)	151	375	46	26	350	76	44	160	20	64	138	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	526	46	0	452	0	44	180	0	64	258	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		48.3	48.3		48.3		12.7	12.7		12.7	12.7	
Actuated g/C Ratio		0.69	0.69		0.69		0.18	0.18		0.18	0.18	
v/c Ratio		0.48	0.04		0.33		0.37	0.48		0.36	0.64	
Control Delay		11.5	4.4		5.6		32.4	27.7		29.3	26.8	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.5	4.4		5.6		32.4	27.7		29.3	26.8	
LOS		B	A		A		C	C		C	C	
Approach Delay		10.9			5.6			28.6			27.3	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 15.3		Intersection LOS: B	
Intersection Capacity Utilization 80.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	526	46	452	44	180	64	258
v/c Ratio	0.48	0.04	0.33	0.37	0.48	0.36	0.64
Control Delay	11.5	4.4	5.6	32.4	27.7	29.3	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	4.4	5.6	32.4	27.7	29.3	26.8
Queue Length 50th (ft)	136	1	59	17	67	25	78
Queue Length 95th (ft)	264	22	132	42	109	52	133
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	1098	1246	1362	179	558	266	574
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.04	0.33	0.25	0.32	0.24	0.45

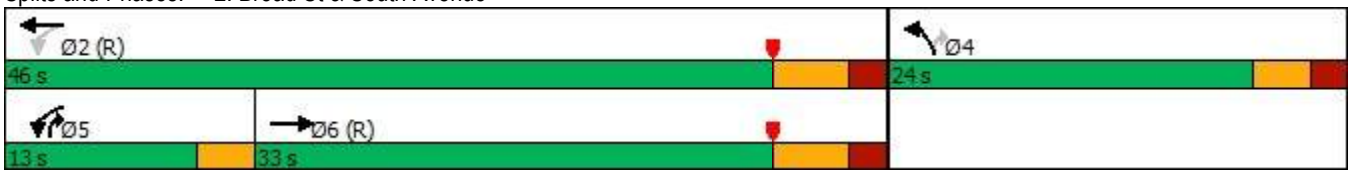
Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	388	72	401	400	107	301
Future Volume (vph)	388	72	401	400	107	301
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.979					0.850
Flt Protected				0.976	0.950	
Satd. Flow (prot)	2018	0	0	3875	1995	1785
Flt Permitted				0.592	0.950	
Satd. Flow (perm)	2018	0	0	2350	1995	1785
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	12%	1%	0%	0%	0%
Adj. Flow (vph)	396	73	409	408	109	307
Shared Lane Traffic (%)						
Lane Group Flow (vph)	469	0	0	817	109	307
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	7.0		10.0	9.0	7.0	10.0
Minimum Split (s)	33.0		13.0	35.0	22.0	13.0
Total Split (s)	33.0		13.0	46.0	24.0	13.0
Total Split (%)	47.1%		18.6%	65.7%	34.3%	18.6%
Maximum Green (s)	27.0		10.0	40.0	19.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	7.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	39.5			52.7	8.7	21.5
Actuated g/C Ratio	0.56			0.75	0.12	0.31
v/c Ratio	0.41			0.42	0.44	0.56
Control Delay	11.2			4.1	33.8	23.6
Queue Delay	0.0			0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	11.2			4.1	33.8	23.6
LOS	B			A	C	C
Approach Delay	11.2			4.1	26.2	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Broad St & South Avenue



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	469	817	109	307
v/c Ratio	0.41	0.42	0.44	0.56
Control Delay	11.2	4.1	33.8	23.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.2	4.1	33.8	23.6
Queue Length 50th (ft)	111	50	45	105
Queue Length 95th (ft)	198	85	85	163
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	1139	1927	541	547
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	0.41	0.42	0.20	0.56

Intersection Summary

MOVEMENT SUMMARY

Site: 101 [Westfield RAB_Existing_SAT (Site Folder: Existing Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	14	0.0	15	0.0	0.598	12.8	LOS B	5.3	134.7	0.72	0.90	1.19	22.3
6	T1	329	0.0	358	0.0	0.598	12.8	LOS B	5.3	134.7	0.72	0.90	1.19	20.6
16	R2	331	7.0	360	7.0	0.598	9.5	LOS A	5.3	134.7	0.61	0.67	0.82	22.7
Approach		674	3.4	732	3.4	0.598	11.2	LOS B	5.3	134.7	0.67	0.79	1.01	21.6
North: SB - SR 28														
7	L2	338	0.0	367	0.0	0.415	8.0	LOS A	2.1	52.5	0.55	0.48	0.55	23.0
14	R2	351	0.0	382	0.0	0.415	6.8	LOS A	2.1	52.5	0.50	0.43	0.50	21.3
Approach		689	0.0	749	0.0	0.415	7.4	LOS A	2.1	52.5	0.53	0.46	0.53	22.3
West: EB - South Ave														
5	L2	476	0.0	517	0.0	0.717	15.3	LOS C	10.7	268.2	0.79	1.02	1.46	14.4
2	T1	373	1.0	405	1.0	0.717	10.8	LOS B	10.7	268.2	0.63	0.72	1.00	22.6
Approach		849	0.4	923	0.4	0.717	13.4	LOS B	10.7	268.2	0.72	0.89	1.26	17.5
All Vehicles		2212	1.2	2404	1.2	0.717	10.8	LOS B	10.7	268.2	0.64	0.72	0.95	20.0

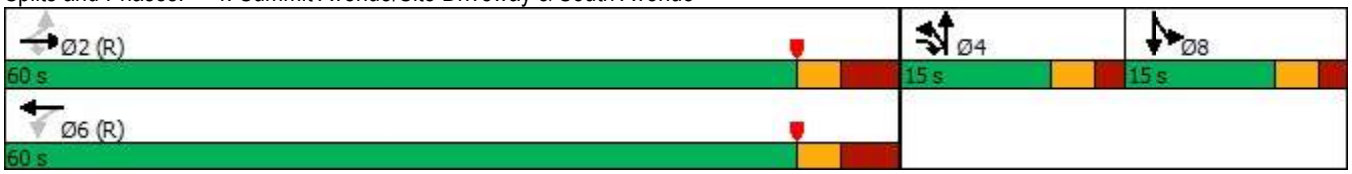
Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	582	38	20	528	11	91	13	32	12	2	17
Future Volume (vph)	9	582	38	20	528	11	91	13	32	12	2	17
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	0		70	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997			0.895			0.865	
Flt Protected		0.999			0.998		0.950			0.950		
Satd. Flow (prot)	0	2098	1785	0	3970	0	1995	1880	0	1995	1817	0
Flt Permitted		0.991			0.923		0.950			0.950		
Satd. Flow (perm)	0	2081	1785	0	3672	0	1995	1880	0	1995	1817	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			40		4			33			18	
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		511			169			500			138	
Travel Time (s)		13.9			3.8			13.6			3.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	9	606	40	21	550	11	95	14	33	13	2	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	615	40	0	582	0	95	47	0	13	20	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		65.6	79.7		65.6		9.0	9.0		7.1	7.1	
Actuated g/C Ratio		0.73	0.89		0.73		0.10	0.10		0.08	0.08	
v/c Ratio		0.41	0.03		0.22		0.48	0.22		0.08	0.13	
Control Delay		8.1	0.6		6.1		46.4	20.5		39.8	20.7	
Queue Delay		0.2	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		8.3	0.6		6.1		46.4	20.5		39.8	20.7	
LOS		A	A		A		D	C		D	C	
Approach Delay		7.8			6.1			37.8			28.2	
Approach LOS		A			A			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	615	40	582	95	47	13	20
v/c Ratio	0.41	0.03	0.22	0.48	0.22	0.08	0.13
Control Delay	8.1	0.6	6.1	46.4	20.5	39.8	20.7
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	0.6	6.1	46.4	20.5	39.8	20.7
Queue Length 50th (ft)	167	0	69	52	7	7	1
Queue Length 95th (ft)	249	4	96	99	39	25	23
Internal Link Dist (ft)	431		89		420		58
Turn Bay Length (ft)							
Base Capacity (vph)	1516	1575	2676	221	238	221	217
Starvation Cap Reductn	251	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.03	0.22	0.43	0.20	0.06	0.09

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	590	42	32	504	42	104
Future Volume (vph)	590	42	32	504	42	104
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.991				0.904	
Flt Protected				0.997	0.986	
Satd. Flow (prot)	2081	0	0	3978	1872	0
Flt Permitted				0.997	0.986	
Satd. Flow (perm)	2081	0	0	3978	1872	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	326			279	211	
Travel Time (s)	7.4			6.3	4.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	602	43	33	514	43	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	645	0	0	547	149	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	590	42	32	504	42	104
Future Vol, veh/h	590	42	32	504	42	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	602	43	33	514	43	106

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	645	0	947	624
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	323	-
Critical Hdwy	-	-	4.1	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	950	-	277	489
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	712	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	950	-	263	489
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	19.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	392	-	-	950	-
HCM Lane V/C Ratio	0.38	-	-	0.034	-
HCM Control Delay (s)	19.7	-	-	8.9	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.7	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	21	655	542	16	18	37
Future Volume (vph)	21	655	542	16	18	37
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.996		0.908	
Flt Protected		0.998			0.984	
Satd. Flow (prot)	0	2096	3974	0	1876	0
Flt Permitted		0.998			0.984	
Satd. Flow (perm)	0	2096	3974	0	1876	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		279	494		163	
Travel Time (s)		6.3	11.2		4.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	23	704	583	17	19	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	727	600	0	59	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	655	542	16	18	37
Future Vol, veh/h	21	655	542	16	18	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	704	583	17	19	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	600	0	-	0	1342	300
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	750	-
Critical Hdwy	4.1	-	-	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	987	-	-	-	157	702
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	470	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	987	-	-	-	151	702
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	470	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	987	-	-	-	320
HCM Lane V/C Ratio	0.023	-	-	-	0.185
HCM Control Delay (s)	8.7	0	-	-	18.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

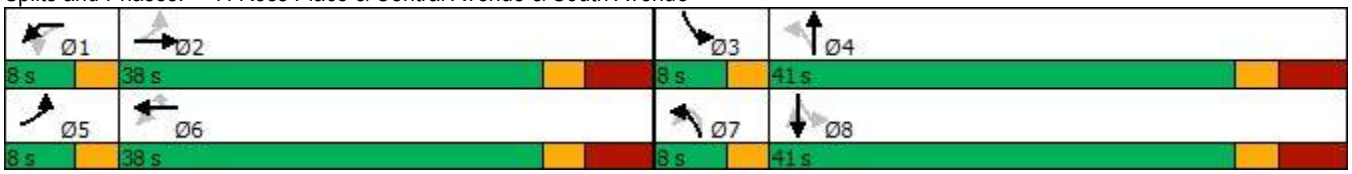
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	119	370	169	11	60	26	353	190	4	130	443	28
Future Volume (vph)	119	370	169	11	60	26	353	190	4	130	443	28
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.951						0.850			0.991	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1995	3744	0	0	0	1995	2100	1767	0	1976	2038	0
Flt Permitted	0.428					0.390				0.326		
Satd. Flow (perm)	899	3744	0	0	0	819	2100	1767	0	678	2038	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		2						167			4	
Link Speed (mph)		30					30				25	
Link Distance (ft)		494					926				398	
Travel Time (s)		11.2					21.0				10.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	1%	2%	4%
Adj. Flow (vph)	124	385	176	11	63	27	368	198	4	135	461	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	572	0	0	0	90	368	198	0	139	490	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	39.3	30.4				39.3	30.4	30.4		35.3	25.2	
Actuated g/C Ratio	0.46	0.35				0.46	0.35	0.35		0.41	0.29	
v/c Ratio	0.26	0.43				0.20	0.50	0.27		0.39	0.82	
Control Delay	15.4	24.0				14.8	26.6	6.9		17.9	39.9	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	168	385	89	94
Future Volume (vph)	168	385	89	94
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1995	2059	1776	0
Flt Permitted	0.198			
Satd. Flow (perm)	416	2059	1776	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		809		
Travel Time (s)		22.1		
Peak Hour Factor	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	1%	0%
Adj. Flow (vph)	175	401	93	98
Shared Lane Traffic (%)				
Lane Group Flow (vph)	175	401	191	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	35.3	25.2	25.2	
Actuated g/C Ratio	0.41	0.29	0.29	
v/c Ratio	0.67	0.67	0.31	
Control Delay	29.2	32.5	10.2	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	15.4	24.0				14.8	26.6	6.9		17.9	39.9	
LOS	B	C				B	C	A		B	D	
Approach Delay		22.5					19.1				35.1	
Approach LOS		C					B				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 86			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 25.6		Intersection LOS: C	
Intersection Capacity Utilization 73.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	29.2	32.5	10.2	
LOS	C	C	B	
Approach Delay		26.2		
Approach LOS		C		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	124	572	90	368	198	139	490	175	401	191
v/c Ratio	0.26	0.43	0.20	0.50	0.27	0.39	0.82	0.67	0.67	0.31
Control Delay	15.4	24.0	14.8	26.6	6.9	17.9	39.9	29.2	32.5	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	24.0	14.8	26.6	6.9	17.9	39.9	29.2	32.5	10.2
Queue Length 50th (ft)	37	129	26	163	12	45	249	57	194	26
Queue Length 95th (ft)	76	196	58	273	62	79	363	#101	288	74
Internal Link Dist (ft)		414		846			318		729	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	474	1323	443	741	732	355	794	263	800	766
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	0.26	0.43	0.20	0.50	0.27	0.39	0.62	0.67	0.50	0.25

Intersection Summary

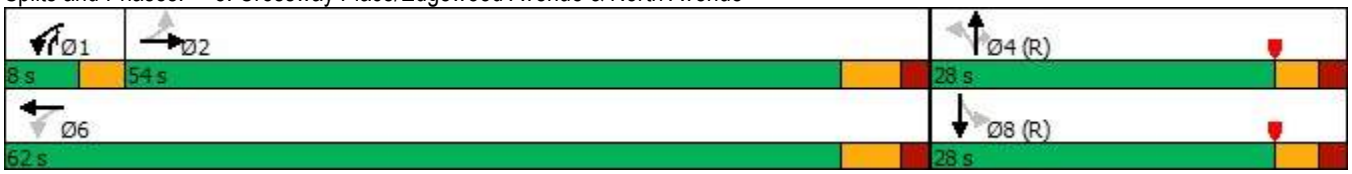
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

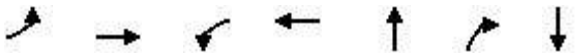
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	446	49	224	497	17	66	57	269	5	57	13
Future Volume (vph)	6	446	49	224	497	17	66	57	269	5	57	13
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.995				0.850		0.976	
Flt Protected	0.950			0.950				0.974			0.997	
Satd. Flow (prot)	1995	2050	0	1995	2050	0	0	2045	1750	0	2043	0
Flt Permitted	0.448			0.332				0.804			0.985	
Satd. Flow (perm)	941	2050	0	697	2050	0	0	1688	1750	0	2019	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			4				289		11	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
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 (%)	0%	1%	0%	0%	2%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	6	480	53	241	534	18	71	61	289	5	61	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	533	0	241	552	0	0	132	289	0	80	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	54.0	54.0		8.0	62.0		28.0	28.0	8.0	28.0	28.0	
Total Split (%)	60.0%	60.0%		8.9%	68.9%		31.1%	31.1%	8.9%	31.1%	31.1%	
Maximum Green (s)	48.0	48.0		5.0	56.0		23.0	23.0	5.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		59.0	56.0			23.0	33.0		23.0	
Actuated g/C Ratio	0.53	0.53		0.66	0.62			0.26	0.37		0.26	
v/c Ratio	0.01	0.49		0.46	0.43			0.31	0.35		0.15	
Control Delay	10.0	14.9		9.1	10.0			29.5	3.8		23.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.0	14.9		9.1	10.0			29.5	3.8		23.5	
LOS	A	B		A	B			C	A		C	
Approach Delay		14.8			9.7			11.8			23.5	
Approach LOS		B			A			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	6	533	241	552	132	289	80
v/c Ratio	0.01	0.49	0.46	0.43	0.31	0.35	0.15
Control Delay	10.0	14.9	9.1	10.0	29.5	3.8	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	14.9	9.1	10.0	29.5	3.8	23.5
Queue Length 50th (ft)	2	177	48	146	61	0	30
Queue Length 95th (ft)	7	260	77	213	111	50	66
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	501	1097	529	1277	431	824	524
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.49	0.46	0.43	0.31	0.35	0.15

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	527	483	146	151	34
Future Volume (vph)	13	527	483	146	151	34
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.969			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	2098	2030	0	1995	1785
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	2098	2030	0	1995	1785
Link Speed (mph)		35	35		25	
Link Distance (ft)		175	117		156	
Travel Time (s)		3.4	2.3		4.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	13	543	498	151	156	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	556	649	0	156	35
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	527	483	146	151	34
Future Vol, veh/h	13	527	483	146	151	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	13	543	498	151	156	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	649	0	-	0	1143	574
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	569	-
Critical Hdwy	4.1	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	947	-	-	-	421	707
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	570	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	947	-	-	-	413	707
Mov Cap-2 Maneuver	-	-	-	-	413	-
Stage 1	-	-	-	-	556	-
Stage 2	-	-	-	-	570	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	947	-	-	-	413	707
HCM Lane V/C Ratio	0.014	-	-	-	0.377	0.05
HCM Control Delay (s)	8.9	0	-	-	18.9	10.4
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	1.7	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	165	160	0	41	11
Future Volume (vph)	0	165	160	0	41	11
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.972	
Flt Protected					0.962	
Satd. Flow (prot)	0	2079	2100	0	1964	0
Flt Permitted					0.962	
Satd. Flow (perm)	0	2079	2100	0	1964	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		92	156		448	
Travel Time (s)		2.5	4.3		12.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	183	178	0	46	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	183	178	0	58	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 17.9%		ICU Level of Service A	
Analysis Period (min) 15			

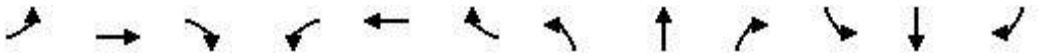
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	165	160	0	41	11
Future Vol, veh/h	0	165	160	0	41	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	0	183	178	0	46	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	361	178
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	642	870
Stage 1	0	-	-	0	858	-
Stage 2	0	-	-	0	853	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	642	870
Mov Cap-2 Maneuver	-	-	-	-	642	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	853	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	680
HCM Lane V/C Ratio	-	-	0.085
HCM Control Delay (s)	-	-	10.8
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.3

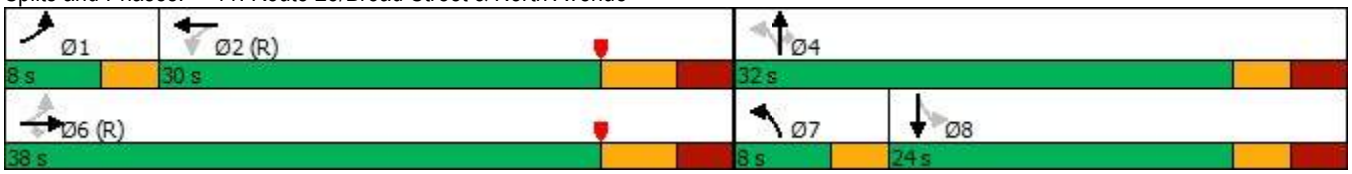


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	268	313	187	381	12	211	407	158	46	371	86
Future Volume (vph)	108	268	313	187	381	12	211	407	158	46	371	86
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.997				0.850		0.974	
Flt Protected	0.950				0.984		0.950				0.995	
Satd. Flow (prot)	1975	1600	1767	0	3790	0	1995	2100	1785	0	3832	0
Flt Permitted	0.347				0.758		0.292				0.865	
Satd. Flow (perm)	721	1600	1767	0	2920	0	613	2100	1785	0	3331	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			323		3						33	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		278			555			498			430	
Travel Time (s)		5.4			15.1			13.6			11.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	2%	4%	0%	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	111	276	323	193	393	12	218	420	163	47	382	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	276	323	0	598	0	218	420	163	0	518	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	37.6	33.6	33.6		26.5		26.4	23.4	23.4		15.4	
Actuated g/C Ratio	0.54	0.48	0.48		0.38		0.38	0.33	0.33		0.22	
v/c Ratio	0.23	0.36	0.32		0.54		0.66	0.60	0.27		0.68	
Control Delay	10.0	13.9	2.6		19.6		25.9	23.0	17.7		28.1	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.0	13.9	2.6		19.6		25.9	23.0	17.7		28.1	
LOS	A	B	A		B		C	C	B		C	
Approach Delay		8.1			19.6			22.7			28.1	
Approach LOS		A			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 85.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	111	276	323	598	218	420	163	518
v/c Ratio	0.23	0.36	0.32	0.54	0.66	0.60	0.27	0.68
Control Delay	10.0	13.9	2.6	19.6	25.9	23.0	17.7	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	13.9	2.6	19.6	25.9	23.0	17.7	28.1
Queue Length 50th (ft)	22	72	0	144	63	145	50	99
Queue Length 95th (ft)	48	133	40	157	#104	220	89	143
Internal Link Dist (ft)		198		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	491	768	1016	1109	329	780	663	881
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.36	0.32	0.54	0.66	0.54	0.25	0.59

Intersection Summary

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

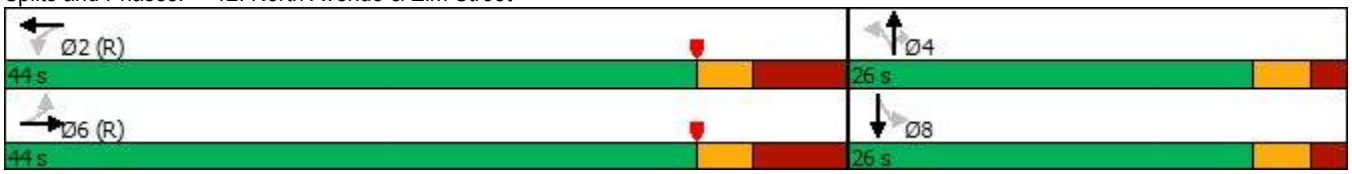
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	417	45	36	564	130	0	0	0	126	26	91
Future Volume (vph)	24	417	45	36	564	130	0	0	0	126	26	91
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.986			0.973						0.949	
Flt Protected		0.998			0.998						0.975	
Satd. Flow (prot)	0	3926	0	0	3875	0	0	1900	2000	0	1758	0
Flt Permitted		0.895			0.906						0.837	
Satd. Flow (perm)	0	3521	0	0	3517	0	0	1900	2000	0	1509	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			54						44	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			479			193			176	
Travel Time (s)		4.4			13.1			4.4			4.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	24	421	45	36	570	131	0	0	0	127	26	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	490	0	0	737	0	0	0	0	0	245	0
Turn Type	Perm	NA		Perm	NA				Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		26.0	26.0	26.0	26.0	26.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	Max	Max	
Act Effct Green (s)		36.0			36.0						21.0	
Actuated g/C Ratio		0.51			0.51						0.30	
v/c Ratio		0.27			0.40						0.51	
Control Delay		7.7			10.4						20.8	
Queue Delay		0.0			0.0						0.0	
Total Delay		7.7			10.4						20.8	
LOS		A			B						C	
Approach Delay		7.7			10.4						20.8	
Approach LOS		A			B						C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 61.9%		ICU Level of Service B	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	490	737	245
v/c Ratio	0.27	0.40	0.51
Control Delay	7.7	10.4	20.8
Queue Delay	0.0	0.0	0.0
Total Delay	7.7	10.4	20.8
Queue Length 50th (ft)	17	66	73
Queue Length 95th (ft)	52	131	142
Internal Link Dist (ft)	83	399	96
Turn Bay Length (ft)			
Base Capacity (vph)	1821	1834	483
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.27	0.40	0.51

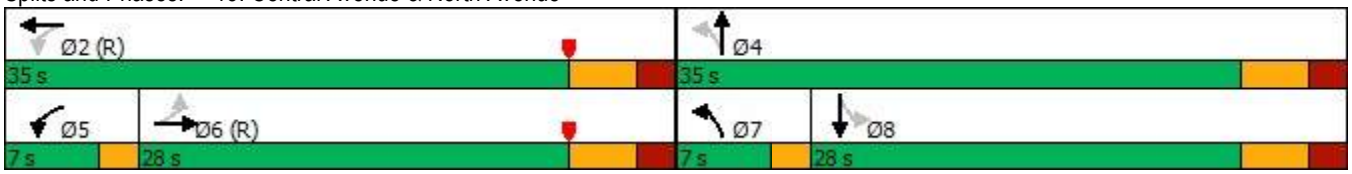
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	367	162	198	510	58	169	470	143	42	435	29
Future Volume (vph)	70	367	162	198	510	58	169	470	143	42	435	29
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.959			0.989			0.973			0.991	
Flt Protected		0.994			0.987			0.989			0.996	
Satd. Flow (prot)	0	3803	0	0	3895	0	0	3826	0	0	3932	0
Flt Permitted		0.772			0.617			0.650			0.823	
Satd. Flow (perm)	0	2954	0	0	2435	0	0	2514	0	0	3249	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					15			47				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		203			706			809			223	
Travel Time (s)		5.5			13.8			22.1			6.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%
Adj. Flow (vph)	71	374	165	202	520	59	172	480	146	43	444	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	610	0	0	781	0	0	798	0	0	517	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		25.2			32.6			26.2			19.2	
Actuated g/C Ratio		0.36			0.47			0.37			0.27	
v/c Ratio		0.57			0.66			0.80			0.58	
Control Delay		17.5			18.0			24.5			24.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		17.5			18.0			24.5			24.2	
LOS		B			B			C			C	
Approach Delay		17.5			18.0			24.5			24.2	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 21.0		Intersection LOS: C	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 13: Central Avenue & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	610	781	798	517
v/c Ratio	0.57	0.66	0.80	0.58
Control Delay	17.5	18.0	24.5	24.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.5	18.0	24.5	24.2
Queue Length 50th (ft)	87	115	124	97
Queue Length 95th (ft)	99	167	166	137
Internal Link Dist (ft)	123	626	729	143
Turn Bay Length (ft)				
Base Capacity (vph)	1065	1178	1109	1039
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	0.57	0.66	0.72	0.50

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	426	1	0	343	66	17	45	75	0	0	164
Future Volume (vph)	134	426	1	0	343	66	17	45	75	0	0	164
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.978			0.926			0.865	
Flt Protected	0.950							0.994				
Satd. Flow (prot)	1995	2079	0	0	2044	0	0	1933	0	0	1799	0
Flt Permitted	0.950							0.994				
Satd. Flow (perm)	1995	2079	0	0	2044	0	0	1933	0	0	1799	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
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 (%)	0%	1%	0%	0%	0%	3%	0%	0%	0%	0%	0%	1%
Adj. Flow (vph)	144	458	1	0	369	71	18	48	81	0	0	176
Shared Lane Traffic (%)												
Lane Group Flow (vph)	144	459	0	0	440	0	0	147	0	0	176	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.3%		ICU Level of Service B	
Analysis Period (min) 15			

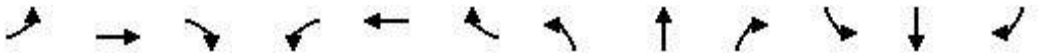
Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	134	426	1	0	343	66	17	45	75	0	0	164
Future Vol, veh/h	134	426	1	0	343	66	17	45	75	0	0	164
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	1	0	0	0	3	0	0	0	0	0	1
Mvmt Flow	144	458	1	0	369	71	18	48	81	0	0	176

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	440	0	0	-	-	0	1240	1187	459	-	1152	405
Stage 1	-	-	-	-	-	-	747	747	-	-	405	-
Stage 2	-	-	-	-	-	-	493	440	-	-	747	-
Critical Hdwy	4.1	-	-	-	-	-	7.1	6.5	6.2	-	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3	-	4	3.309
Pot Cap-1 Maneuver	1131	-	-	0	-	-	153	190	606	0	199	648
Stage 1	-	-	-	0	-	-	408	423	-	0	602	-
Stage 2	-	-	-	0	-	-	562	581	-	0	423	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1131	-	-	-	-	-	101	166	606	-	174	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	101	166	-	-	174	-
Stage 1	-	-	-	-	-	-	356	369	-	-	602	-
Stage 2	-	-	-	-	-	-	409	581	-	-	369	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	40.3	12.6
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	243	1131	-	-	-	-	648
HCM Lane V/C Ratio	0.606	0.127	-	-	-	-	0.272
HCM Control Delay (s)	40.3	8.6	-	-	-	-	12.6
HCM Lane LOS	E	A	-	-	-	-	B
HCM 95th %tile Q(veh)	3.6	0.4	-	-	-	-	1.1

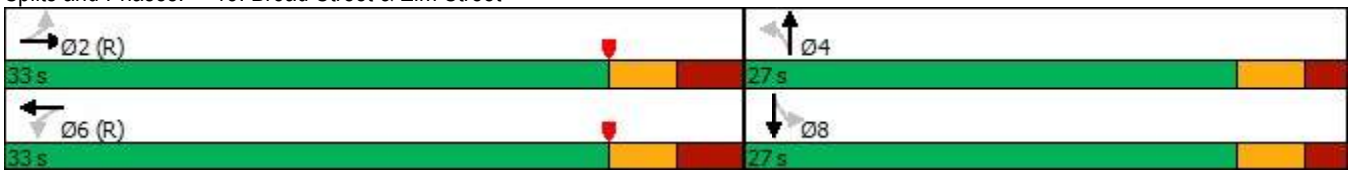


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	337	72	31	277	78	50	147	84	122	114	80
Future Volume (vph)	74	337	72	31	277	78	50	147	84	122	114	80
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.967			0.945			0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1995	2045	0	1995	2031	0	1995	1985	0	1995	1970	0
Flt Permitted	0.541			0.499			0.573			0.482		
Satd. Flow (perm)	1136	2045	0	1048	2031	0	1203	1985	0	1012	1970	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			31			54			66	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	77	351	75	32	289	81	52	153	88	127	119	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	426	0	32	370	0	52	241	0	127	202	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	37.2	37.2		37.2	37.2		11.8	11.8		11.8	11.8	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.20	0.20		0.20	0.20	
v/c Ratio	0.11	0.33		0.05	0.29		0.22	0.56		0.64	0.46	
Control Delay	6.5	6.9		6.7	7.6		20.6	20.8		35.9	16.6	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	6.5	6.9		6.7	7.9		20.6	20.8		35.9	16.6	
LOS	A	A		A	A		C	C		D	B	
Approach Delay		6.8			7.8			20.8			24.1	
Approach LOS		A			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	77	426	32	370	52	241	127	202
v/c Ratio	0.11	0.33	0.05	0.29	0.22	0.56	0.64	0.46
Control Delay	6.5	6.9	6.7	7.6	20.6	20.8	35.9	16.6
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	6.5	6.9	6.7	7.9	20.6	20.8	35.9	16.6
Queue Length 50th (ft)	10	58	5	73	16	61	43	43
Queue Length 95th (ft)	31	133	21	144	37	105	81	82
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	704	1275	649	1270	441	762	371	764
Starvation Cap Reductn	0	0	0	418	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.33	0.05	0.43	0.12	0.32	0.34	0.26

Intersection Summary

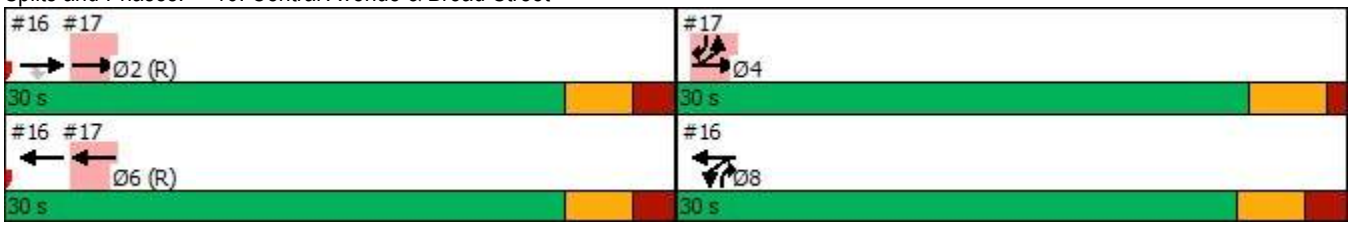


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	401	157	455	392	0	359		
Future Volume (vph)	401	157	455	392	0	359		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2100	1785	1995	2100	0	1817		
Flt Permitted			0.950					
Satd. Flow (perm)	2100	1785	1995	2100	0	1817		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		164				297		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	716			
Travel Time (s)	8.7			2.8	19.5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	418	164	474	408	0	374		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	418	164	474	408	0	374		
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0			7.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	23.5	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.5	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	27.9	27.9	22.1	60.0		22.1		
Actuated g/C Ratio	0.46	0.46	0.37	1.00		0.37		
v/c Ratio	0.43	0.18	0.64	0.19		0.44		
Control Delay	13.7	4.5	23.7	0.2		4.8		
Queue Delay	0.3	0.0	16.7	0.0		0.1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	13.9	4.5	40.5	0.2		4.9		
LOS	B	A	D	A		A		
Approach Delay	11.3			21.9	4.9			
Approach LOS	B			C	A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	418	164	474	408	374
v/c Ratio	0.43	0.18	0.64	0.19	0.44
Control Delay	13.7	4.5	23.7	0.2	4.8
Queue Delay	0.3	0.0	16.7	0.0	0.1
Total Delay	13.9	4.5	40.5	0.2	4.9
Queue Length 50th (ft)	97	0	159	0	16
Queue Length 95th (ft)	172	38	245	0	61
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	976	917	831	2094	930
Starvation Cap Reductn	154	0	346	0	0
Spillback Cap Reductn	158	0	0	0	62
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.18	0.98	0.19	0.43

Intersection Summary



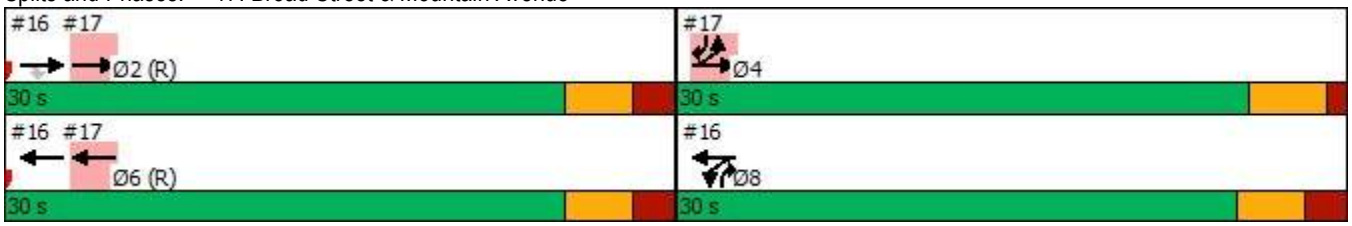
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	391	368	439	39	0	410		
Future Volume (vph)	391	368	439	39	0	410		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.988			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1995	2100	3942	0	0	3142		
Flt Permitted	0.950							
Satd. Flow (perm)	1995	2100	3942	0	0	3142		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			19			466		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	398		1032			
Travel Time (s)		2.5	10.9		28.1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	403	379	453	40	0	423		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	403	379	493	0	0	423		
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	7.0
Minimum Split (s)	23.5		30.0			23.5	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.5		25.0			25.5	25.0	25.0
Yellow Time (s)	3.5		3.0			3.5	3.0	3.0
All-Red Time (s)	1.0		2.0			1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	4.5		5.0			4.5		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	22.6	60.0	27.9			22.6		
Actuated g/C Ratio	0.38	1.00	0.46			0.38		
v/c Ratio	0.54	0.18	0.27			0.29		
Control Delay	19.2	0.2	10.7			1.5		
Queue Delay	9.1	0.0	1.2			0.1		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	28.4	0.2	11.9			1.6		
LOS	C	A	B			A		
Approach Delay		14.7	11.9		1.6			
Approach LOS		B	B		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	403	379	493	423
v/c Ratio	0.54	0.18	0.27	0.29
Control Delay	19.2	0.2	10.7	1.5
Queue Delay	9.1	0.0	1.2	0.1
Total Delay	28.4	0.2	11.9	1.6
Queue Length 50th (ft)	123	0	57	0
Queue Length 95th (ft)	185	0	86	17
Internal Link Dist (ft)		13	318	
Turn Bay Length (ft)				150
Base Capacity (vph)	847	2094	1841	1603
Starvation Cap Reductn	403	0	0	0
Spillback Cap Reductn	0	0	1079	265
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.91	0.18	0.65	0.32

Intersection Summary

Kimley»Horn

DRAFT

2027 No-Build AM Peak

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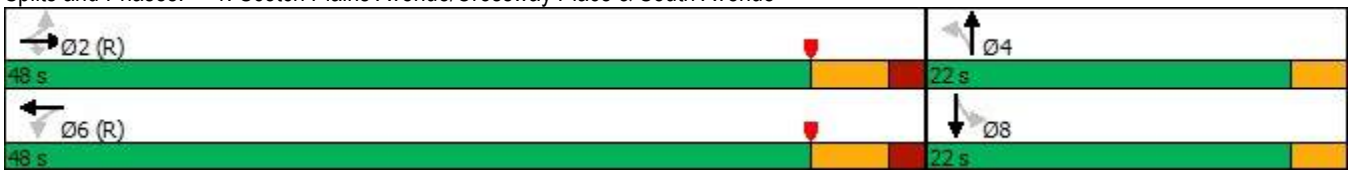
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	199	46	0	159	41	46	294	10	92	186	42
Future Volume (vph)	287	199	46	0	159	41	46	294	10	92	186	42
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.972			0.995			0.972	
Flt Protected		0.971					0.950			0.950		
Satd. Flow (prot)	0	1942	1700	0	1944	0	1900	1990	0	1900	1944	0
Flt Permitted		0.703					0.404			0.254		
Satd. Flow (perm)	0	1406	1700	0	1944	0	808	1990	0	508	1944	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			48		33			3			16	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	302	209	48	0	167	43	48	309	11	97	196	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	511	48	0	210	0	48	320	0	97	240	0
Turn Type	Perm	NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		45.2	45.2		45.2		15.8	15.8		15.8	15.8	
Actuated g/C Ratio		0.65	0.65		0.65		0.23	0.23		0.23	0.23	
v/c Ratio		0.56	0.04		0.17		0.26	0.71		0.85	0.53	
Control Delay		16.9	4.5		5.1		24.9	33.4		80.1	26.1	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		16.9	4.5		5.1		24.9	33.4		80.1	26.1	
LOS		B	A		A		C	C		F	C	
Approach Delay		15.8			5.1			32.3			41.6	
Approach LOS		B			A			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 24.3		Intersection LOS: C	
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	511	48	210	48	320	97	240
v/c Ratio	0.56	0.04	0.17	0.26	0.71	0.85	0.53
Control Delay	16.9	4.5	5.1	24.9	33.4	80.1	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	4.5	5.1	24.9	33.4	80.1	26.1
Queue Length 50th (ft)	202	5	26	17	125	40	84
Queue Length 95th (ft)	307	m11	57	43	195	#113	141
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	907	1114	1267	219	542	137	539
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.04	0.17	0.22	0.59	0.71	0.45

Intersection Summary

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

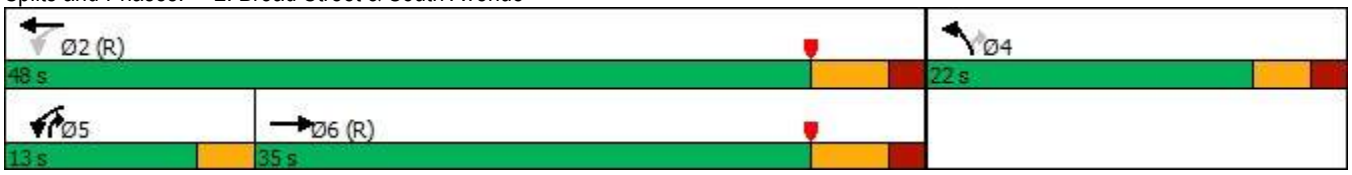
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	372	92	761	192	92	375
Future Volume (vph)	372	92	761	192	92	375
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.973					0.850
Flt Protected				0.962	0.950	
Satd. Flow (prot)	1946	0	0	3656	1900	1700
Flt Permitted				0.547	0.950	
Satd. Flow (perm)	1946	0	0	2079	1900	1700
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	392	97	801	202	97	395
Shared Lane Traffic (%)						
Lane Group Flow (vph)	489	0	0	1003	97	395
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	10.0		9.0	9.0	7.0	9.0
Minimum Split (s)	35.0		13.0	35.0	22.0	13.0
Total Split (s)	35.0		13.0	48.0	22.0	13.0
Total Split (%)	50.0%		18.6%	68.6%	31.4%	18.6%
Maximum Green (s)	29.0		10.0	42.0	17.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	9.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	37.2			52.9	8.5	23.8
Actuated g/C Ratio	0.53			0.76	0.12	0.34
v/c Ratio	0.47			1.12dl	0.42	0.68
Control Delay	14.0			4.9	33.7	25.2
Queue Delay	0.0			0.0	0.0	0.0

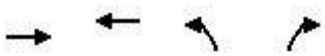
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	14.0			4.9	33.7	25.2
LOS	B			A	C	C
Approach Delay	14.0			4.9	26.9	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 12.6		Intersection LOS: B	
Intersection Capacity Utilization 80.9%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Broad Street & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	489	1003	97	395
v/c Ratio	0.47	1.12dl	0.42	0.68
Control Delay	14.0	4.9	33.7	25.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.0	4.9	33.7	25.2
Queue Length 50th (ft)	125	65	40	141
Queue Length 95th (ft)	248	111	78	191
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	1033	1789	461	583
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	0.47	0.56	0.21	0.68

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

MOVEMENT SUMMARY

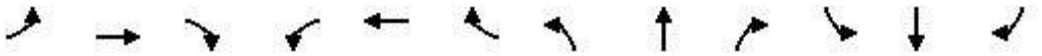
Site: 101 [Westfield RAB_Existing_AM (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	18	0.0	19	0.0	0.660	16.4	LOS C	6.1	157.2	0.79	1.04	1.48	20.4
6	T1	319	4.0	339	4.0	0.660	16.6	LOS C	6.1	157.2	0.79	1.04	1.48	18.6
16	R2	326	4.0	347	4.0	0.660	11.5	LOS B	6.1	157.2	0.68	0.78	0.98	21.4
Approach		663	3.9	705	3.9	0.660	14.1	LOS B	6.1	157.2	0.74	0.91	1.23	19.9
North: SB - SR 28														
7	L2	507	5.0	539	5.0	0.640	13.2	LOS B	7.0	182.7	0.70	0.84	1.16	19.8
14	R2	520	5.0	553	5.0	0.640	10.0	LOS A	7.0	182.7	0.60	0.60	0.75	18.9
Approach		1027	5.0	1093	5.0	0.640	11.5	LOS B	7.0	182.7	0.65	0.72	0.95	19.4
West: EB - South Ave														
5u	U	2	0.0	2	0.0	1.108	85.9	LOS F	54.4	1399.1	1.00	3.01	6.60	5.6
5	L2	633	3.0	673	3.0	1.108	86.0	LOS F	54.4	1399.1	1.00	3.01	6.60	5.7
2	T1	448	5.0	477	5.0	1.108	49.2	LOS F	54.4	1399.1	0.79	1.86	3.77	10.7
Approach		1083	3.8	1152	3.8	1.108	70.8	LOS F	54.4	1399.1	0.91	2.54	5.43	7.2
All Vehicles		2773	4.3	2950	4.3	1.108	35.3	LOS E	54.4	1399.1	0.77	1.47	2.77	11.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

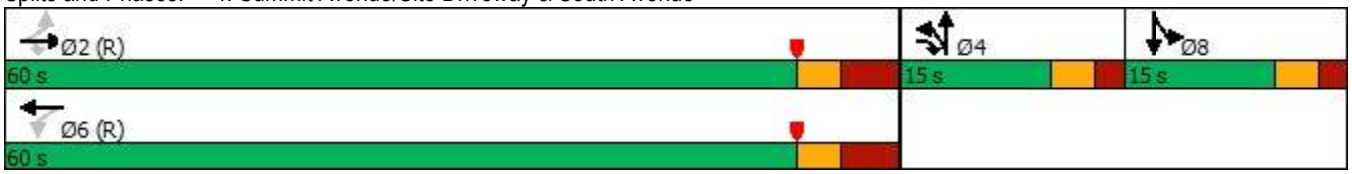


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	627	44	11	487	48	180	37	39	58	5	19
Future Volume (vph)	25	627	44	11	487	48	180	37	39	58	5	19
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		65	0		0	60		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.987			0.923			0.880	
Flt Protected		0.998			0.999		0.950			0.950		
Satd. Flow (prot)	0	1964	1700	0	3766	0	1956	1938	0	1995	1848	0
Flt Permitted		0.966			0.940		0.950			0.950		
Satd. Flow (perm)	0	1901	1700	0	3544	0	1956	1938	0	1995	1848	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			44		20			41			20	
Link Speed (mph)		25			30			25			30	
Link Distance (ft)		511			111			500			138	
Travel Time (s)		13.9			2.5			13.6			3.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	7%	5%	0%	5%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	26	653	46	11	507	50	188	39	41	60	5	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	679	46	0	568	0	188	80	0	60	25	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		57.1	75.1		57.1		10.0	10.0		8.3	8.3	
Actuated g/C Ratio		0.63	0.83		0.63		0.11	0.11		0.09	0.09	
v/c Ratio		0.56	0.03		0.25		0.87	0.32		0.33	0.13	
Control Delay		12.6	0.8		7.9		75.7	24.6		42.8	20.4	
Queue Delay		0.3	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		12.8	0.8		7.9		75.7	24.6		42.8	20.4	
LOS		B	A		A		E	C		D	C	
Approach Delay		12.1			7.9			60.4			36.2	
Approach LOS		B			A			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 19.8		Intersection LOS: B	
Intersection Capacity Utilization 73.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	679	46	568	188	80	60	25
v/c Ratio	0.56	0.03	0.25	0.87	0.32	0.33	0.13
Control Delay	12.6	0.8	7.9	75.7	24.6	42.8	20.4
Queue Delay	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	0.8	7.9	75.7	24.6	42.8	20.4
Queue Length 50th (ft)	214	0	68	107	20	33	3
Queue Length 95th (ft)	335	6	101	#226	63	70	26
Internal Link Dist (ft)	431		31		420		58
Turn Bay Length (ft)		65		60			
Base Capacity (vph)	1206	1426	2257	217	251	221	223
Starvation Cap Reductn	132	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.03	0.25	0.87	0.32	0.27	0.11

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	620	53	19	455	48	154
Future Volume (vph)	620	53	19	455	48	154
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.989				0.897	
Flt Protected				0.998	0.988	
Satd. Flow (prot)	1940	0	0	3800	1844	0
Flt Permitted				0.998	0.988	
Satd. Flow (perm)	1940	0	0	3800	1844	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	377			320	139	
Travel Time (s)	8.6			7.3	3.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	8%	0%	5%	4%	0%
Adj. Flow (vph)	660	56	20	484	51	164
Shared Lane Traffic (%)						
Lane Group Flow (vph)	716	0	0	504	215	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	620	53	19	455	48	154
Future Vol, veh/h	620	53	19	455	48	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	8	0	5	4	0
Mvmt Flow	660	56	20	484	51	164

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	716	0	970	688
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	282	-
Critical Hdwy	-	-	4.1	-	6.66	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.2	-	3.538	3.3
Pot Cap-1 Maneuver	-	-	894	-	262	450
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	894	-	254	450
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	713	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	26.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	380	-	-	894	-
HCM Lane V/C Ratio	0.566	-	-	0.023	-
HCM Control Delay (s)	26.1	-	-	9.1	0.1
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.4	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	23	750	453	23	13	21
Future Volume (vph)	23	750	453	23	13	21
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.993		0.917	
Flt Protected		0.999			0.981	
Satd. Flow (prot)	0	2001	3782	0	1833	0
Flt Permitted		0.999			0.981	
Satd. Flow (perm)	0	2001	3782	0	1833	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		320	446		143	
Travel Time (s)		7.3	10.1		3.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	5%	5%	0%	0%	5%
Bus Blockages (#/hr)	5	0	0	0	0	0
Adj. Flow (vph)	24	798	482	24	14	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	822	506	0	36	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	750	453	23	13	21
Future Vol, veh/h	23	750	453	23	13	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	5	5	0	0	5
Mvmt Flow	24	798	482	24	14	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	506	0	-	0	1340	253
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	846	-
Critical Hdwy	4.1	-	-	-	6.6	6.975
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3475
Pot Cap-1 Maneuver	1069	-	-	-	158	739
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	424	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1069	-	-	-	152	739
Mov Cap-2 Maneuver	-	-	-	-	152	-
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	424	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1069	-	-	-	298
HCM Lane V/C Ratio	0.023	-	-	-	0.121
HCM Control Delay (s)	8.4	0	-	-	18.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	214	394	164	5	21	15	295	109	10	171	615	11
Future Volume (vph)	214	394	164	5	21	15	295	109	10	171	615	11
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955						0.850			0.997	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1900	3629	0	0	0	1900	2000	1700	0	1900	1994	0
Flt Permitted	0.430					0.388				0.139		
Satd. Flow (perm)	860	3629	0	0	0	776	2000	1700	0	278	1994	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		1						126			1	
Link Speed (mph)		30					35				25	
Link Distance (ft)		446					926				398	
Travel Time (s)		10.1					18.0				10.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	225	415	173	5	22	16	311	115	11	180	647	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	593	0	0	0	38	311	115	0	191	659	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	38.1	30.2				36.8	26.7	26.7		41.4	32.5	
Actuated g/C Ratio	0.43	0.34				0.41	0.30	0.30		0.46	0.36	
v/c Ratio	0.53	0.48				0.10	0.52	0.19		0.87	0.91	
Control Delay	22.9	26.2				15.4	30.1	4.7		54.9	47.3	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

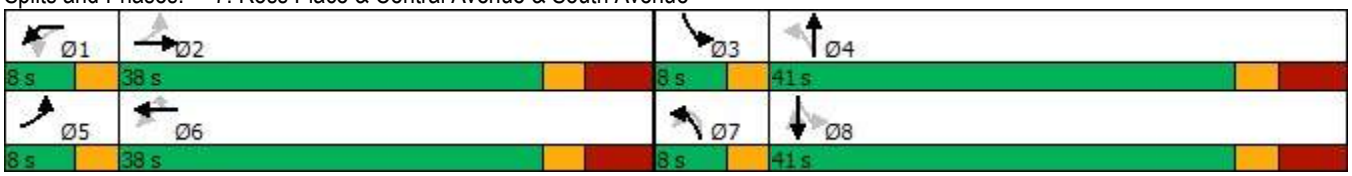


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	89	560	80	150
Future Volume (vph)	89	560	80	150
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1900	2000	1700	0
Flt Permitted	0.127			
Satd. Flow (perm)	254	2000	1700	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		792		
Travel Time (s)		21.6		
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%
Adj. Flow (vph)	94	589	84	158
Shared Lane Traffic (%)				
Lane Group Flow (vph)	94	589	242	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	40.6	30.6	30.6	
Actuated g/C Ratio	0.45	0.34	0.34	
v/c Ratio	0.45	0.86	0.37	
Control Delay	20.2	42.4	12.5	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	22.9	26.2				15.4	30.1	4.7		54.9	47.3	
LOS	C	C				B	C	A		D	D	
Approach Delay		25.3					22.6				49.0	
Approach LOS		C					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 89.5			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 33.6		Intersection LOS: C	
Intersection Capacity Utilization 80.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	20.2	42.4	12.5	
LOS	C	D	B	
Approach Delay		32.3		
Approach LOS		C		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	225	593	38	311	115	191	659	94	589	242
v/c Ratio	0.53	0.48	0.10	0.52	0.19	0.87	0.91	0.45	0.86	0.37
Control Delay	22.9	26.2	15.4	30.1	4.7	54.9	47.3	20.2	42.4	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	26.2	15.4	30.1	4.7	54.9	47.3	20.2	42.4	12.5
Queue Length 50th (ft)	82	152	12	151	0	63	382	30	325	49
Queue Length 95th (ft)	132	205	30	232	33	#165	#611	57	#512	109
Internal Link Dist (ft)		366		846			318		712	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	424	1226	381	675	657	219	741	208	742	710
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	0.53	0.48	0.10	0.46	0.18	0.87	0.89	0.45	0.79	0.34

Intersection Summary

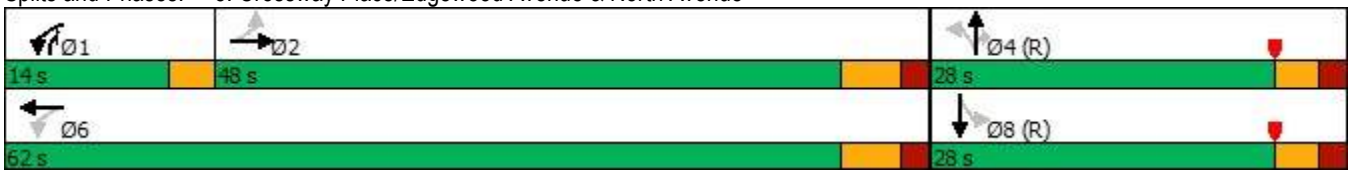
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

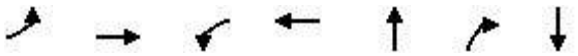
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	666	26	121	334	0	132	56	403	26	163	5
Future Volume (vph)	5	666	26	121	334	0	132	56	403	26	163	5
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994							0.850		0.997	
Flt Protected	0.950			0.950				0.966			0.993	
Satd. Flow (prot)	1900	1988	0	1900	2000	0	0	1932	1700	0	1980	0
Flt Permitted	0.550			0.167				0.582			0.941	
Satd. Flow (perm)	1100	1988	0	334	2000	0	0	1164	1700	0	1876	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							151		1	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	5	701	27	127	352	0	139	59	424	27	172	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	728	0	127	352	0	0	198	424	0	204	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	48.0	48.0		14.0	62.0		28.0	28.0	14.0	28.0	28.0	
Total Split (%)	53.3%	53.3%		15.6%	68.9%		31.1%	31.1%	15.6%	31.1%	31.1%	
Maximum Green (s)	42.0	42.0		11.0	56.0		23.0	23.0	11.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	45.1	45.1		59.0	56.0			23.0	35.9		23.0	
Actuated g/C Ratio	0.50	0.50		0.66	0.62			0.26	0.40		0.26	
v/c Ratio	0.01	0.73		0.36	0.28			0.67	0.55		0.42	
Control Delay	12.2	23.4		8.6	8.5			42.7	15.8		31.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.2	23.4		8.6	8.5			42.7	15.8		31.1	
LOS	B	C		A	A			D	B		C	
Approach Delay		23.4			8.5			24.3			31.1	
Approach LOS		C			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	728	127	352	198	424	204
v/c Ratio	0.01	0.73	0.36	0.28	0.67	0.55	0.42
Control Delay	12.2	23.4	8.6	8.5	42.7	15.8	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	23.4	8.6	8.5	42.7	15.8	31.1
Queue Length 50th (ft)	1	308	24	83	101	114	97
Queue Length 95th (ft)	7	480	43	127	#193	193	162
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	551	997	410	1244	297	822	480
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.73	0.31	0.28	0.67	0.52	0.42

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	687	540	154	197	12
Future Volume (vph)	7	687	540	154	197	12
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	2020	1963	0	1918	1785
Flt Permitted					0.950	
Satd. Flow (perm)	0	2020	1963	0	1918	1785
Link Speed (mph)		35	35		25	
Link Distance (ft)		178	387		163	
Travel Time (s)		3.5	7.5		4.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	4%	3%	4%	0%
Adj. Flow (vph)	7	716	563	160	205	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	723	723	0	205	13
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	687	540	154	197	12
Future Vol, veh/h	7	687	540	154	197	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	4	4	3	4	0
Mvmt Flow	7	716	563	160	205	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	723	0	-	0	1373	643
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	730	-
Critical Hdwy	4.1	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.2	-	-	-	3.536	3.3
Pot Cap-1 Maneuver	889	-	-	-	346	670
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	473	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	889	-	-	-	342	670
Mov Cap-2 Maneuver	-	-	-	-	342	-
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	473	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	29
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	889	-	-	-	342	670
HCM Lane V/C Ratio	0.008	-	-	-	0.6	0.019
HCM Control Delay (s)	9.1	0	-	-	30.1	10.5
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0	-	-	-	3.7	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	177	179	0	42	44
Future Volume (vph)	0	177	179	0	42	44
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.931	
Flt Protected					0.976	
Satd. Flow (prot)	0	2079	2039	0	1854	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	2079	2039	0	1854	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		108	163		164	
Travel Time (s)		2.9	4.4		4.5	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	1%	3%	0%	6%	0%
Adj. Flow (vph)	0	249	252	0	59	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	249	252	0	121	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	177	179	0	42	44
Future Vol, veh/h	0	177	179	0	42	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	0	1	3	0	6	0
Mvmt Flow	0	249	252	0	59	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	501	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	-	-	-	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	-	-	3.554	3.3
Pot Cap-1 Maneuver	0	-	-	0	523	792
Stage 1	0	-	-	0	781	-
Stage 2	0	-	-	0	783	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	523	792
Mov Cap-2 Maneuver	-	-	-	-	523	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	783	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

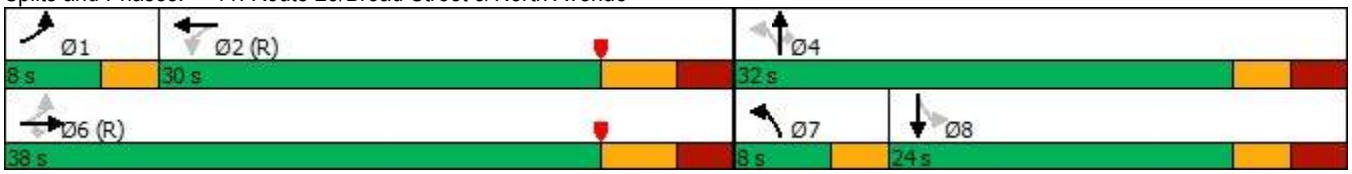
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	633
HCM Lane V/C Ratio	-	-	0.191
HCM Control Delay (s)	-	-	12
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	186	398	341	219	445	5	224	573	161	11	465	84
Future Volume (vph)	186	398	341	219	445	5	224	573	161	11	465	84
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.999				0.850		0.978	
Flt Protected	0.950				0.984		0.950				0.999	
Satd. Flow (prot)	1847	1509	1700	0	3761	0	1956	2039	1684	0	3727	0
Flt Permitted	0.256				0.710		0.241				0.834	
Satd. Flow (perm)	498	1509	1700	0	2713	0	496	2039	1684	0	3111	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			300		1						28	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		387			555			498			430	
Travel Time (s)		7.5			15.1			13.6			11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	6%	5%	5%	4%	0%	2%	3%	6%	0%	5%	3%
Adj. Flow (vph)	202	433	371	238	484	5	243	623	175	12	505	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	433	371	0	727	0	243	623	175	0	608	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	36.2	32.2	32.2		23.7		27.8	24.8	24.8		16.8	
Actuated g/C Ratio	0.52	0.46	0.46		0.34		0.40	0.35	0.35		0.24	
v/c Ratio	0.56	0.62	0.39		0.79		0.81	0.86	0.29		0.79	
Control Delay	16.6	19.8	4.4		31.2		38.6	34.9	17.4		32.1	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	16.6	19.8	4.4		31.2		38.6	34.9	17.4		32.1	
LOS	B	B	A		C		D	C	B		C	
Approach Delay		13.5			31.2			32.8			32.1	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 26.6		Intersection LOS: C	
Intersection Capacity Utilization 105.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	202	433	371	727	243	623	175	608
v/c Ratio	0.56	0.62	0.39	0.79	0.81	0.86	0.29	0.79
Control Delay	16.6	19.8	4.4	31.2	38.6	34.9	17.4	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	19.8	4.4	31.2	38.6	34.9	17.4	32.1
Queue Length 50th (ft)	46	139	17	172	68	237	52	120
Queue Length 95th (ft)	82	235	63	#250	#155	#409	96	176
Internal Link Dist (ft)		307		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	362	693	944	920	301	757	625	820
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.62	0.39	0.79	0.81	0.82	0.28	0.74

Intersection Summary

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

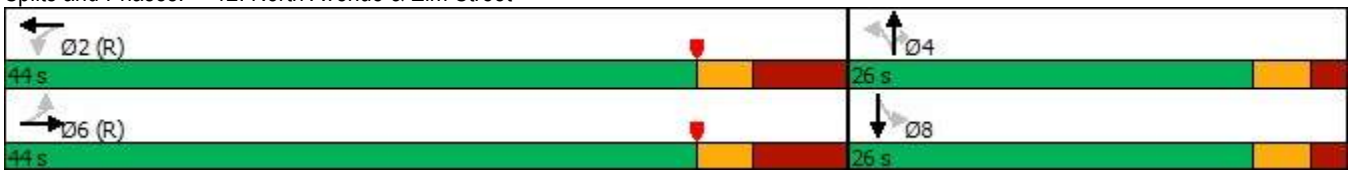
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	538	22	4	632	150	2	9	0	83	13	56
Future Volume (vph)	69	538	22	4	632	150	2	9	0	83	13	56
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.995			0.971						0.950	
Flt Protected		0.995						0.992			0.973	
Satd. Flow (prot)	0	3727	0	0	3718	0	0	1885	2000	0	1728	0
Flt Permitted		0.757			0.952			0.953			0.823	
Satd. Flow (perm)	0	2836	0	0	3539	0	0	1811	2000	0	1462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			61						43	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			460			167			176	
Travel Time (s)		4.4			12.5			3.8			4.0	
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 (%)	0%	7%	0%	0%	5%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	77	598	24	4	702	167	2	10	0	92	14	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	699	0	0	873	0	0	12	0	0	168	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	18.0	18.0		18.0	18.0		10.0	10.0	10.0	10.0	10.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Act Effct Green (s)		45.6			45.6			11.4			11.4	
Actuated g/C Ratio		0.65			0.65			0.16			0.16	
v/c Ratio		0.38			0.38			0.04			0.62	
Control Delay		9.6			7.1			22.2			29.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		9.6			7.1			22.2			29.1	
LOS		A			A			C			C	
Approach Delay		9.6			7.1			22.2			29.1	
Approach LOS		A			A			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 68.6%		ICU Level of Service C	
Analysis Period (min) 15			

* User Entered Value

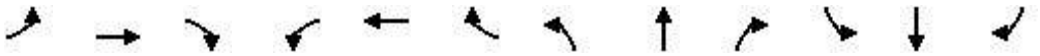
Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	699	873	12	168
v/c Ratio	0.38	0.38	0.04	0.62
Control Delay	9.6	7.1	22.2	29.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.6	7.1	22.2	29.1
Queue Length 50th (ft)	73	63	4	52
Queue Length 95th (ft)	164	m132	16	103
Internal Link Dist (ft)	83	380	87	96
Turn Bay Length (ft)				
Base Capacity (vph)	1851	2328	543	468
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	0.38	0.02	0.36

Intersection Summary

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

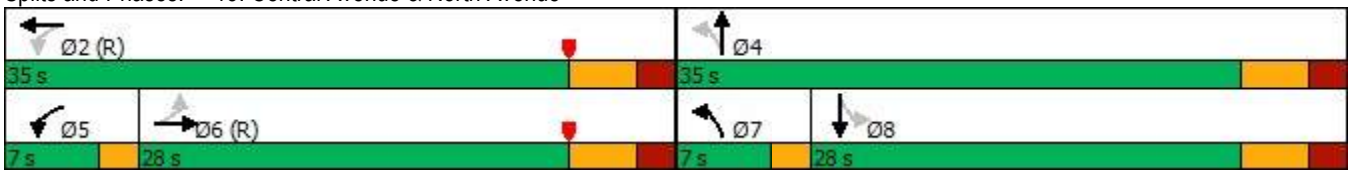


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	437	106	153	522	27	218	595	125	15	452	10
Future Volume (vph)	17	437	106	153	522	27	218	595	125	15	452	10
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.972			0.994			0.980			0.997	
Flt Protected		0.998			0.989			0.989			0.998	
Satd. Flow (prot)	0	3686	0	0	3736	0	0	3683	0	0	3781	0
Flt Permitted		0.919			0.632			0.662			0.905	
Satd. Flow (perm)	0	3394	0	0	2387	0	0	2465	0	0	3429	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					7			30				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		221			706			792			210	
Travel Time (s)		6.0			13.8			21.6			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	18	460	112	161	549	28	229	626	132	16	476	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	590	0	0	738	0	0	987	0	0	503	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		4.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		22.6			29.8			29.0			22.0	
Actuated g/C Ratio		0.32			0.43			0.41			0.31	
v/c Ratio		0.54			0.70			0.93			0.47	
Control Delay		16.5			20.6			35.0			20.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		16.5			20.6			35.0			20.9	
LOS		B			C			C			C	
Approach Delay		16.5			20.6			35.0			20.9	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 24.8		Intersection LOS: C	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			

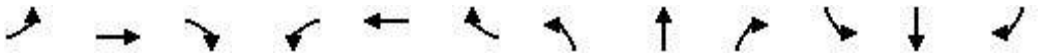
Splits and Phases: 13: Central Avenue & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	590	738	987	503
v/c Ratio	0.54	0.70	0.93	0.47
Control Delay	16.5	20.6	35.0	20.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	20.6	35.0	20.9
Queue Length 50th (ft)	112	115	164	89
Queue Length 95th (ft)	65	160	#280	131
Internal Link Dist (ft)	141	626	712	130
Turn Bay Length (ft)				
Base Capacity (vph)	1098	1048	1077	1097
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	0.54	0.70	0.92	0.46

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	532	0	0	546	36	5	41	10	0	0	121
Future Volume (vph)	61	532	0	0	546	36	5	41	10	0	0	121
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992			0.975			0.865	
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1900	2000	0	0	1984	0	0	1942	0	0	1730	0
Flt Permitted	0.950							0.996				
Satd. Flow (perm)	1900	2000	0	0	1984	0	0	1942	0	0	1730	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	64	560	0	0	575	38	5	43	11	0	0	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	560	0	0	613	0	0	59	0	0	127	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	532	0	0	546	36	5	41	10	0	0	121
Future Vol, veh/h	61	532	0	0	546	36	5	41	10	0	0	121
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	64	560	0	0	575	38	5	43	11	0	0	127

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	613	0	-	-	-	0	1346	1301	560	1309	1282	594
Stage 1	-	-	-	-	-	-	688	688	-	594	594	-
Stage 2	-	-	-	-	-	-	658	613	-	715	688	-
Critical Hdwy	4.15	-	-	-	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	-	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	952	-	0	0	-	-	127	159	522	134	163	499
Stage 1	-	-	0	0	-	-	432	442	-	486	488	-
Stage 2	-	-	0	0	-	-	448	479	-	417	442	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	952	-	-	-	-	-	90	148	522	97	152	499
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	148	-	97	152	-
Stage 1	-	-	-	-	-	-	403	412	-	453	488	-
Stage 2	-	-	-	-	-	-	334	479	-	341	412	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	40.4	14.7
HCM LOS			E	B

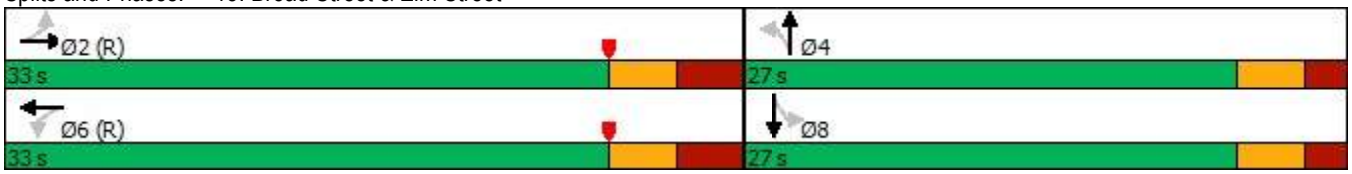
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	159	952	-	-	-	499
HCM Lane V/C Ratio	0.371	0.067	-	-	-	0.255
HCM Control Delay (s)	40.4	9.1	-	-	-	14.7
HCM Lane LOS	E	A	-	-	-	B
HCM 95th %tile Q(veh)	1.6	0.2	-	-	-	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	497	24	49	508	81	11	27	25	81	64	68
Future Volume (vph)	22	497	24	49	508	81	11	27	25	81	64	68
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.979			0.928			0.922	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1900	1986	0	1900	1958	0	1900	1856	0	1900	1844	0
Flt Permitted	0.389			0.434			0.668			0.722		
Satd. Flow (perm)	778	1986	0	868	1958	0	1336	1856	0	1444	1844	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			17			26			72	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	23	523	25	52	535	85	12	28	26	85	67	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	548	0	52	620	0	12	54	0	85	139	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	43.3	43.3		43.3	43.3		9.3	9.3		9.3	9.3	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.16	0.16		0.16	0.16	
v/c Ratio	0.04	0.38		0.08	0.44		0.06	0.18		0.38	0.40	
Control Delay	4.6	5.7		4.0	6.5		20.7	14.5		27.1	15.4	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	4.6	5.8		4.0	6.8		20.7	14.5		27.1	15.4	
LOS	A	A		A	A		C	B		C	B	
Approach Delay		5.7			6.6			15.7			19.9	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	548	52	620	12	54	85	139
v/c Ratio	0.04	0.38	0.08	0.44	0.06	0.18	0.38	0.40
Control Delay	4.6	5.7	4.0	6.5	20.7	14.5	27.1	15.4
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	4.6	5.8	4.0	6.8	20.7	14.5	27.1	15.4
Queue Length 50th (ft)	2	72	3	137	4	9	28	22
Queue Length 95th (ft)	10	150	19	227	15	33	60	60
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	561	1435	627	1419	489	697	529	721
Starvation Cap Reductn	0	0	0	282	0	0	0	0
Spillback Cap Reductn	0	66	0	0	0	9	6	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.40	0.08	0.55	0.02	0.08	0.16	0.19

Intersection Summary

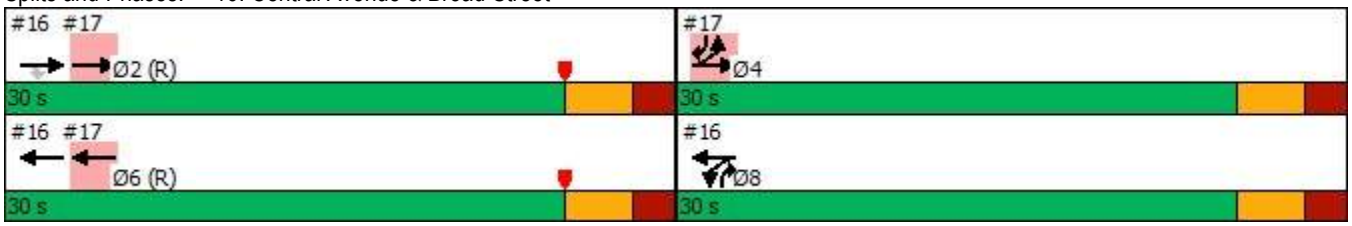


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	542	56	381	593	0	544		
Future Volume (vph)	542	56	381	593	0	544		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2000	1700	1900	2000	0	1730		
Flt Permitted			0.950					
Satd. Flow (perm)	2000	1700	1900	2000	0	1730		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		59				181		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	728			
Travel Time (s)	8.7			2.8	19.9			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%		
Adj. Flow (vph)	571	59	401	624	0	573		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	571	59	401	624	0	573		
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0			5.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	24.0	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	25.3	25.3	24.7	60.0		24.7		
Actuated g/C Ratio	0.42	0.42	0.41	1.00		0.41		
v/c Ratio	0.68	0.08	0.51	0.31		0.70		
Control Delay	23.4	8.2	19.9	0.6		15.1		
Queue Delay	19.7	0.0	7.3	0.0		0.7		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	43.1	8.2	27.2	0.6		15.8		
LOS	D	A	C	A		B		
Approach Delay	39.8			11.0	15.8			
Approach LOS	D			B	B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 25 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 20.4		Intersection LOS: C	
Intersection Capacity Utilization 64.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	571	59	401	624	573
v/c Ratio	0.68	0.08	0.51	0.31	0.70
Control Delay	23.4	8.2	19.9	0.6	15.1
Queue Delay	19.7	0.0	7.3	0.0	0.7
Total Delay	43.1	8.2	27.2	0.6	15.8
Queue Length 50th (ft)	198	1	127	1	107
Queue Length 95th (ft)	275	29	217	7	212
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	844	751	791	1978	826
Starvation Cap Reductn	153	0	338	0	0
Spillback Cap Reductn	274	0	0	85	65
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.00	0.08	0.89	0.33	0.75

Intersection Summary



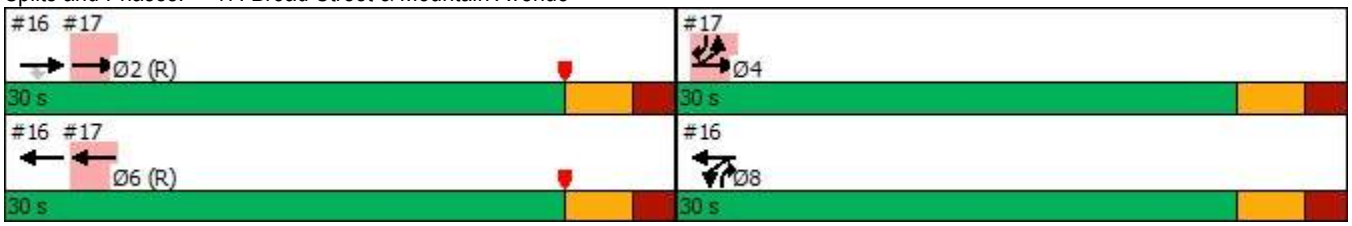
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	655	399	542	21	0	431		
Future Volume (vph)	655	399	542	21	0	431		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.994			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1900	2000	3777	0	0	2992		
Flt Permitted	0.950							
Satd. Flow (perm)	1900	2000	3777	0	0	2992		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			8			318		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	392		630			
Travel Time (s)		2.5	10.7		17.2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%		
Adj. Flow (vph)	689	420	571	22	0	454		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	689	420	593	0	0	454		
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	5.0
Minimum Split (s)	24.0		30.0			24.0	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.0		25.0			25.0	25.0	25.0
Yellow Time (s)	3.0		3.0			3.0	3.0	3.0
All-Red Time (s)	2.0		2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	5.0		5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	24.7	60.0	25.3			24.7		
Actuated g/C Ratio	0.41	1.00	0.42			0.41		
v/c Ratio	0.88	0.21	0.37			0.32		
Control Delay	29.3	0.2	12.7			4.4		
Queue Delay	49.8	0.0	1.4			0.1		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	79.2	0.2	14.1			4.4		
LOS	E	A	B			A		
Approach Delay		49.3	14.1		4.4			
Approach LOS		D	B		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 25 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 30.2		Intersection LOS: C	
Intersection Capacity Utilization 55.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue

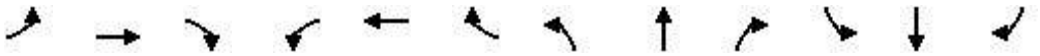




Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	689	420	593	454
v/c Ratio	0.88	0.21	0.37	0.32
Control Delay	29.3	0.2	12.7	4.4
Queue Delay	49.8	0.0	1.4	0.1
Total Delay	79.2	0.2	14.1	4.4
Queue Length 50th (ft)	224	0	73	16
Queue Length 95th (ft)	#411	m0	108	43
Internal Link Dist (ft)		13	312	
Turn Bay Length (ft)				150
Base Capacity (vph)	791	1978	1599	1432
Starvation Cap Reductn	251	0	0	0
Spillback Cap Reductn	0	0	772	202
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.28	0.21	0.72	0.37

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	700	4	13	709	0	2	0	8	0	0	0
Future Volume (vph)	0	700	4	13	709	0	2	0	8	0	0	0
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
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		0.999						0.892				
Flt Protected					0.999			0.990				
Satd. Flow (prot)	0	1998	0	0	1998	0	0	1766	0	0	2059	0
Flt Permitted					0.999			0.990				
Satd. Flow (perm)	0	1998	0	0	1998	0	0	1766	0	0	2059	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		464			455			250			238	
Travel Time (s)		9.0			8.9			6.8			6.5	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	5%	5%	5%	2%	5%	2%	5%	2%	2%	2%
Adj. Flow (vph)	0	737	4	14	746	0	2	0	8	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	741	0	0	760	0	0	10	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	700	4	13	709	0	2	0	8	0	0	0
Future Vol, veh/h	0	700	4	13	709	0	2	0	8	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	5	5	5	2	5	2	5	2	2	2
Mvmt Flow	0	737	4	14	746	0	2	0	8	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	746	0	0	741	0	0	1513	1513	739	1517	1515	746
Stage 1	-	-	-	-	-	-	739	739	-	774	774	-
Stage 2	-	-	-	-	-	-	774	774	-	743	741	-
Critical Hdwy	4.12	-	-	4.15	-	-	7.15	6.52	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.245	-	-	3.545	4.018	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	862	-	-	852	-	-	97	120	412	98	119	413
Stage 1	-	-	-	-	-	-	404	424	-	391	408	-
Stage 2	-	-	-	-	-	-	387	408	-	407	423	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	862	-	-	852	-	-	95	117	412	94	116	413
Mov Cap-2 Maneuver	-	-	-	-	-	-	95	117	-	94	116	-
Stage 1	-	-	-	-	-	-	404	424	-	391	397	-
Stage 2	-	-	-	-	-	-	376	397	-	399	423	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	20.2	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	247	862	-	-	852	-	-	-
HCM Lane V/C Ratio	0.043	-	-	-	0.016	-	-	-
HCM Control Delay (s)	20.2	0	-	-	9.3	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	702	6	15	719	3	9
Future Volume (vph)	702	6	15	719	3	9
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.899	
Flt Protected				0.999	0.988	
Satd. Flow (prot)	1998	0	0	1998	1776	0
Flt Permitted				0.999	0.988	
Satd. Flow (perm)	1998	0	0	1998	1776	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	455			178	232	
Travel Time (s)	8.9			3.5	5.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	739	6	16	757	3	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	745	0	0	773	12	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	702	6	15	719	3	9
Future Vol, veh/h	702	6	15	719	3	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	739	6	16	757	3	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	745	0	1531	742
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	789	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	849	-	127	411
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	442	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	849	-	123	411
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	427	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	259	-	-	849	-
HCM Lane V/C Ratio	0.049	-	-	0.019	-
HCM Control Delay (s)	19.6	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Kimley»Horn

DRAFT

2027 No-Build PM Peak

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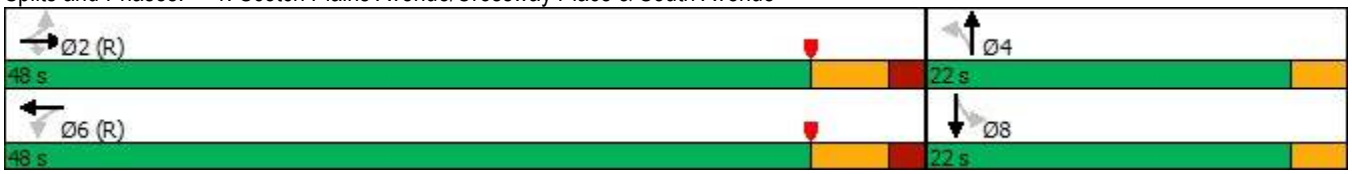
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	282	56	15	267	92	36	210	10	51	229	142
Future Volume (vph)	81	282	56	15	267	92	36	210	10	51	229	142
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.967			0.993			0.943	
Flt Protected		0.989			0.998		0.950			0.950		
Satd. Flow (prot)	0	2036	1750	0	1987	0	1956	2044	0	1956	1941	0
Flt Permitted		0.841			0.981		0.240			0.434		
Satd. Flow (perm)	0	1731	1750	0	1953	0	494	2044	0	894	1941	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			59		42			4			44	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	85	297	59	16	281	97	38	221	11	54	241	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	382	59	0	394	0	38	232	0	54	390	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		44.3	44.3		44.3		16.7	16.7		16.7	16.7	
Actuated g/C Ratio		0.63	0.63		0.63		0.24	0.24		0.24	0.24	
v/c Ratio		0.35	0.05		0.31		0.32	0.47		0.25	0.79	
Control Delay		11.5	4.6		6.5		29.1	25.3		23.8	34.1	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.5	4.6		6.5		29.1	25.3		23.8	34.1	
LOS		B	A		A		C	C		C	C	
Approach Delay		10.6			6.5			25.8			32.8	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 18.6		Intersection LOS: B	
Intersection Capacity Utilization 77.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	382	59	394	38	232	54	390
v/c Ratio	0.35	0.05	0.31	0.32	0.47	0.25	0.79
Control Delay	11.5	4.6	6.5	29.1	25.3	23.8	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	4.6	6.5	29.1	25.3	23.8	34.1
Queue Length 50th (ft)	122	5	65	13	81	18	134
Queue Length 95th (ft)	201	m15	110	39	140	46	#226
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	1096	1129	1251	134	557	242	558
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.05	0.31	0.28	0.42	0.22	0.70

Intersection Summary

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



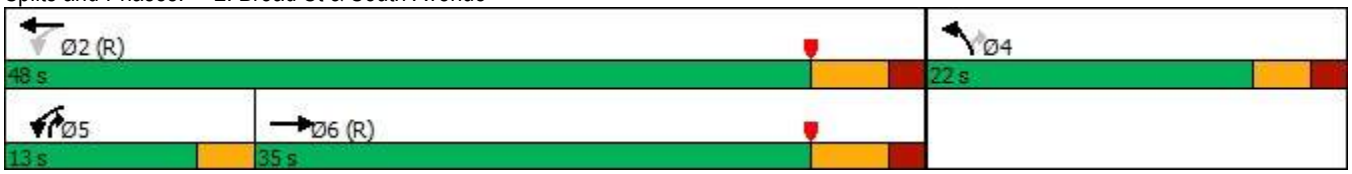
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	277	112	695	433	195	413
Future Volume (vph)	277	112	695	433	195	413
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.961					0.850
Flt Protected				0.970	0.950	
Satd. Flow (prot)	1979	0	0	3794	1956	1750
Flt Permitted				0.585	0.950	
Satd. Flow (perm)	1979	0	0	2288	1956	1750
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	292	118	732	456	205	435
Shared Lane Traffic (%)						
Lane Group Flow (vph)	410	0	0	1188	205	435
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	9.0		10.0	9.0	7.0	10.0
Minimum Split (s)	35.0		13.0	35.0	22.0	13.0
Total Split (s)	35.0		13.0	48.0	22.0	13.0
Total Split (%)	50.0%		18.6%	68.6%	31.4%	18.6%
Maximum Green (s)	29.0		10.0	42.0	17.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	9.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	34.2			47.4	11.6	26.8
Actuated g/C Ratio	0.49			0.68	0.17	0.38
v/c Ratio	0.42			1.06dl	0.63	0.65
Control Delay	14.2			9.1	35.5	22.3
Queue Delay	0.0			0.0	0.0	0.0

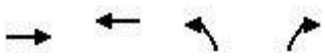
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	14.2			9.1	35.5	22.3
LOS	B			A	D	C
Approach Delay	14.2			9.1	26.5	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 78.1%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Broad St & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	410	1188	205	435
v/c Ratio	0.42	1.06dl	0.63	0.65
Control Delay	14.2	9.1	35.5	22.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.2	9.1	35.5	22.3
Queue Length 50th (ft)	107	105	83	150
Queue Length 95th (ft)	201	179	135	210
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	966	1701	475	670
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	0.70	0.43	0.65

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

MOVEMENT SUMMARY

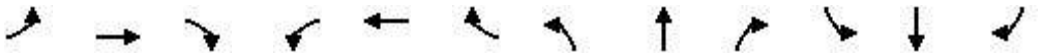
Site: 101 [Westfield RAB_Existing_PM (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	14	0.0	15	0.0	0.537	11.9	LOS B	4.0	101.0	0.72	0.85	1.08	23.0
6	T1	418	2.0	427	2.0	0.537	12.0	LOS B	4.0	101.0	0.72	0.85	1.08	21.3
16	R2	338	3.0	345	3.0	0.537	9.6	LOS A	4.0	101.0	0.65	0.70	0.79	22.4
Approach		770	2.4	786	2.4	0.537	10.9	LOS B	4.0	101.0	0.69	0.78	0.95	21.8
North: SB - SR 28														
7	L2	483	2.0	493	2.0	0.519	10.4	LOS B	3.8	96.1	0.64	0.72	0.89	21.2
14	R2	561	2.0	572	2.0	0.603	12.4	LOS B	5.7	144.4	0.70	0.85	1.13	17.6
Approach		1044	2.0	1065	2.0	0.603	11.5	LOS B	5.7	144.4	0.68	0.79	1.02	19.5
West: EB - South Ave														
5u	U	2	0.0	2	0.0	0.990	48.6	LOS E	35.3	893.4	1.00	2.17	4.13	8.2
5	L2	558	1.0	569	1.0	0.990	48.7	LOS E	35.3	893.4	1.00	2.17	4.13	8.3
2	T1	405	3.0	413	3.0	0.990	39.6	LOS E	35.3	893.4	0.89	1.80	3.36	12.3
Approach		965	1.8	985	1.8	0.990	44.8	LOS E	35.3	893.4	0.95	2.01	3.81	9.8
All Vehicles		2779	2.1	2836	2.1	0.990	22.9	LOS C	35.3	893.4	0.77	1.21	1.97	14.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

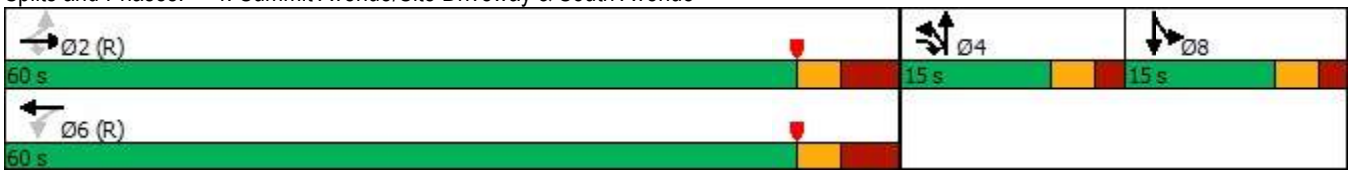


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	617	53	28	602	48	101	21	43	76	21	63
Future Volume (vph)	21	617	53	28	602	48	101	21	43	76	21	63
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	0		70	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.989			0.899			0.887	
Flt Protected		0.998			0.998		0.950			0.950		
Satd. Flow (prot)	0	2053	1785	0	3869	0	1956	1888	0	1995	1835	0
Flt Permitted		0.966			0.909		0.950			0.950		
Satd. Flow (perm)	0	1987	1785	0	3524	0	1956	1888	0	1995	1835	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55		15			45			66	
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		511			156			500			138	
Travel Time (s)		13.9			3.5			13.6			3.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	2%	0%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Adj. Flow (vph)	22	643	55	29	627	50	105	22	45	79	22	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	665	55	0	706	0	105	67	0	79	88	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		61.4	74.7		61.4		9.1	9.1		8.7	8.7	
Actuated g/C Ratio		0.68	0.83		0.68		0.10	0.10		0.10	0.10	
v/c Ratio		0.49	0.04		0.29		0.53	0.29		0.41	0.37	
Control Delay		11.2	0.7		8.1		48.3	20.7		44.5	19.1	
Queue Delay		0.2	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.4	0.7		8.1		48.3	20.7		44.5	19.1	
LOS		B	A		A		D	C		D	B	
Approach Delay		10.6			8.1			37.6			31.1	
Approach LOS		B			A			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	665	55	706	105	67	79	88
v/c Ratio	0.49	0.04	0.29	0.53	0.29	0.41	0.37
Control Delay	11.2	0.7	8.1	48.3	20.7	44.5	19.1
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	0.7	8.1	48.3	20.7	44.5	19.1
Queue Length 50th (ft)	208	0	94	57	11	43	12
Queue Length 95th (ft)	314	6	131	109	50	86	55
Internal Link Dist (ft)	431		76		420		58
Turn Bay Length (ft)							
Base Capacity (vph)	1355	1496	2408	217	249	221	262
Starvation Cap Reductn	169	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.04	0.29	0.48	0.27	0.36	0.34

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	642	47	29	560	35	89
Future Volume (vph)	642	47	29	560	35	89
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.991				0.903	
Flt Protected				0.998	0.986	
Satd. Flow (prot)	2043	0	0	3902	1856	0
Flt Permitted				0.998	0.986	
Satd. Flow (perm)	2043	0	0	3902	1856	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	339			279	211	
Travel Time (s)	7.7			6.3	4.8	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	3%	2%	0%	1%
Adj. Flow (vph)	648	47	29	566	35	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	695	0	0	595	125	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	642	47	29	560	35	89
Future Vol, veh/h	642	47	29	560	35	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	0	3	2	0	1
Mvmt Flow	648	47	29	566	35	90

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	695	0	1013	672
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	341	-
Critical Hdwy	-	-	4.145	-	6.6	6.215
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2285	-	3.5	3.3095
Pot Cap-1 Maneuver	-	-	893	-	252	457
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	698	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	893	-	240	457
Mov Cap-2 Maneuver	-	-	-	-	240	-
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	665	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	364	-	-	893	-
HCM Lane V/C Ratio	0.344	-	-	0.033	-
HCM Control Delay (s)	20	-	-	9.2	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	723	560	14	18	28
Future Volume (vph)	5	723	560	14	18	28
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.996		0.918	
Flt Protected					0.981	
Satd. Flow (prot)	0	2059	3898	0	1891	0
Flt Permitted					0.981	
Satd. Flow (perm)	0	2059	3898	0	1891	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		279	494		163	
Travel Time (s)		6.3	11.2		4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	5	745	577	14	19	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	750	591	0	48	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	723	560	14	18	28
Future Vol, veh/h	5	723	560	14	18	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	5	745	577	14	19	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	591	0	-	0	1339	296
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	755	-
Critical Hdwy	4.1	-	-	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	995	-	-	-	158	706
Stage 1	-	-	-	-	526	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	995	-	-	-	157	706
Mov Cap-2 Maneuver	-	-	-	-	157	-
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	19.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	995	-	-	-	298
HCM Lane V/C Ratio	0.005	-	-	-	0.159
HCM Control Delay (s)	8.6	0	-	-	19.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	172	475	209	5	51	30	425	190	5	181	575	32
Future Volume (vph)	172	475	209	5	51	30	425	190	5	181	575	32
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.953						0.850			0.992	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1956	3728	0	0	0	1956	2059	1750	0	1956	2042	0
Flt Permitted	0.270					0.277				0.128		
Satd. Flow (perm)	556	3728	0	0	0	570	2059	1750	0	264	2042	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		1						139			3	
Link Speed (mph)		30					30				25	
Link Distance (ft)		494					926				398	
Travel Time (s)		11.2					21.0				10.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	181	500	220	5	54	32	447	200	5	191	605	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	725	0	0	0	86	447	200	0	196	639	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	39.1	30.2				38.4	28.3	28.3		41.4	31.3	
Actuated g/C Ratio	0.43	0.33				0.42	0.31	0.31		0.45	0.34	
v/c Ratio	0.58	0.59				0.27	0.70	0.31		0.93	0.92	
Control Delay	25.1	28.9				17.3	35.3	10.0		66.8	48.8	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

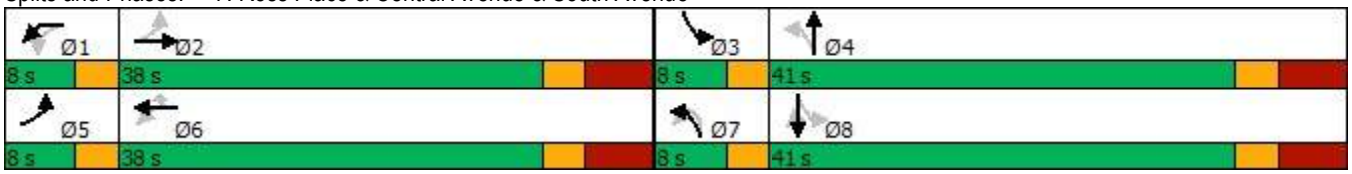


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	173	616	85	168
Future Volume (vph)	173	616	85	168
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1956	2059	1750	0
Flt Permitted	0.128			
Satd. Flow (perm)	264	2059	1750	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		809		
Travel Time (s)		22.1		
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%
Adj. Flow (vph)	182	648	89	177
Shared Lane Traffic (%)				
Lane Group Flow (vph)	182	648	266	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	41.4	31.3	31.3	
Actuated g/C Ratio	0.45	0.34	0.34	
v/c Ratio	0.86	0.92	0.39	
Control Delay	54.1	50.0	13.8	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	25.1	28.9				17.3	35.3	10.0		66.8	48.8	
LOS	C	C				B	D	A		E	D	
Approach Delay		28.1					26.3				53.0	
Approach LOS		C					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 91.8			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 37.8		Intersection LOS: D	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	54.1	50.0	13.8	
LOS	D	D	B	
Approach Delay		41.9		
Approach LOS		D		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	181	725	86	447	200	196	639	182	648	266
v/c Ratio	0.58	0.59	0.27	0.70	0.31	0.93	0.92	0.86	0.92	0.39
Control Delay	25.1	28.9	17.3	35.3	10.0	66.8	48.8	54.1	50.0	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	28.9	17.3	35.3	10.0	66.8	48.8	54.1	50.0	13.8
Queue Length 50th (ft)	64	193	29	234	26	65	360	60	368	59
Queue Length 95th (ft)	107	254	56	343	78	#173	#571	#154	#578	124
Internal Link Dist (ft)		414		846			318		729	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	312	1225	313	676	668	211	740	211	744	713
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	0.58	0.59	0.27	0.66	0.30	0.93	0.86	0.86	0.87	0.37

Intersection Summary

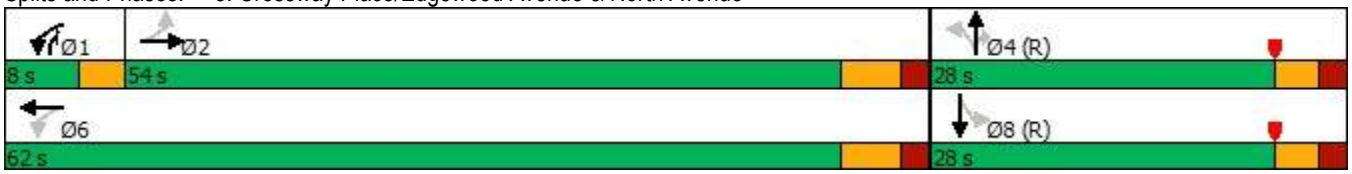
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

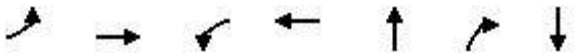
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	587	41	356	660	5	92	61	225	10	36	15
Future Volume (vph)	5	587	41	356	660	5	92	61	225	10	36	15
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.999				0.850		0.967	
Flt Protected	0.950			0.950				0.971			0.992	
Satd. Flow (prot)	1956	2038	0	1956	2057	0	0	1999	1750	0	1975	0
Flt Permitted	0.335			0.240				0.786			0.948	
Satd. Flow (perm)	690	2038	0	494	2057	0	0	1618	1750	0	1887	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			1				237		16	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	5	618	43	375	695	5	97	64	237	11	38	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	661	0	375	700	0	0	161	237	0	65	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	54.0	54.0		8.0	62.0		28.0	28.0	8.0	28.0	28.0	
Total Split (%)	60.0%	60.0%		8.9%	68.9%		31.1%	31.1%	8.9%	31.1%	31.1%	
Maximum Green (s)	48.0	48.0		5.0	56.0		23.0	23.0	5.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		59.0	56.0			23.0	33.0		23.0	
Actuated g/C Ratio	0.53	0.53		0.66	0.62			0.26	0.37		0.26	
v/c Ratio	0.01	0.61		0.93	0.55			0.39	0.30		0.13	
Control Delay	10.2	17.3		42.4	11.7			31.1	3.8		21.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.2	17.3		42.4	11.7			31.1	3.8		21.5	
LOS	B	B		D	B			C	A		C	
Approach Delay		17.3			22.4			14.9			21.5	
Approach LOS		B			C			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 19.5		Intersection LOS: B	
Intersection Capacity Utilization 74.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	661	375	700	161	237	65
v/c Ratio	0.01	0.61	0.93	0.55	0.39	0.30	0.13
Control Delay	10.2	17.3	42.4	11.7	31.1	3.8	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	17.3	42.4	11.7	31.1	3.8	21.5
Queue Length 50th (ft)	1	242	81	206	76	0	21
Queue Length 95th (ft)	7	351	#200	298	134	46	53
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	368	1089	405	1280	413	791	494
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.61	0.93	0.55	0.39	0.30	0.13

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	544	663	148	230	36
Future Volume (vph)	5	544	663	148	230	36
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.975			0.850
Flt Protected					0.950	
Satd. Flow (prot)	0	2059	2007	0	1956	1750
Flt Permitted					0.950	
Satd. Flow (perm)	0	2059	2007	0	1956	1750
Link Speed (mph)		35	35		25	
Link Distance (ft)		175	395		156	
Travel Time (s)		3.4	7.7		4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	591	721	161	250	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	596	882	0	250	39
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	544	663	148	230	36
Future Vol, veh/h	5	544	663	148	230	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	591	721	161	250	39

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	882	0	-	0	1403	802
Stage 1	-	-	-	-	802	-
Stage 2	-	-	-	-	601	-
Critical Hdwy	4.12	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	767	-	-	-	338	589
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	767	-	-	-	335	589
Mov Cap-2 Maneuver	-	-	-	-	335	-
Stage 1	-	-	-	-	437	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	37.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	767	-	-	-	335	589
HCM Lane V/C Ratio	0.007	-	-	-	0.746	0.066
HCM Control Delay (s)	9.7	0	-	-	41.5	11.5
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q(veh)	0	-	-	-	5.7	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	191	200	0	52	39
Future Volume (vph)	0	191	200	0	52	39
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.942	
Flt Protected					0.972	
Satd. Flow (prot)	0	2079	2059	0	1923	0
Flt Permitted					0.972	
Satd. Flow (perm)	0	2079	2059	0	1923	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		92	156		170	
Travel Time (s)		2.5	4.3		4.6	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	0	227	238	0	62	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	227	238	0	108	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	191	200	0	52	39
Future Vol, veh/h	0	191	200	0	52	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	227	238	0	62	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	465	238
Stage 1	-	-	-	-	238	-
Stage 2	-	-	-	-	227	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	559	806
Stage 1	0	-	-	0	806	-
Stage 2	0	-	-	0	815	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	559	806
Mov Cap-2 Maneuver	-	-	-	-	559	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	815	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

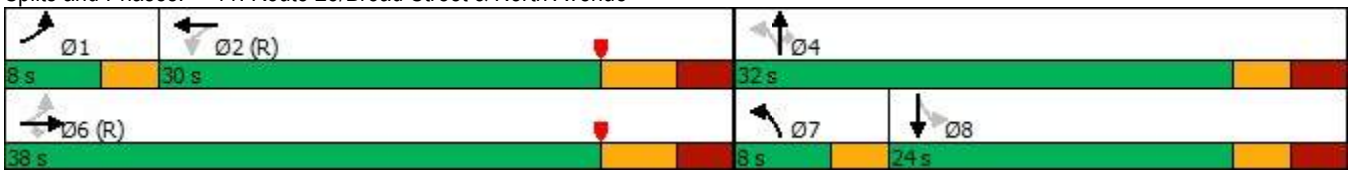
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	644
HCM Lane V/C Ratio	-	-	0.168
HCM Control Delay (s)	-	-	11.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	374	380	228	523	6	265	492	162	33	435	135
Future Volume (vph)	153	374	380	228	523	6	265	492	162	33	435	135
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.999				0.850		0.966	
Flt Protected	0.950				0.985		0.950				0.997	
Satd. Flow (prot)	1956	1538	1750	0	3813	0	1956	2059	1785	0	3720	0
Flt Permitted	0.223				0.732		0.223				0.856	
Satd. Flow (perm)	459	1538	1750	0	2833	0	459	2059	1785	0	3194	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			320		1						51	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		395			555			498			430	
Travel Time (s)		7.7			15.1			13.6			11.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	3%	3%	0%	2%	2%	0%	0%	3%	5%
Adj. Flow (vph)	159	390	396	238	545	6	276	513	169	34	453	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	390	396	0	789	0	276	513	169	0	628	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	36.4	32.4	32.4		23.9		27.6	24.6	24.6		16.6	
Actuated g/C Ratio	0.52	0.46	0.46		0.34		0.39	0.35	0.35		0.24	
v/c Ratio	0.44	0.55	0.40		0.82		0.96	0.71	0.27		0.79	
Control Delay	13.5	17.7	4.3		27.3		65.1	25.7	17.1		30.8	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	13.5	17.7	4.3		27.3		65.1	25.7	17.1		30.8	
LOS	B	B	A		C		E	C	B		C	
Approach Delay		11.4			27.3			35.5			30.8	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 25.8		Intersection LOS: C	
Intersection Capacity Utilization 103.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	159	390	396	789	276	513	169	628
v/c Ratio	0.44	0.55	0.40	0.82	0.96	0.71	0.27	0.79
Control Delay	13.5	17.7	4.3	27.3	65.1	25.7	17.1	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	17.7	4.3	27.3	65.1	25.7	17.1	30.8
Queue Length 50th (ft)	35	120	18	190	78	180	49	119
Queue Length 95th (ft)	65	202	66	#275	#200	281	92	175
Internal Link Dist (ft)		315		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	358	712	982	966	287	764	663	859
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.55	0.40	0.82	0.96	0.67	0.25	0.73

Intersection Summary

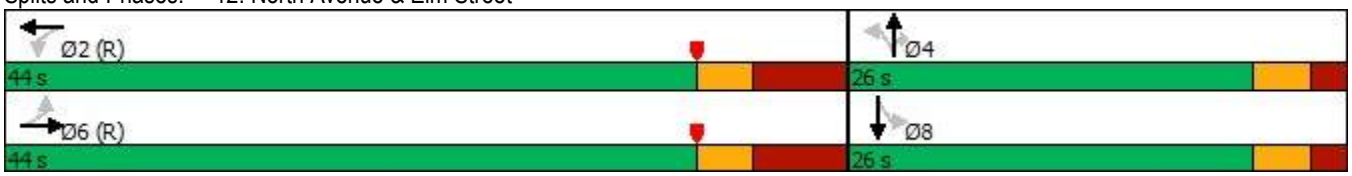
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	480	21	21	727	163	16	16	9	105	19	174
Future Volume (vph)	66	480	21	21	727	163	16	16	9	105	19	174
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.994			0.973				0.850		0.921	
Flt Protected		0.994			0.999			0.976			0.983	
Satd. Flow (prot)	0	3845	0	0	3788	0	0	1854	1700	0	1691	0
Flt Permitted		0.726			0.931			0.822			0.871	
Satd. Flow (perm)	0	2808	0	0	3530	0	0	1562	1700	0	1498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			55				78		103	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			479			193			176	
Travel Time (s)		4.4			13.1			4.4			4.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	69	500	22	22	757	170	17	17	9	109	20	181
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	591	0	0	949	0	0	34	9	0	310	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		26.0	26.0	26.0	26.0	26.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	160	160		160	160		160	160	160	160	160	
Act Effct Green (s)		36.0			36.0			21.0	21.0		21.0	
Actuated g/C Ratio		0.51			0.51			0.30	0.30		0.30	
v/c Ratio		0.41			0.52			0.07	0.02		0.60	
Control Delay		12.7			14.0			18.2	0.0		19.2	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		12.7			14.0			18.2	0.0		19.2	
LOS		B			B			B	A		B	
Approach Delay		12.7			14.0			14.4			19.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 78.6%		ICU Level of Service D	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	591	949	34	9	310
v/c Ratio	0.41	0.52	0.07	0.02	0.60
Control Delay	12.7	14.0	18.2	0.0	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	14.0	18.2	0.0	19.2
Queue Length 50th (ft)	85	131	10	0	76
Queue Length 95th (ft)	139	m132	31	0	158
Internal Link Dist (ft)	83	399	113		96
Turn Bay Length (ft)					
Base Capacity (vph)	1448	1842	468	564	521
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	0.41	0.52	0.07	0.02	0.60

Intersection Summary

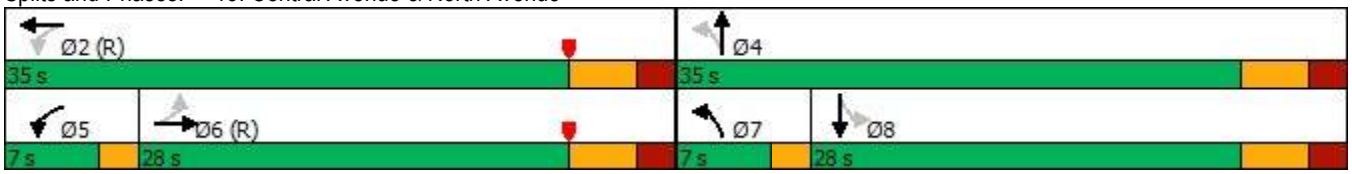
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	482	158	214	672	62	200	534	200	57	666	16
Future Volume (vph)	32	482	158	214	672	62	200	534	200	57	666	16
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.965			0.990			0.968			0.997	
Flt Protected		0.998			0.989			0.989			0.996	
Satd. Flow (prot)	0	3767	0	0	3830	0	0	3745	0	0	3884	0
Flt Permitted		0.859			0.580			0.559			0.770	
Satd. Flow (perm)	0	3243	0	0	2246	0	0	2117	0	0	3003	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					13			61				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		203			706			809			223	
Travel Time (s)		5.5			13.8			22.1			6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	34	507	166	225	707	65	211	562	211	60	701	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	707	0	0	997	0	0	984	0	0	778	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		22.4			29.4			29.4			22.4	
Actuated g/C Ratio		0.32			0.42			0.42			0.32	
v/c Ratio		0.68			1.02			1.03			0.81	
Control Delay		18.5			54.7			57.8			30.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.5			54.7			57.8			30.2	
LOS		B			D			E			C	
Approach Delay		18.5			54.7			57.8			30.2	
Approach LOS		B			D			E			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 42.7		Intersection LOS: D	
Intersection Capacity Utilization 103.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 13: Central Avenue & North Avenue

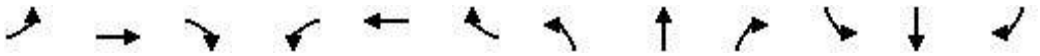


Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	707	997	984	778
v/c Ratio	0.68	1.02	1.03	0.81
Control Delay	18.5	54.7	57.8	30.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.5	54.7	57.8	30.2
Queue Length 50th (ft)	85	~172	~165	159
Queue Length 95th (ft)	99	#321	#314	#248
Internal Link Dist (ft)	123	626	729	143
Turn Bay Length (ft)				
Base Capacity (vph)	1037	982	957	960
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	0.68	1.02	1.03	0.81

Intersection Summary

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	634	0	0	513	55	26	42	15	0	0	113
Future Volume (vph)	125	634	0	0	513	55	26	42	15	0	0	113
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.987			0.975			0.865	
Flt Protected	0.950							0.985				
Satd. Flow (prot)	1956	2059	0	0	2032	0	0	1977	0	0	1781	0
Flt Permitted	0.950							0.985				
Satd. Flow (perm)	1956	2059	0	0	2032	0	0	1977	0	0	1781	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	132	667	0	0	540	58	27	44	16	0	0	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	667	0	0	598	0	0	87	0	0	119	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.5%		ICU Level of Service A	
Analysis Period (min) 15			

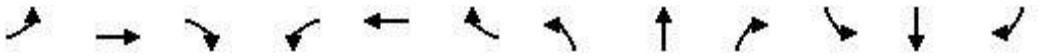
Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	125	634	0	0	513	55	26	42	15	0	0	113
Future Vol, veh/h	125	634	0	0	513	55	26	42	15	0	0	113
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	132	667	0	0	540	58	27	44	16	0	0	119

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	598	0	-	-	-	0	1560	1529	667	1530	1500	569
Stage 1	-	-	-	-	-	-	931	931	-	569	569	-
Stage 2	-	-	-	-	-	-	629	598	-	961	931	-
Critical Hdwy	4.12	-	-	-	-	-	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	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	979	-	0	0	-	-	91	117	459	96	122	522
Stage 1	-	-	0	0	-	-	320	346	-	507	506	-
Stage 2	-	-	0	0	-	-	470	491	-	308	346	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	979	-	-	-	-	-	63	101	459	55	106	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	101	-	55	106	-
Stage 1	-	-	-	-	-	-	277	299	-	439	506	-
Stage 2	-	-	-	-	-	-	363	491	-	219	299	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	147.8	13.9
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	96	979	-	-	-	522
HCM Lane V/C Ratio	0.91	0.134	-	-	-	0.228
HCM Control Delay (s)	147.8	9.2	-	-	-	13.9
HCM Lane LOS	F	A	-	-	-	B
HCM 95th %tile Q(veh)	5.2	0.5	-	-	-	0.9

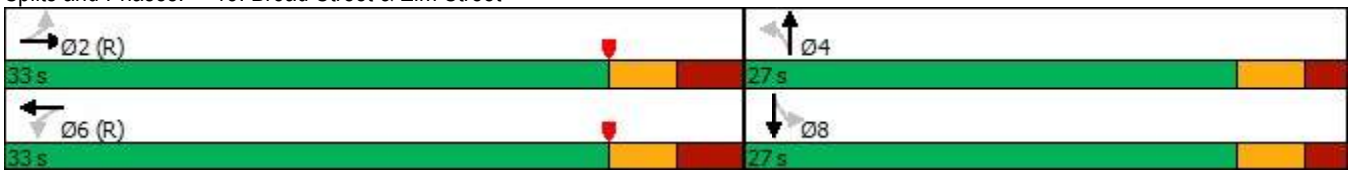


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	528	65	61	452	76	28	69	47	163	90	89
Future Volume (vph)	62	528	65	61	452	76	28	69	47	163	90	89
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.978			0.940			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1956	2026	0	1956	2014	0	1956	1935	0	1956	1904	0
Flt Permitted	0.396			0.348			0.613			0.679		
Satd. Flow (perm)	815	2026	0	716	2014	0	1262	1935	0	1398	1904	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			18			49			94	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	65	556	68	64	476	80	29	73	49	172	95	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	624	0	64	556	0	29	122	0	172	189	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.0	36.0		36.0	36.0		13.0	13.0		13.0	13.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.22	0.22		0.22	0.22	
v/c Ratio	0.13	0.51		0.15	0.46		0.11	0.27		0.57	0.39	
Control Delay	7.7	9.7		7.9	9.4		17.4	12.8		27.6	12.0	
Queue Delay	0.0	0.1		0.0	0.5		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	7.7	9.8		7.9	9.9		17.4	12.8		27.6	12.0	
LOS	A	A		A	A		B	B		C	B	
Approach Delay		9.6			9.7			13.7			19.4	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	624	64	556	29	122	172	189
v/c Ratio	0.13	0.51	0.15	0.46	0.11	0.27	0.57	0.39
Control Delay	7.7	9.7	7.9	9.4	17.4	12.8	27.6	12.0
Queue Delay	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	7.7	9.8	7.9	9.9	17.4	12.8	27.6	12.0
Queue Length 50th (ft)	9	108	11	123	9	22	56	29
Queue Length 95th (ft)	31	237	36	215	23	51	95	65
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	489	1222	430	1216	462	740	512	757
Starvation Cap Reductn	0	0	0	286	0	0	0	0
Spillback Cap Reductn	0	66	0	0	0	8	4	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.54	0.15	0.60	0.06	0.17	0.34	0.25

Intersection Summary

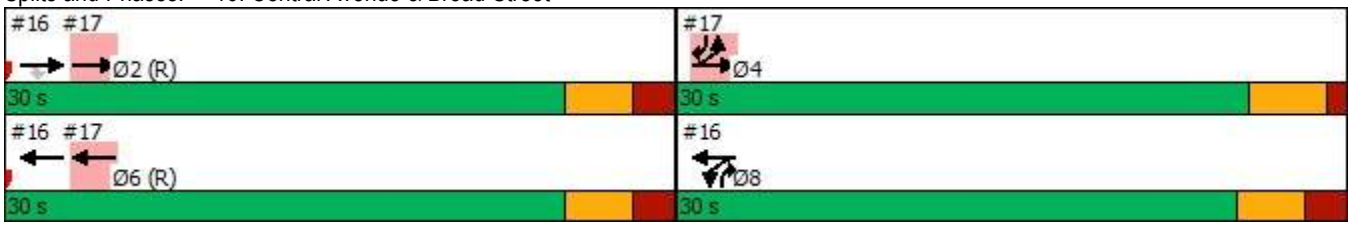


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	651	87	561	538	0	411		
Future Volume (vph)	651	87	561	538	0	411		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2059	1750	1956	2059	0	1781		
Flt Permitted			0.950					
Satd. Flow (perm)	2059	1750	1956	2059	0	1781		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		92				124		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	716			
Travel Time (s)	8.7			2.8	19.5			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%		
Adj. Flow (vph)	685	92	591	566	0	433		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	685	92	591	566	0	433		
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0			7.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	23.5	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.5	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	26.1	26.1	23.9	60.0		23.9		
Actuated g/C Ratio	0.44	0.44	0.40	1.00		0.40		
v/c Ratio	0.76	0.11	0.76	0.27		0.55		
Control Delay	22.6	5.1	25.8	0.3		12.5		
Queue Delay	20.0	0.0	26.9	0.0		0.2		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	42.6	5.1	52.6	0.3		12.6		
LOS	D	A	D	A		B		
Approach Delay	38.2			27.0	12.6			
Approach LOS	D			C	B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 28.1		Intersection LOS: C	
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	685	92	591	566	433
v/c Ratio	0.76	0.11	0.76	0.27	0.55
Control Delay	22.6	5.1	25.8	0.3	12.5
Queue Delay	20.0	0.0	26.9	0.0	0.2
Total Delay	42.6	5.1	52.6	0.3	12.6
Queue Length 50th (ft)	212	4	214	0	76
Queue Length 95th (ft)	#378	m27	316	0	149
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	896	813	815	2059	814
Starvation Cap Reductn	103	0	241	0	0
Spillback Cap Reductn	219	0	0	46	48
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.11	1.03	0.28	0.57

Intersection Summary

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



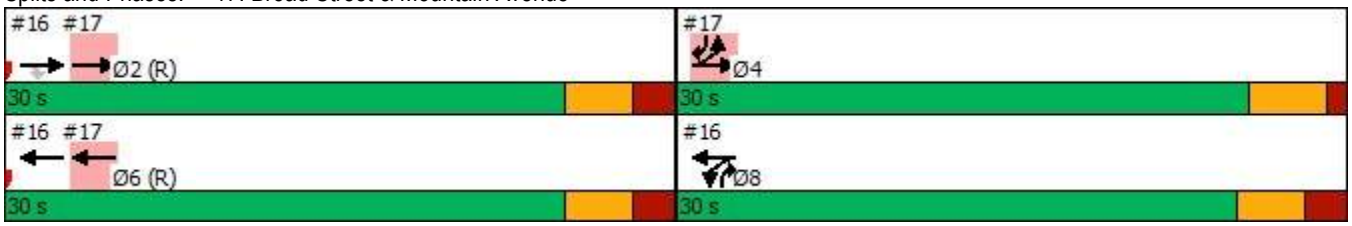
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	500	557	583	26	0	516		
Future Volume (vph)	500	557	583	26	0	516		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.994			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1956	2059	3888	0	0	3080		
Flt Permitted	0.950							
Satd. Flow (perm)	1956	2059	3888	0	0	3080		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			9			276		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	398		1032			
Travel Time (s)		2.5	10.9		28.1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%		
Adj. Flow (vph)	526	586	614	27	0	543		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	526	586	641	0	0	543		
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	7.0
Minimum Split (s)	23.5		30.0			23.5	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.5		25.0			25.5	25.0	25.0
Yellow Time (s)	3.5		3.0			3.5	3.0	3.0
All-Red Time (s)	1.0		2.0			1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	4.5		5.0			4.5		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	24.4	60.0	26.1			24.4		
Actuated g/C Ratio	0.41	1.00	0.44			0.41		
v/c Ratio	0.66	0.28	0.38			0.38		
Control Delay	19.4	0.3	12.5			6.4		
Queue Delay	46.3	0.0	55.3			0.1		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	65.7	0.3	67.7			6.6		
LOS	E	A	E			A		
Approach Delay		31.2	67.7		6.6			
Approach LOS		C	E		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 35.6		Intersection LOS: D	
Intersection Capacity Utilization 48.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	526	586	641	543
v/c Ratio	0.66	0.28	0.38	0.38
Control Delay	19.4	0.3	12.5	6.4
Queue Delay	46.3	0.0	55.3	0.1
Total Delay	65.7	0.3	67.7	6.6
Queue Length 50th (ft)	155	0	80	32
Queue Length 95th (ft)	m234	m0	116	64
Internal Link Dist (ft)		13	318	
Turn Bay Length (ft)				150
Base Capacity (vph)	831	2059	1697	1467
Starvation Cap Reductn	344	0	0	0
Spillback Cap Reductn	0	0	1236	214
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.08	0.28	1.39	0.43

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	564	10	35	808	0	10	0	34	0	0	0
Future Volume (vph)	0	564	10	35	808	0	10	0	34	0	0	0
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
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		0.998						0.897				
Flt Protected					0.998			0.988				
Satd. Flow (prot)	0	2055	0	0	2055	0	0	1825	0	0	2059	0
Flt Permitted					0.998			0.988				
Satd. Flow (perm)	0	2055	0	0	2055	0	0	1825	0	0	2059	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		473			427			221			152	
Travel Time (s)		9.2			8.3			6.0			4.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	594	11	37	851	0	11	0	36	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	0	0	888	0	0	47	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.2%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	564	10	35	808	0	10	0	34	0	0	0
Future Vol, veh/h	0	564	10	35	808	0	10	0	34	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	594	11	37	851	0	11	0	36	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	851	0	0	605	0	0	1525	1525	600	1543	1530	851
Stage 1	-	-	-	-	-	-	600	600	-	925	925	-
Stage 2	-	-	-	-	-	-	925	925	-	618	605	-
Critical Hdwy	4.12	-	-	4.12	-	-	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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	788	-	-	973	-	-	96	118	501	94	117	360
Stage 1	-	-	-	-	-	-	488	490	-	323	348	-
Stage 2	-	-	-	-	-	-	323	348	-	477	487	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	788	-	-	973	-	-	91	110	501	82	109	360
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	110	-	82	109	-
Stage 1	-	-	-	-	-	-	488	490	-	323	323	-
Stage 2	-	-	-	-	-	-	300	323	-	443	487	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	22.8	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	248	788	-	-	973	-	-	-
HCM Lane V/C Ratio	0.187	-	-	-	0.038	-	-	-
HCM Control Delay (s)	22.8	0	-	-	8.8	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	583	15	40	828	15	39
Future Volume (vph)	583	15	40	828	15	39
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.903	
Flt Protected				0.998	0.986	
Satd. Flow (prot)	2053	0	0	2055	1833	0
Flt Permitted				0.998	0.986	
Satd. Flow (perm)	2053	0	0	2055	1833	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	427			175	238	
Travel Time (s)	8.3			3.4	6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	614	16	42	872	16	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	630	0	0	914	57	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 78.9%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	583	15	40	828	15	39
Future Vol, veh/h	583	15	40	828	15	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	614	16	42	872	16	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	630	0	1578	622
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	956	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	952	-	120	487
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	373	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	952	-	110	487
Mov Cap-2 Maneuver	-	-	-	-	110	-
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	341	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	249	-	-	952	-
HCM Lane V/C Ratio	0.228	-	-	0.044	-
HCM Control Delay (s)	23.7	-	-	9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

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Midday Peak

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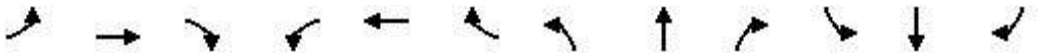
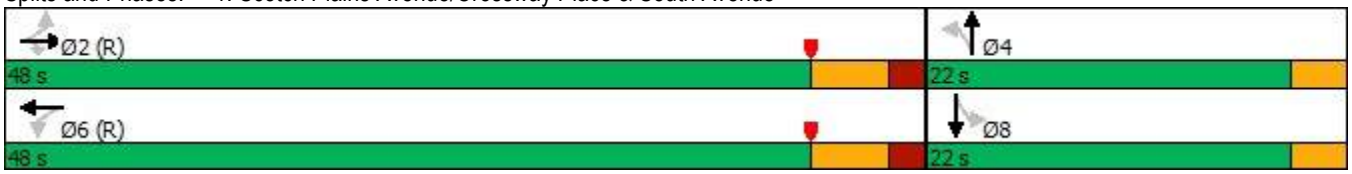


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	373	45	25	348	74	43	191	19	62	165	125
Future Volume (vph)	156	373	45	25	348	74	43	191	19	62	165	125
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.978			0.986			0.935	
Flt Protected		0.985			0.997		0.950			0.950		
Satd. Flow (prot)	0	2062	1785	0	2040	0	1995	2043	0	1975	1964	0
Flt Permitted		0.750			0.959		0.280			0.416		
Satd. Flow (perm)	0	1570	1785	0	1962	0	588	2043	0	865	1964	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47		25			7			53	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	4%	0%	1%	0%	1%	5%	1%	0%	0%
Adj. Flow (vph)	163	389	47	26	363	77	45	199	20	65	172	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	552	47	0	466	0	45	219	0	65	302	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		46.7	46.7		46.7		14.3	14.3		14.3	14.3	
Actuated g/C Ratio		0.67	0.67		0.67		0.20	0.20		0.20	0.20	
v/c Ratio		0.53	0.04		0.35		0.38	0.52		0.37	0.68	
Control Delay		13.4	4.7		6.4		31.9	27.6		28.7	28.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		13.4	4.7		6.4		31.9	27.6		28.7	28.7	
LOS		B	A		A		C	C		C	C	
Approach Delay		12.8			6.4			28.4			28.7	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	552	47	466	45	219	65	302
v/c Ratio	0.53	0.04	0.35	0.38	0.52	0.37	0.68
Control Delay	13.4	4.7	6.4	31.9	27.6	28.7	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	4.7	6.4	31.9	27.6	28.7	28.7
Queue Length 50th (ft)	159	1	68	17	82	24	99
Queue Length 95th (ft)	281	m21	141	43	132	54	161
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	1048	1207	1318	159	559	234	571
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.04	0.35	0.28	0.39	0.28	0.53

Intersection Summary

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

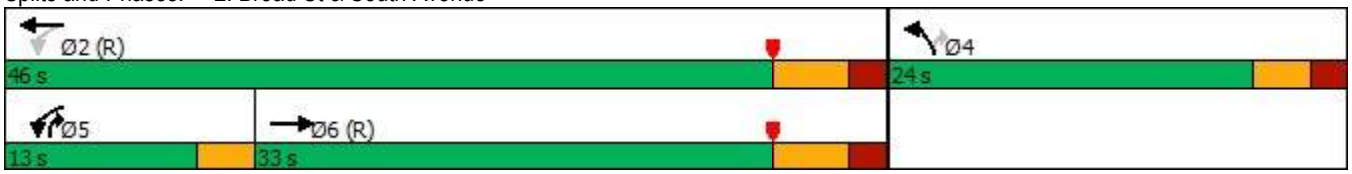


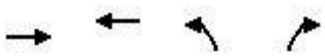
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	401	73	406	412	108	305
Future Volume (vph)	401	73	406	412	108	305
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.979					0.850
Flt Protected				0.976	0.950	
Satd. Flow (prot)	2019	0	0	3875	1995	1785
Flt Permitted				0.587	0.950	
Satd. Flow (perm)	2019	0	0	2331	1995	1785
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	12%	1%	0%	0%	0%
Adj. Flow (vph)	409	74	414	420	110	311
Shared Lane Traffic (%)						
Lane Group Flow (vph)	483	0	0	834	110	311
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	7.0		10.0	9.0	7.0	10.0
Minimum Split (s)	33.0		13.0	35.0	22.0	13.0
Total Split (s)	33.0		13.0	46.0	24.0	13.0
Total Split (%)	47.1%		18.6%	65.7%	34.3%	18.6%
Maximum Green (s)	27.0		10.0	40.0	19.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	7.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	39.5			52.7	8.7	21.5
Actuated g/C Ratio	0.56			0.75	0.12	0.31
v/c Ratio	0.42			0.44	0.45	0.57
Control Delay	11.4			4.2	33.8	23.7
Queue Delay	0.0			0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	11.4			4.2	33.8	23.7
LOS	B			A	C	C
Approach Delay	11.4			4.2	26.3	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Broad St & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	483	834	110	311
v/c Ratio	0.42	0.44	0.45	0.57
Control Delay	11.4	4.2	33.8	23.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.4	4.2	33.8	23.7
Queue Length 50th (ft)	116	51	45	107
Queue Length 95th (ft)	206	88	86	164
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	1139	1914	541	548
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	0.44	0.20	0.57

Intersection Summary

MOVEMENT SUMMARY

Site: 101 [Westfield RAB_Existing_SAT (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	14	0.0	15	0.0	0.663	15.0	LOS C	7.0	178.7	0.78	1.02	1.41	21.1
6	T1	341	0.0	371	0.0	0.663	15.0	LOS C	7.0	178.7	0.78	1.02	1.41	19.3
16	R2	382	7.0	415	7.0	0.663	11.0	LOS B	7.0	178.7	0.66	0.75	0.96	21.7
Approach		737	3.6	801	3.6	0.663	12.9	LOS B	7.0	178.7	0.72	0.88	1.18	20.5
North: SB - SR 28														
7	L2	384	0.0	417	0.0	0.452	8.7	LOS A	2.6	65.7	0.58	0.55	0.64	22.5
14	R2	356	0.0	387	0.0	0.452	7.2	LOS A	2.6	65.7	0.53	0.46	0.53	21.1
Approach		740	0.0	804	0.0	0.452	8.0	LOS A	2.6	65.7	0.56	0.51	0.59	21.9
West: EB - South Ave														
5	L2	482	0.0	524	0.0	0.766	18.2	LOS C	12.7	319.1	0.86	1.21	1.78	13.6
2	T1	386	1.0	420	1.0	0.766	12.6	LOS B	12.7	319.1	0.69	0.85	1.20	21.5
Approach		868	0.4	943	0.4	0.766	15.7	LOS C	12.7	319.1	0.78	1.05	1.52	16.6
All Vehicles		2345	1.3	2548	1.3	0.766	12.4	LOS B	12.7	319.1	0.69	0.83	1.12	19.2

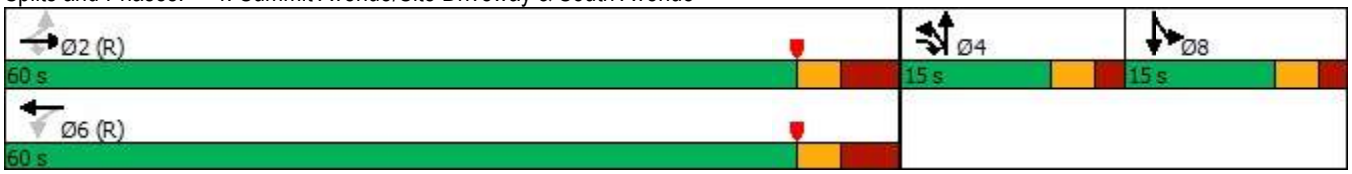
Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	631	47	27	580	11	102	13	40	12	2	17
Future Volume (vph)	9	631	47	27	580	11	102	13	40	12	2	17
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	0		70	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997			0.887			0.865	
Flt Protected		0.999			0.998		0.950			0.950		
Satd. Flow (prot)	0	2098	1785	0	3970	0	1995	1863	0	1995	1817	0
Flt Permitted		0.991			0.908		0.950			0.950		
Satd. Flow (perm)	0	2081	1785	0	3612	0	1995	1863	0	1995	1817	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			49		3			42			18	
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		511			169			500			138	
Travel Time (s)		13.9			3.8			13.6			3.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	9	657	49	28	604	11	106	14	42	13	2	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	666	49	0	643	0	106	56	0	13	20	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		65.4	79.7		65.4		9.1	9.1		7.1	7.1	
Actuated g/C Ratio		0.73	0.89		0.73		0.10	0.10		0.08	0.08	
v/c Ratio		0.44	0.03		0.24		0.52	0.25		0.08	0.13	
Control Delay		8.6	0.6		6.3		47.9	19.1		39.8	20.7	
Queue Delay		0.2	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		8.7	0.6		6.3		47.9	19.1		39.8	20.7	
LOS		A	A		A		D	B		D	C	
Approach Delay		8.2			6.3			38.0			28.2	
Approach LOS		A			A			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	666	49	643	106	56	13	20
v/c Ratio	0.44	0.03	0.24	0.52	0.25	0.08	0.13
Control Delay	8.6	0.6	6.3	47.9	19.1	39.8	20.7
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	0.6	6.3	47.9	19.1	39.8	20.7
Queue Length 50th (ft)	191	0	79	58	7	7	1
Queue Length 95th (ft)	278	5	108	109	42	25	23
Internal Link Dist (ft)	431		89		420		58
Turn Bay Length (ft)							
Base Capacity (vph)	1512	1573	2626	221	244	221	217
Starvation Cap Reductn	222	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.03	0.24	0.48	0.23	0.06	0.09

Intersection Summary



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	647	43	32	562	43	105
Future Volume (vph)	647	43	32	562	43	105
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.992				0.904	
Flt Protected				0.997	0.986	
Satd. Flow (prot)	2083	0	0	3978	1872	0
Flt Permitted				0.997	0.986	
Satd. Flow (perm)	2083	0	0	3978	1872	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	326			279	211	
Travel Time (s)	7.4			6.3	4.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	660	44	33	573	44	107
Shared Lane Traffic (%)						
Lane Group Flow (vph)	704	0	0	606	151	0
Sign Control	Free			Free	Stop	

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	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	647	43	32	562	43	105
Future Vol, veh/h	647	43	32	562	43	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	660	44	33	573	44	107

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	704	0	1035	682
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	353	-
Critical Hdwy	-	-	4.1	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	903	-	245	453
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	903	-	232	453
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	22.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	355	-	-	903	-
HCM Lane V/C Ratio	0.425	-	-	0.036	-
HCM Control Delay (s)	22.4	-	-	9.1	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.1	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	21	713	601	16	18	37
Future Volume (vph)	21	713	601	16	18	37
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.996		0.908	
Flt Protected		0.999			0.984	
Satd. Flow (prot)	0	2098	3974	0	1876	0
Flt Permitted		0.999			0.984	
Satd. Flow (perm)	0	2098	3974	0	1876	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		279	494		163	
Travel Time (s)		6.3	11.2		4.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	23	767	646	17	19	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	790	663	0	59	0
Sign Control		Free	Free		Stop	

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	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	713	601	16	18	37
Future Vol, veh/h	21	713	601	16	18	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	23	767	646	17	19	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	663	0	-	0	1468	332
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	813	-
Critical Hdwy	4.1	-	-	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	935	-	-	-	131	670
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	935	-	-	-	125	670
Mov Cap-2 Maneuver	-	-	-	-	125	-
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	21.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	935	-	-	-	276
HCM Lane V/C Ratio	0.024	-	-	-	0.214
HCM Control Delay (s)	8.9	0	-	-	21.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	122	398	197	11	94	26	380	256	4	160	471	65
Future Volume (vph)	122	398	197	11	94	26	380	256	4	160	471	65
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949						0.850			0.982	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1995	3737	0	0	0	1995	2100	1767	0	1976	2017	0
Flt Permitted	0.368					0.334				0.312		
Satd. Flow (perm)	773	3737	0	0	0	701	2100	1767	0	649	2017	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		2						209			8	
Link Speed (mph)		30					30				25	
Link Distance (ft)		494					926				398	
Travel Time (s)		11.2					21.0				10.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	1%	2%	4%
Adj. Flow (vph)	127	415	205	11	98	27	396	267	4	167	491	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	631	0	0	0	125	396	267	0	171	559	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	40.1	30.1				40.1	30.1	30.1		38.8	28.8	
Actuated g/C Ratio	0.44	0.33				0.44	0.33	0.33		0.43	0.32	
v/c Ratio	0.31	0.51				0.33	0.57	0.37		0.49	0.87	
Control Delay	17.0	26.9				17.3	29.9	8.0		20.0	44.1	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

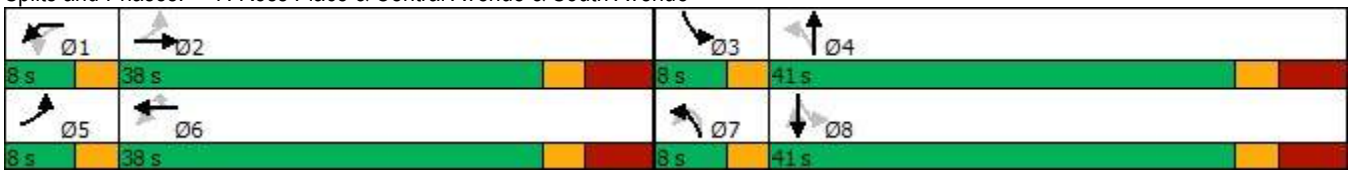


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	239	410	89	98
Future Volume (vph)	239	410	89	98
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1995	2059	1777	0
Flt Permitted	0.139			
Satd. Flow (perm)	292	2059	1777	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		809		
Travel Time (s)		22.1		
Peak Hour Factor	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	1%	0%
Adj. Flow (vph)	249	427	93	102
Shared Lane Traffic (%)				
Lane Group Flow (vph)	249	427	195	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	38.8	28.8	28.8	
Actuated g/C Ratio	0.43	0.32	0.32	
v/c Ratio	1.14	0.66	0.30	
Control Delay	127.4	32.0	10.0	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	17.0	26.9				17.3	29.9	8.0		20.0	44.1	
LOS	B	C				B	C	A		C	D	
Approach Delay		25.2					20.5				38.5	
Approach LOS		C					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 91			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 35.2		Intersection LOS: D	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	127.4	32.0	10.0	
LOS	F	C	A	
Approach Delay		54.3		
Approach LOS		D		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	127	631	125	396	267	171	559	249	427	195
v/c Ratio	0.31	0.51	0.33	0.57	0.37	0.49	0.87	1.14	0.66	0.30
Control Delay	17.0	26.9	17.3	29.9	8.0	20.0	44.1	127.4	32.0	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	26.9	17.3	29.9	8.0	20.0	44.1	127.4	32.0	10.0
Queue Length 50th (ft)	42	158	41	195	24	56	296	~104	210	28
Queue Length 95th (ft)	78	217	77	297	83	95	#441	#239	308	76
Internal Link Dist (ft)		414		846			318		729	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	408	1237	380	694	724	350	738	218	749	726
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	0.31	0.51	0.33	0.57	0.37	0.49	0.76	1.14	0.57	0.27

Intersection Summary

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

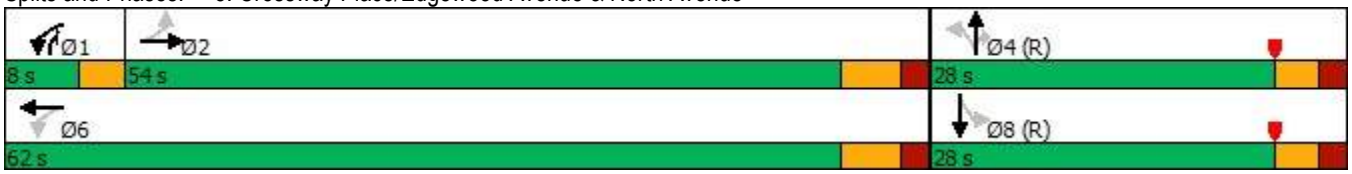
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

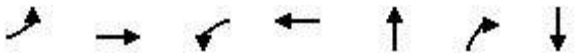
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	487	50	266	535	17	67	58	317	5	58	13
Future Volume (vph)	6	487	50	266	535	17	67	58	317	5	58	13
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.995				0.850		0.977	
Flt Protected	0.950			0.950				0.974			0.997	
Satd. Flow (prot)	1995	2052	0	1995	2050	0	0	2045	1750	0	2046	0
Flt Permitted	0.416			0.299				0.803			0.985	
Satd. Flow (perm)	874	2052	0	628	2050	0	0	1686	1750	0	2021	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			3				305		11	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
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 (%)	0%	1%	0%	0%	2%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	6	524	54	286	575	18	72	62	341	5	62	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	578	0	286	593	0	0	134	341	0	81	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	54.0	54.0		8.0	62.0		28.0	28.0	8.0	28.0	28.0	
Total Split (%)	60.0%	60.0%		8.9%	68.9%		31.1%	31.1%	8.9%	31.1%	31.1%	
Maximum Green (s)	48.0	48.0		5.0	56.0		23.0	23.0	5.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		59.0	56.0			23.0	33.0		23.0	
Actuated g/C Ratio	0.53	0.53		0.66	0.62			0.26	0.37		0.26	
v/c Ratio	0.01	0.53		0.59	0.46			0.31	0.41		0.15	
Control Delay	10.0	15.6		12.0	10.5			29.5	5.2		23.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.0	15.6		12.0	10.5			29.5	5.2		23.6	
LOS	A	B		B	B			C	A		C	
Approach Delay		15.5			11.0			12.1			23.6	
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	6	578	286	593	134	341	81
v/c Ratio	0.01	0.53	0.59	0.46	0.31	0.41	0.15
Control Delay	10.0	15.6	12.0	10.5	29.5	5.2	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	15.6	12.0	10.5	29.5	5.2	23.6
Queue Length 50th (ft)	2	198	58	161	62	13	31
Queue Length 95th (ft)	7	288	91	234	112	69	67
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	466	1098	487	1276	430	834	524
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.53	0.59	0.46	0.31	0.41	0.15

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	566	518	148	160	34
Future Volume (vph)	13	566	518	148	160	34
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	2098	2032	0	1995	1785
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	2098	2032	0	1995	1785
Link Speed (mph)		35	35		25	
Link Distance (ft)		175	395		156	
Travel Time (s)		3.4	7.7		4.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	13	584	534	153	165	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	597	687	0	165	35
Sign Control		Free	Free		Stop	

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	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	566	518	148	160	34
Future Vol, veh/h	13	566	518	148	160	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	13	584	534	153	165	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	687	0	-	0	1221	611
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	610	-
Critical Hdwy	4.1	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	916	-	-	-	395	687
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	546	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	916	-	-	-	387	687
Mov Cap-2 Maneuver	-	-	-	-	387	-
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	916	-	-	-	387	687
HCM Lane V/C Ratio	0.015	-	-	-	0.426	0.051
HCM Control Delay (s)	9	0	-	-	21	10.5
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	2.1	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	167	162	0	49	17
Future Volume (vph)	0	167	162	0	49	17
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.965	
Flt Protected					0.964	
Satd. Flow (prot)	0	2079	2100	0	1954	0
Flt Permitted					0.964	
Satd. Flow (perm)	0	2079	2100	0	1954	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		92	156		163	
Travel Time (s)		2.5	4.3		4.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	186	180	0	54	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	186	180	0	73	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	167	162	0	49	17
Future Vol, veh/h	0	167	162	0	49	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	0	186	180	0	54	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	366	180
Stage 1	-	-	-	-	180	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	638	868
Stage 1	0	-	-	0	856	-
Stage 2	0	-	-	0	851	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	638	868
Mov Cap-2 Maneuver	-	-	-	-	638	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	851	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

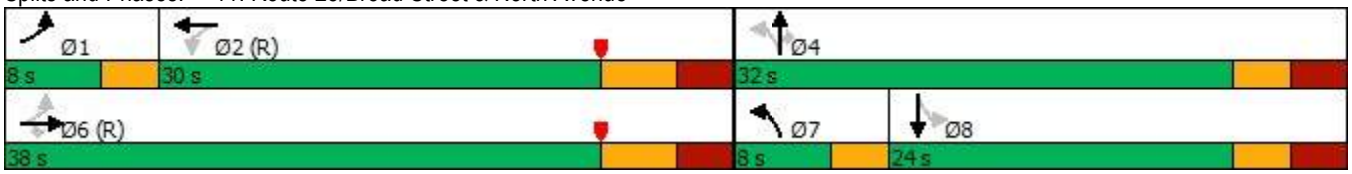
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	685
HCM Lane V/C Ratio	-	-	0.107
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	361	359	189	471	12	261	412	160	47	376	125
Future Volume (vph)	143	361	359	189	471	12	261	412	160	47	376	125
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.997				0.850		0.966	
Flt Protected	0.950				0.986		0.950				0.996	
Satd. Flow (prot)	1975	1600	1767	0	3795	0	1995	2100	1785	0	3804	0
Flt Permitted	0.288				0.745		0.261				0.869	
Satd. Flow (perm)	599	1600	1767	0	2867	0	548	2100	1785	0	3319	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			354		3						53	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		395			555			498			430	
Travel Time (s)		7.7			15.1			13.6			11.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	2%	4%	0%	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	147	372	370	195	486	12	269	425	165	48	388	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	372	370	0	693	0	269	425	165	0	565	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	37.1	33.1	33.1		26.1		26.9	23.9	23.9		15.9	
Actuated g/C Ratio	0.53	0.47	0.47		0.37		0.38	0.34	0.34		0.23	
v/c Ratio	0.34	0.49	0.36		0.65		0.86	0.59	0.27		0.71	
Control Delay	11.3	16.1	2.9		20.3		44.3	22.6	17.4		27.7	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	11.3	16.1	2.9		20.3		44.3	22.6	17.4		27.7	
LOS	B	B	A		C		D	C	B		C	
Approach Delay		9.8			20.3			28.4			27.7	
Approach LOS		A			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 20.9		Intersection LOS: C	
Intersection Capacity Utilization 95.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue

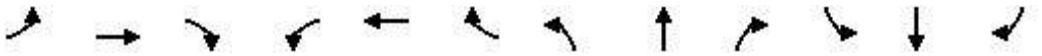




Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	147	372	370	693	269	425	165	565
v/c Ratio	0.34	0.49	0.36	0.65	0.86	0.59	0.27	0.71
Control Delay	11.3	16.1	2.9	20.3	44.3	22.6	17.4	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	16.1	2.9	20.3	44.3	22.6	17.4	27.7
Queue Length 50th (ft)	31	107	4	138	78	145	50	105
Queue Length 95th (ft)	61	187	47	220	#173	222	90	152
Internal Link Dist (ft)		315		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	433	757	1022	1069	313	780	663	892
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.49	0.36	0.65	0.86	0.54	0.25	0.63

Intersection Summary

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



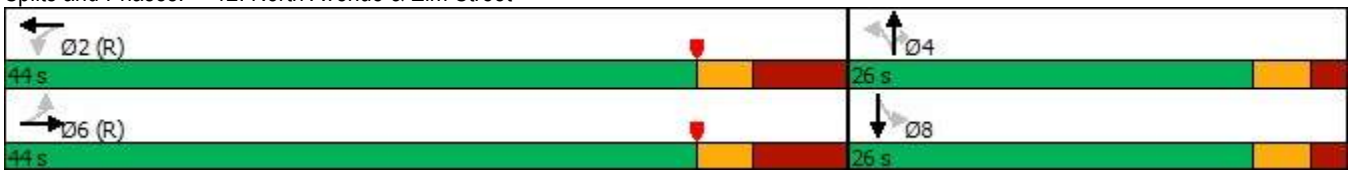
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	511	46	36	656	132	0	0	0	128	26	92
Future Volume (vph)	24	511	46	36	656	132	0	0	0	128	26	92
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.988			0.976						0.949	
Flt Protected		0.998			0.998						0.975	
Satd. Flow (prot)	0	3934	0	0	3886	0	0	1900	2000	0	1758	0
Flt Permitted		0.896			0.903						0.836	
Satd. Flow (perm)	0	3532	0	0	3516	0	0	1900	2000	0	1507	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			46						44	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			479			193			176	
Travel Time (s)		4.4			13.1			4.4			4.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	24	516	46	36	663	133	0	0	0	129	26	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	586	0	0	832	0	0	0	0	0	248	0
Turn Type	Perm	NA		Perm	NA				Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		26.0	26.0	26.0	26.0	26.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	Max	Max	
Act Effct Green (s)		36.0			36.0						21.0	
Actuated g/C Ratio		0.51			0.51						0.30	
v/c Ratio		0.32			0.45						0.51	
Control Delay		10.4			11.9						21.0	
Queue Delay		0.0			0.0						0.0	
Total Delay		10.4			11.9						21.0	
LOS		B			B						C	
Approach Delay		10.4			11.9						21.0	
Approach LOS		B			B						C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 12.7		Intersection LOS: B	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	SBT
Lane Group Flow (vph)	586	832	248
v/c Ratio	0.32	0.45	0.51
Control Delay	10.4	11.9	21.0
Queue Delay	0.0	0.0	0.0
Total Delay	10.4	11.9	21.0
Queue Length 50th (ft)	35	105	74
Queue Length 95th (ft)	121	m144	145
Internal Link Dist (ft)	83	399	96
Turn Bay Length (ft)			
Base Capacity (vph)	1825	1830	482
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.32	0.45	0.51

Intersection Summary

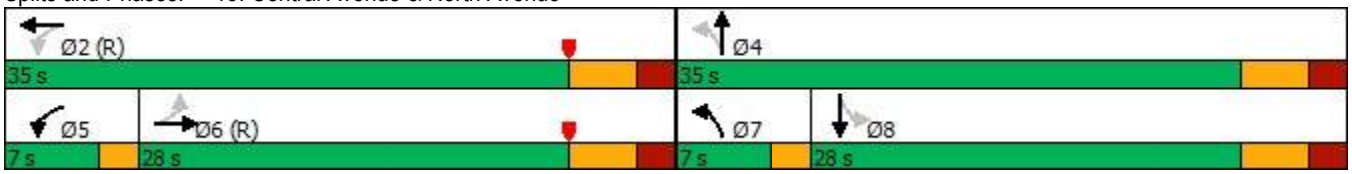
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	406	220	215	547	59	226	489	164	44	455	29
Future Volume (vph)	76	406	220	215	547	59	226	489	164	44	455	29
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.953			0.989			0.972			0.992	
Flt Protected		0.995			0.987			0.987			0.996	
Satd. Flow (prot)	0	3783	0	0	3895	0	0	3814	0	0	3936	0
Flt Permitted		0.757			0.571			0.632			0.809	
Satd. Flow (perm)	0	2878	0	0	2253	0	0	2442	0	0	3197	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					14			49				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		203			706			809			223	
Travel Time (s)		5.5			13.8			22.1			6.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%
Adj. Flow (vph)	78	414	224	219	558	60	231	499	167	45	464	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	716	0	0	837	0	0	897	0	0	539	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		23.4			30.6			28.2			21.2	
Actuated g/C Ratio		0.33			0.44			0.40			0.30	
v/c Ratio		0.75			0.81			0.86			0.56	
Control Delay		22.0			25.1			27.8			22.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.0			25.1			27.8			22.7	
LOS		C			C			C			C	
Approach Delay		22.0			25.1			27.8			22.7	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 24.8		Intersection LOS: C	
Intersection Capacity Utilization 94.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 13: Central Avenue & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	716	837	897	539
v/c Ratio	0.75	0.81	0.86	0.56
Control Delay	22.0	25.1	27.8	22.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.0	25.1	27.8	22.7
Queue Length 50th (ft)	96	132	138	98
Queue Length 95th (ft)	#105	#206	#207	144
Internal Link Dist (ft)	123	626	729	143
Turn Bay Length (ft)				
Base Capacity (vph)	960	1031	1081	1023
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	0.75	0.81	0.83	0.53

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	465	1	0	385	72	17	47	76	0	0	166
Future Volume (vph)	142	465	1	0	385	72	17	47	76	0	0	166
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.979			0.927			0.865	
Flt Protected	0.950							0.994				
Satd. Flow (prot)	1995	2079	0	0	2046	0	0	1935	0	0	1799	0
Flt Permitted	0.950							0.994				
Satd. Flow (perm)	1995	2079	0	0	2046	0	0	1935	0	0	1799	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
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 (%)	0%	1%	0%	0%	0%	3%	0%	0%	0%	0%	0%	1%
Adj. Flow (vph)	153	500	1	0	414	77	18	51	82	0	0	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	501	0	0	491	0	0	151	0	0	178	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.3%		ICU Level of Service B	
Analysis Period (min) 15			

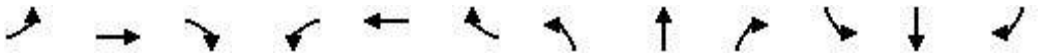
Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	142	465	1	0	385	72	17	47	76	0	0	166
Future Vol, veh/h	142	465	1	0	385	72	17	47	76	0	0	166
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	1	0	0	0	3	0	0	0	0	0	1
Mvmt Flow	153	500	1	0	414	77	18	51	82	0	0	178

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	491	0	0	-	-	0	1349	1298	501	1326	1260	453
Stage 1	-	-	-	-	-	-	807	807	-	453	453	-
Stage 2	-	-	-	-	-	-	542	491	-	873	807	-
Critical Hdwy	4.1	-	-	-	-	-	7.1	6.5	6.2	7.1	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3	3.5	4	3.309
Pot Cap-1 Maneuver	1083	-	-	0	-	-	129	163	574	134	172	609
Stage 1	-	-	-	0	-	-	378	397	-	590	573	-
Stage 2	-	-	-	0	-	-	528	552	-	348	397	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1083	-	-	-	-	-	81	140	574	74	148	609
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	140	-	74	148	-
Stage 1	-	-	-	-	-	-	325	341	-	507	573	-
Stage 2	-	-	-	-	-	-	373	552	-	218	341	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	58.9	13.3
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	206	1083	-	-	-	-	609
HCM Lane V/C Ratio	0.731	0.141	-	-	-	-	0.293
HCM Control Delay (s)	58.9	8.9	-	-	-	-	13.3
HCM Lane LOS	F	A	-	-	-	-	B
HCM 95th %tile Q(veh)	4.8	0.5	-	-	-	-	1.2

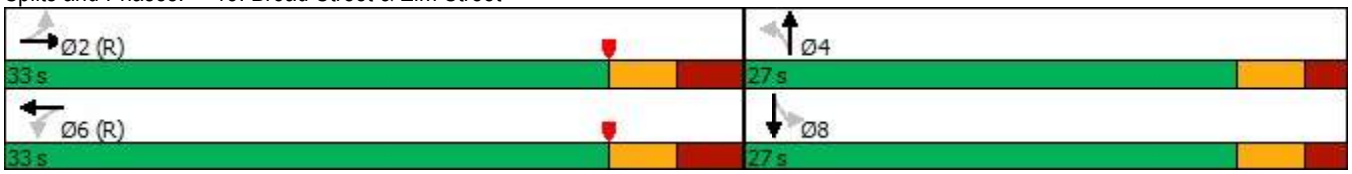


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	375	73	31	318	79	51	149	85	124	115	81
Future Volume (vph)	75	375	73	31	318	79	51	149	85	124	115	81
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.970			0.945			0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1995	2050	0	1995	2037	0	1995	1985	0	1995	1970	0
Flt Permitted	0.509			0.468			0.569			0.478		
Satd. Flow (perm)	1069	2050	0	983	2037	0	1195	1985	0	1004	1970	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			27			54			66	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	78	391	76	32	331	82	53	155	89	129	120	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	467	0	32	413	0	53	244	0	129	204	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	37.1	37.1		37.1	37.1		11.9	11.9		11.9	11.9	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.20	0.20		0.20	0.20	
v/c Ratio	0.12	0.37		0.05	0.33		0.22	0.56		0.65	0.46	
Control Delay	6.7	7.3		6.7	7.9		20.6	20.8		36.3	16.5	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	6.7	7.3		6.7	8.3		20.6	20.8		36.3	16.5	
LOS	A	A		A	A		C	C		D	B	
Approach Delay		7.2			8.2			20.8			24.2	
Approach LOS		A			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 13.4		Intersection LOS: B	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	78	467	32	413	53	244	129	204
v/c Ratio	0.12	0.37	0.05	0.33	0.22	0.56	0.65	0.46
Control Delay	6.7	7.3	6.7	7.9	20.6	20.8	36.3	16.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	6.7	7.3	6.7	8.3	20.6	20.8	36.3	16.5
Queue Length 50th (ft)	10	66	5	85	16	62	44	44
Queue Length 95th (ft)	33	151	21	160	37	106	82	83
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	660	1274	607	1268	438	762	368	764
Starvation Cap Reductn	0	0	0	391	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.37	0.05	0.47	0.12	0.32	0.35	0.27

Intersection Summary

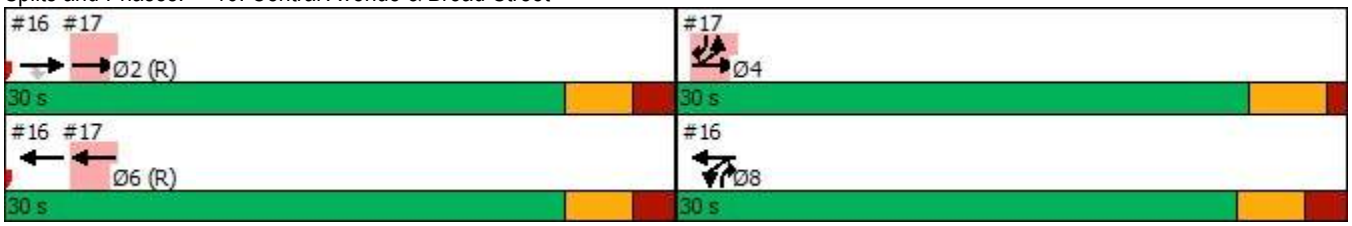


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	439	159	477	435	0	378		
Future Volume (vph)	439	159	477	435	0	378		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2100	1785	1995	2100	0	1817		
Flt Permitted			0.950					
Satd. Flow (perm)	2100	1785	1995	2100	0	1817		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		166				262		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	716			
Travel Time (s)	8.7			2.8	19.5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	457	166	497	453	0	394		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	457	166	497	453	0	394		
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0			7.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	23.5	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.5	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	27.4	27.4	22.6	60.0		22.6		
Actuated g/C Ratio	0.46	0.46	0.38	1.00		0.38		
v/c Ratio	0.48	0.18	0.66	0.22		0.47		
Control Delay	14.7	4.7	23.8	0.2		6.3		
Queue Delay	0.5	0.0	14.6	0.0		0.1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	15.2	4.7	38.4	0.2		6.4		
LOS	B	A	D	A		A		
Approach Delay	12.4			20.2	6.4			
Approach LOS	B			C	A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	457	166	497	453	394
v/c Ratio	0.48	0.18	0.66	0.22	0.47
Control Delay	14.7	4.7	23.8	0.2	6.3
Queue Delay	0.5	0.0	14.6	0.0	0.1
Total Delay	15.2	4.7	38.4	0.2	6.4
Queue Length 50th (ft)	112	1	170	0	29
Queue Length 95th (ft)	196	41	258	0	79
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	958	904	831	2080	909
Starvation Cap Reductn	151	0	318	0	0
Spillback Cap Reductn	179	0	0	0	61
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.18	0.97	0.22	0.46

Intersection Summary



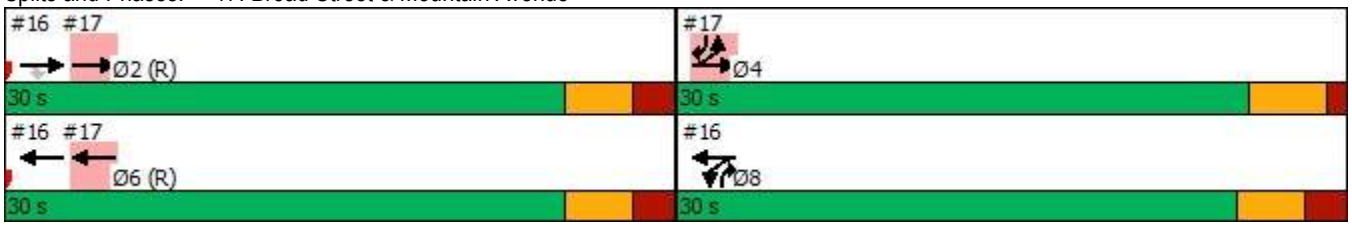
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	427	389	463	40	0	450		
Future Volume (vph)	427	389	463	40	0	450		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.988			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1995	2100	3942	0	0	3142		
Flt Permitted	0.950							
Satd. Flow (perm)	1995	2100	3942	0	0	3142		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			18			432		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	398		1032			
Travel Time (s)		2.5	10.9		28.1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	440	401	477	41	0	464		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	440	401	518	0	0	464		
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	7.0
Minimum Split (s)	23.5		30.0			23.5	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.5		25.0			25.5	25.0	25.0
Yellow Time (s)	3.5		3.0			3.5	3.0	3.0
All-Red Time (s)	1.0		2.0			1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	4.5		5.0			4.5		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	23.1	60.0	27.4			23.1		
Actuated g/C Ratio	0.38	1.00	0.46			0.38		
v/c Ratio	0.57	0.19	0.29			0.31		
Control Delay	19.5	0.2	11.1			2.4		
Queue Delay	11.7	0.0	2.8			0.1		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	31.3	0.2	13.9			2.5		
LOS	C	A	B			A		
Approach Delay		16.5	13.9		2.5			
Approach LOS		B	B		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 42.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	440	401	518	464
v/c Ratio	0.57	0.19	0.29	0.31
Control Delay	19.5	0.2	11.1	2.4
Queue Delay	11.7	0.0	2.8	0.1
Total Delay	31.3	0.2	13.9	2.5
Queue Length 50th (ft)	133	0	60	3
Queue Length 95th (ft)	203	0	92	28
Internal Link Dist (ft)		13	318	
Turn Bay Length (ft)				150
Base Capacity (vph)	847	2080	1808	1583
Starvation Cap Reductn	379	0	0	0
Spillback Cap Reductn	0	0	1149	260
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.94	0.19	0.79	0.35

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	566	19	65	612	0	17	0	58	0	0	0
Future Volume (vph)	0	566	19	65	612	0	17	0	58	0	0	0
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
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		0.996						0.896				
Flt Protected					0.995			0.989				
Satd. Flow (prot)	0	2072	0	0	2052	0	0	1861	0	0	2100	0
Flt Permitted					0.995			0.989				
Satd. Flow (perm)	0	2072	0	0	2052	0	0	1861	0	0	2100	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		473			427			221			152	
Travel Time (s)		9.2			8.3			6.0			4.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	584	20	67	631	0	18	0	60	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	604	0	0	698	0	0	78	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	566	19	65	612	0	17	0	58	0	0	0
Future Vol, veh/h	0	566	19	65	612	0	17	0	58	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	1	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	584	20	67	631	0	18	0	60	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	631	0	0	604	0	0	1359	1359	594	1389	1369	631
Stage 1	-	-	-	-	-	-	594	594	-	765	765	-
Stage 2	-	-	-	-	-	-	765	765	-	624	604	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	961	-	-	984	-	-	127	150	509	121	148	485
Stage 1	-	-	-	-	-	-	495	496	-	399	415	-
Stage 2	-	-	-	-	-	-	399	415	-	477	491	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	961	-	-	984	-	-	117	134	509	98	132	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	134	-	98	132	-
Stage 1	-	-	-	-	-	-	495	496	-	399	371	-
Stage 2	-	-	-	-	-	-	357	371	-	421	491	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	21.9	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	289	961	-	-	984	-	-	-
HCM Lane V/C Ratio	0.268	-	-	-	0.068	-	-	-
HCM Control Delay (s)	21.9	0	-	-	8.9	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.1	0	-	-	0.2	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	595	28	75	649	25	66
Future Volume (vph)	595	28	75	649	25	66
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.903	
Flt Protected				0.995	0.986	
Satd. Flow (prot)	2068	0	0	2053	1870	0
Flt Permitted				0.995	0.986	
Satd. Flow (perm)	2068	0	0	2053	1870	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	427			175	238	
Travel Time (s)	8.3			3.4	6.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	607	29	77	662	26	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	636	0	0	739	93	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 79.5%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	595	28	75	649	25	66
Future Vol, veh/h	595	28	75	649	25	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	607	29	77	662	26	67

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	636	0	1438	622
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	816	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	957	-	148	490
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	438	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	957	-	129	490
Mov Cap-2 Maneuver	-	-	-	-	129	-
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	382	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	24.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	277	-	-	957	-
HCM Lane V/C Ratio	0.335	-	-	0.08	-
HCM Control Delay (s)	24.4	-	-	9.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0.3	-

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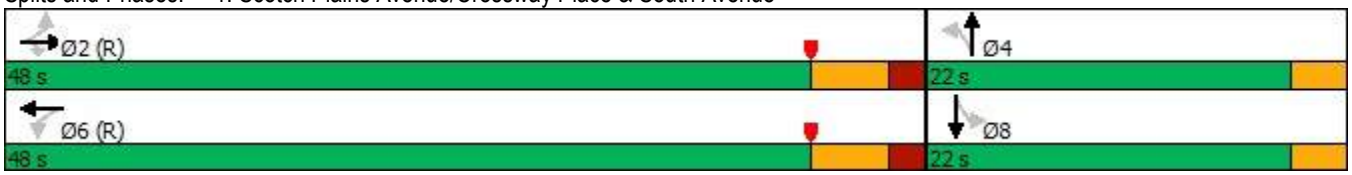
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	211	46	2	165	40	46	304	25	90	191	44
Future Volume (vph)	291	211	46	2	165	40	46	304	25	90	191	44
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.974			0.989			0.972	
Flt Protected		0.972					0.950			0.950		
Satd. Flow (prot)	0	1944	1700	0	1948	0	1900	1978	0	1900	1944	0
Flt Permitted		0.703			0.997		0.400			0.245		
Satd. Flow (perm)	0	1406	1700	0	1942	0	800	1978	0	490	1944	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			48		31			6			16	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	306	222	48	2	174	42	48	320	26	95	201	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	48	0	218	0	48	346	0	95	247	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	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		44.7	44.7		44.7		16.3	16.3		16.3	16.3	
Actuated g/C Ratio		0.64	0.64		0.64		0.23	0.23		0.23	0.23	
v/c Ratio		0.59	0.04		0.17		0.26	0.74		0.83	0.53	
Control Delay		17.8	4.5		5.3		24.5	34.5		77.3	25.8	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		17.8	4.5		5.3		24.5	34.5		77.3	25.8	
LOS		B	A		A		C	C		E	C	
Approach Delay		16.7			5.3			33.3			40.1	
Approach LOS		B			A			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 24.6		Intersection LOS: C	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	528	48	218	48	346	95	247
v/c Ratio	0.59	0.04	0.17	0.26	0.74	0.83	0.53
Control Delay	17.8	4.5	5.3	24.5	34.5	77.3	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	4.5	5.3	24.5	34.5	77.3	25.8
Queue Length 50th (ft)	217	5	29	17	133	38	85
Queue Length 95th (ft)	318	m11	59	43	212	#112	145
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	897	1102	1251	217	541	133	539
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.04	0.17	0.22	0.64	0.71	0.46

Intersection Summary

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

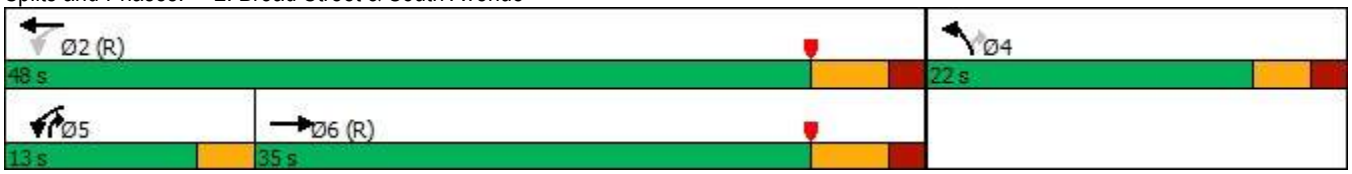
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	391	92	760	196	92	373
Future Volume (vph)	391	92	760	196	92	373
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.974					0.850
Flt Protected				0.962	0.950	
Satd. Flow (prot)	1948	0	0	3656	1900	1700
Flt Permitted				0.548	0.950	
Satd. Flow (perm)	1948	0	0	2082	1900	1700
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	412	97	800	206	97	393
Shared Lane Traffic (%)						
Lane Group Flow (vph)	509	0	0	1006	97	393
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5

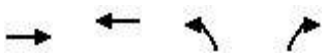
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	10.0		9.0	9.0	7.0	9.0
Minimum Split (s)	35.0		13.0	35.0	22.0	13.0
Total Split (s)	35.0		13.0	48.0	22.0	13.0
Total Split (%)	50.0%		18.6%	68.6%	31.4%	18.6%
Maximum Green (s)	29.0		10.0	42.0	17.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	9.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	37.2			52.9	8.5	23.8
Actuated g/C Ratio	0.53			0.76	0.12	0.34
v/c Ratio	0.49			1.15dl	0.42	0.68
Control Delay	14.2			4.9	33.7	25.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	14.2			4.9	33.7	25.2
LOS	B			A	C	C
Approach Delay	14.2			4.9	26.9	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 12.7		Intersection LOS: B	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Broad Street & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	509	1006	97	393
v/c Ratio	0.49	1.15dl	0.42	0.68
Control Delay	14.2	4.9	33.7	25.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.2	4.9	33.7	25.2
Queue Length 50th (ft)	132	66	40	140
Queue Length 95th (ft)	262	112	78	190
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	1036	1789	461	582
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	0.49	0.56	0.21	0.68

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

MOVEMENT SUMMARY

Site: 101 [Westfield RAB_Existing_AM (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	18	0.0	19	0.0	0.671	16.9	LOS C	6.4	164.8	0.80	1.05	1.52	20.2
6	T1	308	4.0	328	4.0	0.671	17.0	LOS C	6.4	164.8	0.80	1.05	1.52	18.4
16	R2	350	4.0	372	4.0	0.671	12.0	LOS B	6.4	164.8	0.69	0.80	1.02	21.1
Approach		676	3.9	719	3.9	0.671	14.4	LOS B	6.4	164.8	0.74	0.93	1.26	19.7
North: SB - SR 28														
7	L2	526	5.0	560	5.0	0.648	13.3	LOS B	7.4	191.9	0.70	0.84	1.16	19.8
14	R2	524	5.0	557	5.0	0.648	10.0	LOS A	7.4	191.9	0.59	0.59	0.74	18.9
Approach		1050	5.0	1117	5.0	0.648	11.6	LOS B	7.4	191.9	0.65	0.71	0.95	19.4
West: EB - South Ave														
5u	U	2	0.0	2	0.0	1.126	92.7	LOS F	57.0	1464.8	1.00	3.14	7.04	5.2
5	L2	639	3.0	680	3.0	1.126	92.8	LOS F	57.0	1464.8	1.00	3.14	7.04	5.4
2	T1	440	5.0	468	5.0	1.126	52.2	LOS F	57.0	1464.8	0.79	1.92	3.96	10.3
Approach		1081	3.8	1150	3.8	1.126	76.3	LOS F	57.0	1464.8	0.92	2.64	5.78	6.8
All Vehicles		2807	4.3	2986	4.3	1.126	37.2	LOS E	57.0	1464.8	0.77	1.51	2.89	11.4

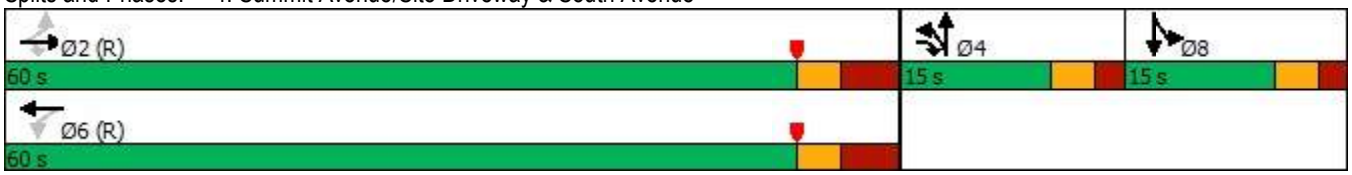
Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	657	46	11	509	74	185	45	39	66	5	23
Future Volume (vph)	56	657	46	11	509	74	185	45	39	66	5	23
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		65	0		0	60		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.981			0.930			0.876	
Flt Protected		0.996			0.999		0.950			0.950		
Satd. Flow (prot)	0	1965	1700	0	3749	0	1956	1953	0	1995	1840	0
Flt Permitted		0.909			0.940		0.950			0.950		
Satd. Flow (perm)	0	1793	1700	0	3528	0	1956	1953	0	1995	1840	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42		30			39			24	
Link Speed (mph)		25			30			25			30	
Link Distance (ft)		511			111			500			138	
Travel Time (s)		13.9			2.5			13.6			3.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	7%	5%	0%	5%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	58	684	48	11	530	77	193	47	41	69	5	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	742	48	0	618	0	193	88	0	69	29	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	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		56.9	74.9		56.9		10.0	10.0		8.5	8.5	
Actuated g/C Ratio		0.63	0.83		0.63		0.11	0.11		0.09	0.09	
v/c Ratio		0.65	0.03		0.28		0.89	0.35		0.37	0.15	
Control Delay		14.9	0.9		8.0		79.6	26.9		43.6	19.2	
Queue Delay		0.3	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		15.3	0.9		8.0		79.6	26.9		43.6	19.2	
LOS		B	A		A		E	C		D	B	
Approach Delay		14.4			8.0			63.1			36.4	
Approach LOS		B			A			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 21.1		Intersection LOS: C	
Intersection Capacity Utilization 81.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	742	48	618	193	88	69	29
v/c Ratio	0.65	0.03	0.28	0.89	0.35	0.37	0.15
Control Delay	14.9	0.9	8.0	79.6	26.9	43.6	19.2
Queue Delay	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	0.9	8.0	79.6	26.9	43.6	19.2
Queue Length 50th (ft)	259	1	75	110	26	38	3
Queue Length 95th (ft)	410	7	110	#233	70	78	28
Internal Link Dist (ft)	431		31		420		58
Turn Bay Length (ft)		65		60			
Base Capacity (vph)	1133	1422	2242	217	251	221	225
Starvation Cap Reductn	80	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.03	0.28	0.89	0.35	0.31	0.13

Intersection Summary

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	657	53	19	477	48	154
Future Volume (vph)	657	53	19	477	48	154
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.990				0.897	
Flt Protected				0.998	0.988	
Satd. Flow (prot)	1942	0	0	3799	1844	0
Flt Permitted				0.998	0.988	
Satd. Flow (perm)	1942	0	0	3799	1844	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	377			320	139	
Travel Time (s)	8.6			7.3	3.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	8%	0%	5%	4%	0%
Adj. Flow (vph)	699	56	20	507	51	164
Shared Lane Traffic (%)						
Lane Group Flow (vph)	755	0	0	527	215	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	657	53	19	477	48	154
Future Vol, veh/h	657	53	19	477	48	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	8	0	5	4	0
Mvmt Flow	699	56	20	507	51	164

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	755	0	1021	727
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	294	-
Critical Hdwy	-	-	4.1	-	6.66	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.2	-	3.538	3.3
Pot Cap-1 Maneuver	-	-	865	-	244	427
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	726	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	865	-	236	427
Mov Cap-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	703	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	29.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	358	-	-	865	-
HCM Lane V/C Ratio	0.6	-	-	0.023	-
HCM Control Delay (s)	29.1	-	-	9.3	0.1
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.7	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	47	757	492	91	19	25
Future Volume (vph)	47	757	492	91	19	25
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.977		0.922	
Flt Protected		0.997			0.979	
Satd. Flow (prot)	0	2000	3740	0	1843	0
Flt Permitted		0.997			0.979	
Satd. Flow (perm)	0	2000	3740	0	1843	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		320	446		143	
Travel Time (s)		7.3	10.1		3.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	5%	5%	0%	0%	5%
Bus Blockages (#/hr)	5	0	0	0	0	0
Adj. Flow (vph)	50	805	523	97	20	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	855	620	0	47	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	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	757	492	91	19	25
Future Vol, veh/h	47	757	492	91	19	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	5	5	0	0	5
Mvmt Flow	50	805	523	97	20	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	620	0	-	0	1477	310
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	905	-
Critical Hdwy	4.1	-	-	-	6.6	6.975
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3475
Pot Cap-1 Maneuver	970	-	-	-	129	679
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	398	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	970	-	-	-	117	679
Mov Cap-2 Maneuver	-	-	-	-	117	-
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	398	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	25.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	970	-	-	-	221
HCM Lane V/C Ratio	0.052	-	-	-	0.212
HCM Control Delay (s)	8.9	0	-	-	25.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	207	398	171	5	21	15	314	114	10	213	632	11
Future Volume (vph)	207	398	171	5	21	15	314	114	10	213	632	11
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954						0.850			0.997	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1900	3625	0	0	0	1900	2000	1700	0	1900	1994	0
Flt Permitted	0.402					0.379				0.129		
Satd. Flow (perm)	804	3625	0	0	0	758	2000	1700	0	258	1994	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		1						126			1	
Link Speed (mph)		30					35				25	
Link Distance (ft)		446					926				398	
Travel Time (s)		10.1					18.0				10.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	218	419	180	5	22	16	331	120	11	224	665	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	604	0	0	0	38	331	120	0	235	677	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Right	Left	Left	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	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	9	15	15		9	15	15		9
Number of Detectors	1	2			1	1	2	1	1	1	2	
Detector Template	Left	Thru			Left	Left	Thru	Right	Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100	20	20	20	100	
Trailing Detector (ft)	0	0			0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0			0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6			20	20	6	20	20	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	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	

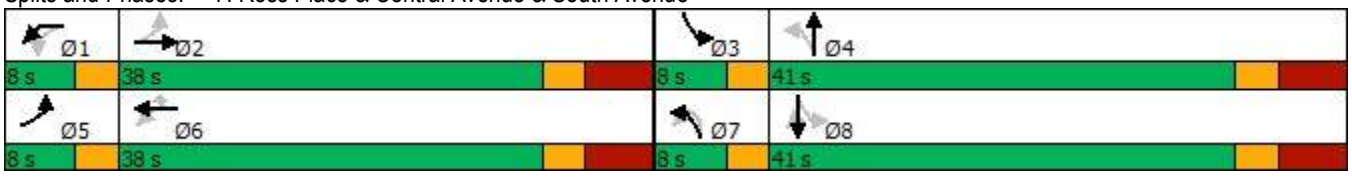


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	92	570	80	161
Future Volume (vph)	92	570	80	161
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1900	2000	1700	0
Flt Permitted	0.127			
Satd. Flow (perm)	254	2000	1700	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		792		
Travel Time (s)		21.6		
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%
Adj. Flow (vph)	97	600	84	169
Shared Lane Traffic (%)				
Lane Group Flow (vph)	97	600	253	0
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Left	Left	Right	Right
Median Width(ft)		12		
Link Offset(ft)		0		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	9
Number of Detectors	1	2	1	
Detector Template	Left	Thru	Right	
Leading Detector (ft)	20	100	20	
Trailing Detector (ft)	0	0	0	
Detector 1 Position(ft)	0	0	0	
Detector 1 Size(ft)	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel				
Detector 1 Extend (s)	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	
Detector 2 Position(ft)		94		
Detector 2 Size(ft)		6		
Detector 2 Type		Cl+Ex		
Detector 2 Channel				
Detector 2 Extend (s)		0.0		
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	38.1	30.2				36.8	26.7	26.7		41.6	32.7	
Actuated g/C Ratio	0.42	0.34				0.41	0.30	0.30		0.46	0.36	
v/c Ratio	0.54	0.49				0.10	0.56	0.20		1.11	0.93	
Control Delay	23.4	26.5				15.4	31.0	5.1		117.7	50.4	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Delay	23.4	26.5				15.4	31.0	5.1		117.7	50.4	
LOS	C	C				B	C	A		F	D	
Approach Delay		25.6					23.4				67.8	
Approach LOS		C					C				E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 89.7			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 39.6		Intersection LOS: D	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	40.9	30.8	30.8	
Actuated g/C Ratio	0.46	0.34	0.34	
v/c Ratio	0.47	0.87	0.38	
Control Delay	20.6	43.6	13.0	
Queue Delay	0.0	0.0	0.0	
Total Delay	20.6	43.6	13.0	
LOS	C	D	B	
Approach Delay		33.1		
Approach LOS		C		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	218	604	38	331	120	235	677	97	600	253
v/c Ratio	0.54	0.49	0.10	0.56	0.20	1.11	0.93	0.47	0.87	0.38
Control Delay	23.4	26.5	15.4	31.0	5.1	117.7	50.4	20.6	43.6	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	26.5	15.4	31.0	5.1	117.7	50.4	20.6	43.6	13.0
Queue Length 50th (ft)	79	155	12	162	0	~101	398	31	334	53
Queue Length 95th (ft)	128	210	30	248	35	#234	#635	58	#526	116
Internal Link Dist (ft)		366		846			318		712	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	402	1221	374	673	656	211	739	208	740	709
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	0.54	0.49	0.10	0.49	0.18	1.11	0.92	0.47	0.81	0.36

Intersection Summary

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

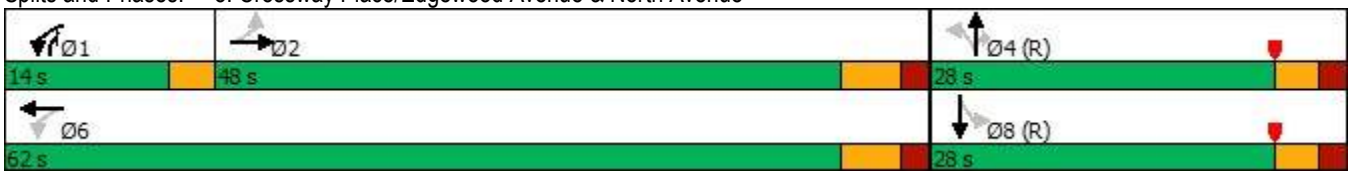
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

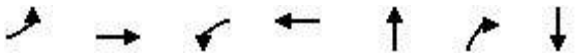
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	691	26	128	342	0	132	55	417	26	161	5
Future Volume (vph)	5	691	26	128	342	0	132	55	417	26	161	5
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995							0.850		0.997	
Flt Protected	0.950			0.950				0.966			0.993	
Satd. Flow (prot)	1900	1990	0	1900	2000	0	0	1932	1700	0	1980	0
Flt Permitted	0.546			0.146				0.585			0.940	
Satd. Flow (perm)	1092	1990	0	292	2000	0	0	1170	1700	0	1874	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							140		1	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	5	727	27	135	360	0	139	58	439	27	169	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	754	0	135	360	0	0	197	439	0	201	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	48.0	48.0		14.0	62.0		28.0	28.0	14.0	28.0	28.0	
Total Split (%)	53.3%	53.3%		15.6%	68.9%		31.1%	31.1%	15.6%	31.1%	31.1%	
Maximum Green (s)	42.0	42.0		11.0	56.0		23.0	23.0	11.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	44.9	44.9		59.0	56.0			23.0	36.1		23.0	
Actuated g/C Ratio	0.50	0.50		0.66	0.62			0.26	0.40		0.26	
v/c Ratio	0.01	0.76		0.40	0.29			0.66	0.57		0.42	
Control Delay	12.4	24.8		9.4	8.6			42.2	17.0		31.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	12.4	24.8		9.4	8.6			42.2	17.0		31.0	
LOS	B	C		A	A			D	B		C	
Approach Delay		24.8			8.8			24.8			31.0	
Approach LOS		C			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 21.6		Intersection LOS: C	
Intersection Capacity Utilization 79.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	754	135	360	197	439	201
v/c Ratio	0.01	0.76	0.40	0.29	0.66	0.57	0.42
Control Delay	12.4	24.8	9.4	8.6	42.2	17.0	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	24.8	9.4	8.6	42.2	17.0	31.0
Queue Length 50th (ft)	1	326	25	85	100	127	95
Queue Length 95th (ft)	7	#514	45	130	#191	208	159
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	545	994	387	1244	299	816	479
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.76	0.35	0.29	0.66	0.54	0.42

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	8	690	544	153	202	14
Future Volume (vph)	8	690	544	153	202	14
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	2018	1963	0	1918	1785
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	2018	1963	0	1918	1785
Link Speed (mph)		35	35		25	
Link Distance (ft)		178	387		163	
Travel Time (s)		3.5	7.5		4.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	4%	3%	4%	0%
Adj. Flow (vph)	8	719	567	159	210	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	727	726	0	210	15
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	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	690	544	153	202	14
Future Vol, veh/h	8	690	544	153	202	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	4	4	3	4	0
Mvmt Flow	8	719	567	159	210	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	726	0	-	0	1382	647
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	735	-
Critical Hdwy	4.1	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.2	-	-	-	3.536	3.3
Pot Cap-1 Maneuver	886	-	-	-	344	668
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	471	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	886	-	-	-	339	668
Mov Cap-2 Maneuver	-	-	-	-	339	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	471	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	30.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	886	-	-	-	339	668
HCM Lane V/C Ratio	0.009	-	-	-	0.621	0.022
HCM Control Delay (s)	9.1	0	-	-	31.5	10.5
HCM Lane LOS	A	A	-	-	D	B
HCM 95th %tile Q(veh)	0	-	-	-	3.9	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	176	179	0	46	44
Future Volume (vph)	0	176	179	0	46	44
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.934	
Flt Protected					0.975	
Satd. Flow (prot)	0	2079	2039	0	1855	0
Flt Permitted					0.975	
Satd. Flow (perm)	0	2079	2039	0	1855	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		108	163		170	
Travel Time (s)		2.9	4.4		4.6	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	1%	3%	0%	6%	0%
Adj. Flow (vph)	0	248	252	0	65	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	248	252	0	127	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	176	179	0	46	44
Future Vol, veh/h	0	176	179	0	46	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	0	1	3	0	6	0
Mvmt Flow	0	248	252	0	65	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	500	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	248	-
Critical Hdwy	-	-	-	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	-	-	3.554	3.3
Pot Cap-1 Maneuver	0	-	-	0	523	792
Stage 1	0	-	-	0	781	-
Stage 2	0	-	-	0	784	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	523	792
Mov Cap-2 Maneuver	-	-	-	-	523	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

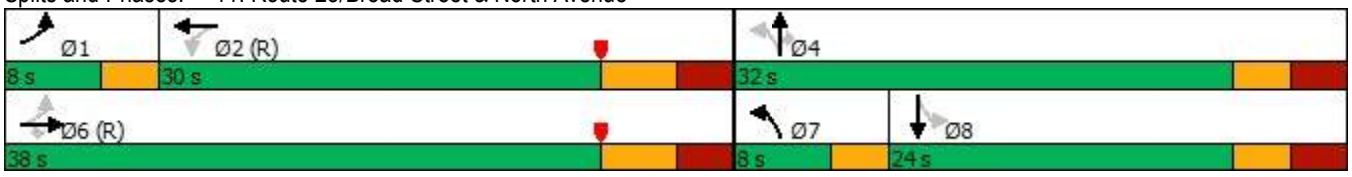
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	627
HCM Lane V/C Ratio	-	-	0.202
HCM Control Delay (s)	-	-	12.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	412	350	223	474	7	247	574	167	13	475	102
Future Volume (vph)	195	412	350	223	474	7	247	574	167	13	475	102
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.998				0.850		0.974	
Flt Protected	0.950				0.984		0.950				0.999	
Satd. Flow (prot)	1847	1509	1700	0	3758	0	1956	2039	1684	0	3714	0
Flt Permitted	0.233				0.710		0.219				0.822	
Satd. Flow (perm)	453	1509	1700	0	2711	0	451	2039	1684	0	3056	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			296		2						34	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		387			555			498			430	
Travel Time (s)		7.5			15.1			13.6			11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	6%	5%	5%	4%	0%	2%	3%	6%	0%	5%	3%
Adj. Flow (vph)	212	448	380	242	515	8	268	624	182	14	516	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	448	380	0	765	0	268	624	182	0	641	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	0.88	1.24	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	36.1	32.1	32.1		23.5		27.9	24.9	24.9		16.9	
Actuated g/C Ratio	0.52	0.46	0.46		0.34		0.40	0.36	0.36		0.24	
v/c Ratio	0.62	0.65	0.41		0.84		0.93	0.86	0.30		0.84	
Control Delay	19.6	20.5	4.7		32.8		59.2	34.6	17.5		35.0	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Delay	19.6	20.5	4.7		32.8		59.2	34.6	17.5		35.0	
LOS	B	C	A		C		E	C	B		D	
Approach Delay		14.6			32.8			37.8			35.0	
Approach LOS		B			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 29.4		Intersection LOS: C	
Intersection Capacity Utilization 107.8%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	212	448	380	765	268	624	182	641
v/c Ratio	0.62	0.65	0.41	0.84	0.93	0.86	0.30	0.84
Control Delay	19.6	20.5	4.7	32.8	59.2	34.6	17.5	35.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	20.5	4.7	32.8	59.2	34.6	17.5	35.0
Queue Length 50th (ft)	48	146	20	182	76	238	54	128
Queue Length 95th (ft)	#96	247	68	#271	#192	#411	99	#206
Internal Link Dist (ft)		307		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	344	691	938	911	287	757	625	811
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.65	0.41	0.84	0.93	0.82	0.29	0.79

Intersection Summary

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

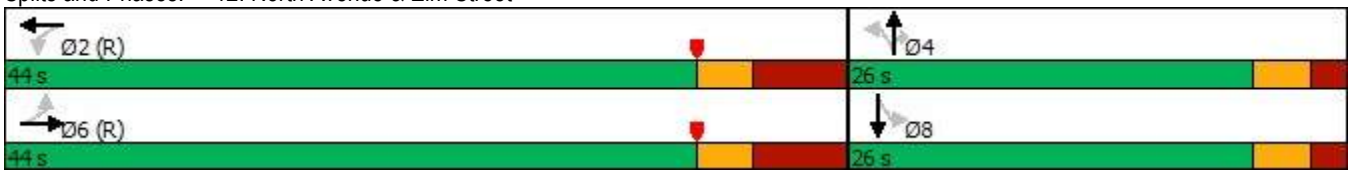
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	550	32	18	659	150	10	14	3	83	20	56
Future Volume (vph)	69	550	32	18	659	150	10	14	3	83	20	56
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.993			0.973				0.850		0.952	
Flt Protected		0.995			0.999			0.980			0.975	
Satd. Flow (prot)	0	3722	0	0	3723	0	0	1862	1700	0	1736	0
Flt Permitted		0.752			0.930			0.885			0.821	
Satd. Flow (perm)	0	2813	0	0	3466	0	0	1682	1700	0	1462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			56				78		40	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			460			167			176	
Travel Time (s)		4.4			12.5			3.8			4.0	
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 (%)	0%	7%	0%	0%	5%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	77	611	36	20	732	167	11	16	3	92	22	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	724	0	0	919	0	0	27	3	0	176	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	0.88	0.88	0.88	0.88	0.88	0.88	0.94	0.94	0.94	0.94	0.94	0.94
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	18.0	18.0		18.0	18.0		10.0	10.0	10.0	10.0	10.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Act Effct Green (s)		45.1			45.1			11.9	11.9		11.9	
Actuated g/C Ratio		0.64			0.64			0.17	0.17		0.17	
v/c Ratio		0.40			0.41			0.09	0.01		0.63	
Control Delay		10.2			7.8			22.8	0.0		29.8	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		10.2			7.8			22.8	0.0		29.8	
LOS		B			A			C	A		C	
Approach Delay		10.2			7.8			20.5			29.8	
Approach LOS		B			A			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 70.6% ICU Level of Service C
Analysis Period (min) 15
* User Entered Value

Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	724	919	27	3	176
v/c Ratio	0.40	0.41	0.09	0.01	0.63
Control Delay	10.2	7.8	22.8	0.0	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	7.8	22.8	0.0	29.8
Queue Length 50th (ft)	77	76	10	0	56
Queue Length 95th (ft)	m172	m146	28	0	108
Internal Link Dist (ft)	83	380	87		96
Turn Bay Length (ft)					
Base Capacity (vph)	1816	2253	504	564	466
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	0.40	0.41	0.05	0.01	0.38

Intersection Summary

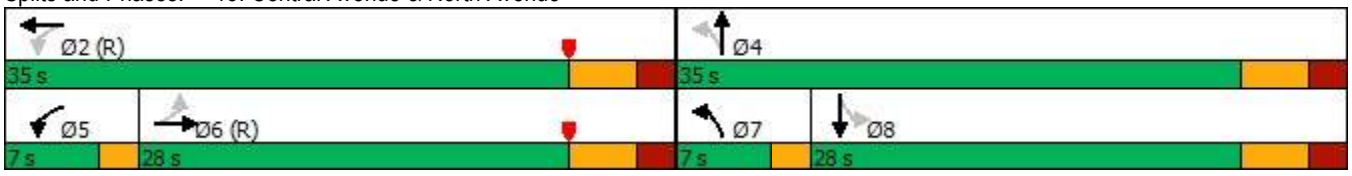
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	445	119	175	538	27	240	585	128	15	439	14
Future Volume (vph)	19	445	119	175	538	27	240	585	128	15	439	14
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.969			0.995			0.980			0.995	
Flt Protected		0.998			0.988			0.988			0.998	
Satd. Flow (prot)	0	3675	0	0	3736	0	0	3679	0	0	3773	0
Flt Permitted		0.913			0.613			0.660			0.904	
Satd. Flow (perm)	0	3362	0	0	2318	0	0	2458	0	0	3418	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					7			30				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		221			706			792			210	
Travel Time (s)		6.0			13.8			21.6			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	20	468	125	184	566	28	253	616	135	16	462	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	613	0	0	778	0	0	1004	0	0	493	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	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		5.0	10.0		4.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		22.4			29.5			29.3			22.3	
Actuated g/C Ratio		0.32			0.42			0.42			0.32	
v/c Ratio		0.57			0.77			0.94			0.45	
Control Delay		16.6			23.2			36.6			20.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		16.6			23.2			36.6			20.6	
LOS		B			C			D			C	
Approach Delay		16.6			23.2			36.6			20.6	
Approach LOS		B			C			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 89.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 13: Central Avenue & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	613	778	1004	493
v/c Ratio	0.57	0.77	0.94	0.45
Control Delay	16.6	23.2	36.6	20.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.6	23.2	36.6	20.6
Queue Length 50th (ft)	108	123	168	87
Queue Length 95th (ft)	68	170	#294	128
Internal Link Dist (ft)	141	626	712	130
Turn Bay Length (ft)				
Base Capacity (vph)	1075	1011	1074	1093
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	0.57	0.77	0.93	0.45

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	542	0	0	579	37	5	41	10	0	0	118
Future Volume (vph)	62	542	0	0	579	37	5	41	10	0	0	118
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992			0.975			0.865	
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1900	2000	0	0	1984	0	0	1942	0	0	1730	0
Flt Permitted	0.950							0.996				
Satd. Flow (perm)	1900	2000	0	0	1984	0	0	1942	0	0	1730	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	65	571	0	0	609	39	5	43	11	0	0	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	571	0	0	648	0	0	59	0	0	124	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			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
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	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

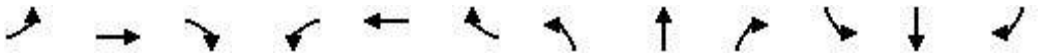
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	542	0	0	579	37	5	41	10	0	0	118
Future Vol, veh/h	62	542	0	0	579	37	5	41	10	0	0	118
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	65	571	0	0	609	39	5	43	11	0	0	124

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	648	0	-	-	-	0	1392	1349	571	1357	1330	629
Stage 1	-	-	-	-	-	-	701	701	-	629	629	-
Stage 2	-	-	-	-	-	-	691	648	-	728	701	-
Critical Hdwy	4.15	-	-	-	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	-	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	924	-	0	0	-	-	118	149	515	124	153	477
Stage 1	-	-	0	0	-	-	425	436	-	465	471	-
Stage 2	-	-	0	0	-	-	430	461	-	410	436	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	924	-	-	-	-	-	83	139	515	88	142	477
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	139	-	88	142	-
Stage 1	-	-	-	-	-	-	395	405	-	432	471	-
Stage 2	-	-	-	-	-	-	318	461	-	334	405	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	44.2	15.2
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	149	924	-	-	-	477
HCM Lane V/C Ratio	0.396	0.071	-	-	-	0.26
HCM Control Delay (s)	44.2	9.2	-	-	-	15.2
HCM Lane LOS	E	A	-	-	-	C
HCM 95th %tile Q(veh)	1.7	0.2	-	-	-	1

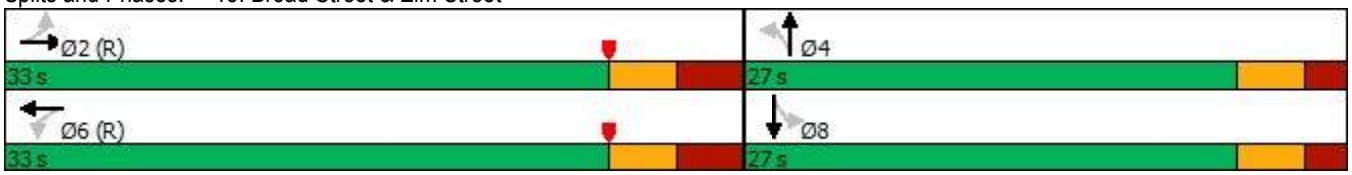


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	507	24	55	541	81	11	28	29	81	66	68
Future Volume (vph)	22	507	24	55	541	81	11	28	29	81	66	68
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.981			0.922			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1900	1986	0	1900	1962	0	1900	1844	0	1900	1846	0
Flt Permitted	0.368			0.427			0.667			0.718		
Satd. Flow (perm)	736	1986	0	854	1962	0	1334	1844	0	1436	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			16			31			72	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	23	534	25	58	569	85	12	29	31	85	69	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	559	0	58	654	0	12	60	0	85	141	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	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	43.3	43.3		43.3	43.3		9.3	9.3		9.3	9.3	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.16	0.16		0.16	0.16	
v/c Ratio	0.04	0.39		0.09	0.46		0.06	0.19		0.38	0.41	
Control Delay	4.6	5.8		4.1	6.7		20.7	14.0		27.2	15.6	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay	4.6	5.8		4.1	6.9		20.7	14.0		27.2	15.6	
LOS	A	A		A	A		C	B		C	B	
Approach Delay		5.8			6.7			15.1			20.0	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 61.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	559	58	654	12	60	85	141
v/c Ratio	0.04	0.39	0.09	0.46	0.06	0.19	0.38	0.41
Control Delay	4.6	5.8	4.1	6.7	20.7	14.0	27.2	15.6
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	4.6	5.8	4.1	6.9	20.7	14.0	27.2	15.6
Queue Length 50th (ft)	2	74	3	143	4	9	28	22
Queue Length 95th (ft)	10	155	21	239	15	34	60	61
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	531	1435	616	1421	489	695	526	722
Starvation Cap Reductn	0	0	0	258	0	0	0	0
Spillback Cap Reductn	0	71	0	0	0	9	5	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.41	0.09	0.56	0.02	0.09	0.16	0.20

Intersection Summary

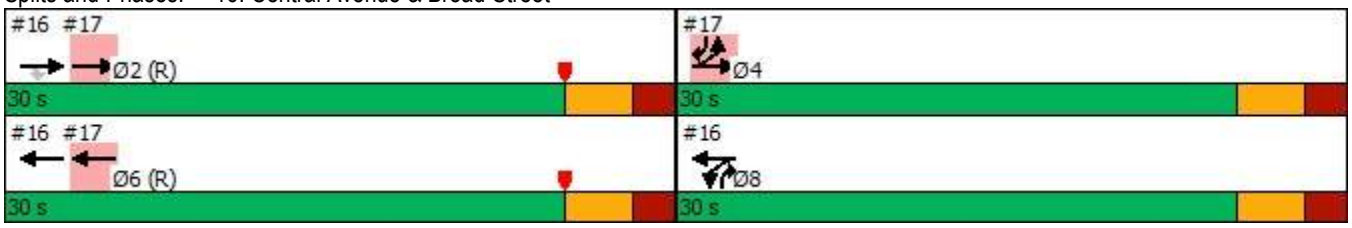


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	556	56	372	631	0	536		
Future Volume (vph)	556	56	372	631	0	536		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2000	1700	1900	2000	0	1730		
Flt Permitted			0.950					
Satd. Flow (perm)	2000	1700	1900	2000	0	1730		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		59				173		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	728			
Travel Time (s)	8.7			2.8	19.9			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%		
Adj. Flow (vph)	585	59	392	664	0	564		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	585	59	392	664	0	564		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	12			12	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88		
Turning Speed (mph)		9	15		15	9		
Number of Detectors	2	1	1	2		1		
Detector Template	Thru	Right	Left	Thru		Right		
Leading Detector (ft)	100	20	20	100		20		
Trailing Detector (ft)	0	0	0	0		0		
Detector 1 Position(ft)	0	0	0	0		0		
Detector 1 Size(ft)	6	20	20	6		20		
Detector 1 Type	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		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		
Detector 2 Position(ft)	94			94				
Detector 2 Size(ft)	6			6				
Detector 2 Type	Cl+Ex			Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)	0.0			0.0				
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0			5.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	24.0	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	25.3	25.3	24.7	60.0		24.7		
Actuated g/C Ratio	0.42	0.42	0.41	1.00		0.41		
v/c Ratio	0.69	0.08	0.50	0.33		0.69		
Control Delay	23.8	8.2	19.2	0.7		15.1		
Queue Delay	27.3	0.0	6.4	0.0		0.6		
Total Delay	51.2	8.2	25.7	0.7		15.7		
LOS	D	A	C	A		B		
Approach Delay	47.2			10.0	15.7			
Approach LOS	D			A	B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 25 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 22.0		Intersection LOS: C	
Intersection Capacity Utilization 64.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	585	59	392	664	564
v/c Ratio	0.69	0.08	0.50	0.33	0.69
Control Delay	23.8	8.2	19.2	0.7	15.1
Queue Delay	27.3	0.0	6.4	0.0	0.6
Total Delay	51.2	8.2	25.7	0.7	15.7
Queue Length 50th (ft)	204	2	121	2	106
Queue Length 95th (ft)	280	29	198	8	210
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	842	750	791	1976	821
Starvation Cap Reductn	148	0	340	0	0
Spillback Cap Reductn	274	0	0	101	63
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.03	0.08	0.87	0.35	0.74

Intersection Summary

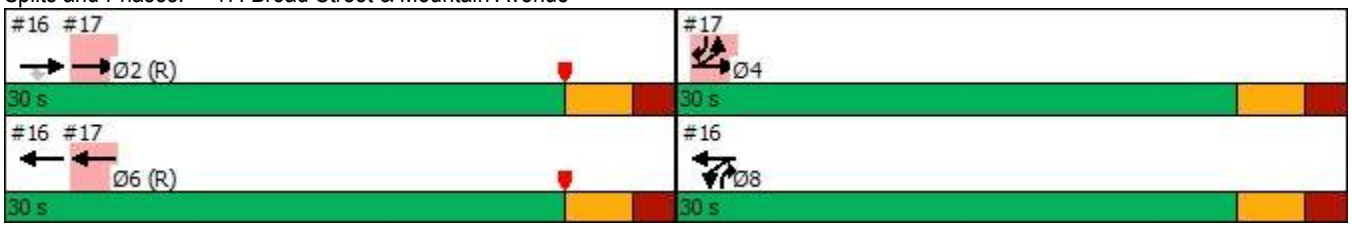


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	660	400	550	21	0	453		
Future Volume (vph)	660	400	550	21	0	453		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.995			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1900	2000	3781	0	0	2992		
Flt Permitted	0.950							
Satd. Flow (perm)	1900	2000	3781	0	0	2992		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			8			310		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	392		630			
Travel Time (s)		2.5	10.7		17.2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%		
Adj. Flow (vph)	695	421	579	22	0	477		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	695	421	601	0	0	477		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Left	Left	Right	Left	Right		
Median Width(ft)		12	12		0			
Link Offset(ft)		0	0		0			
Crosswalk Width(ft)		16	16		16			
Two way Left Turn Lane								
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88		
Turning Speed (mph)	15			9	15	9		
Number of Detectors	1	2	2			1		
Detector Template	Left	Thru	Thru			Right		
Leading Detector (ft)	20	100	100			20		
Trailing Detector (ft)	0	0	0			0		
Detector 1 Position(ft)	0	0	0			0		
Detector 1 Size(ft)	20	6	6			20		
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	0.0			0.0		
Detector 2 Position(ft)		94	94					
Detector 2 Size(ft)		6	6					
Detector 2 Type		Cl+Ex	Cl+Ex					
Detector 2 Channel								
Detector 2 Extend (s)		0.0	0.0					
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	5.0
Minimum Split (s)	24.0		30.0			24.0	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.0		25.0			25.0	25.0	25.0
Yellow Time (s)	3.0		3.0			3.0	3.0	3.0
All-Red Time (s)	2.0		2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	5.0		5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	24.7	60.0	25.3			24.7		
Actuated g/C Ratio	0.41	1.00	0.42			0.41		
v/c Ratio	0.89	0.21	0.38			0.34		
Control Delay	29.8	0.2	12.7			4.9		
Queue Delay	49.6	0.0	0.9			0.1		
Total Delay	79.4	0.2	13.6			5.0		
LOS	E	A	B			A		
Approach Delay		49.5	13.6		5.0			
Approach LOS		D	B		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 25 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 30.0		Intersection LOS: C	
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	695	421	601	477
v/c Ratio	0.89	0.21	0.38	0.34
Control Delay	29.8	0.2	12.7	4.9
Queue Delay	49.6	0.0	0.9	0.1
Total Delay	79.4	0.2	13.6	5.0
Queue Length 50th (ft)	230	0	74	20
Queue Length 95th (ft)	#417	m0	110	48
Internal Link Dist (ft)		13	312	
Turn Bay Length (ft)				150
Base Capacity (vph)	791	1976	1598	1427
Starvation Cap Reductn	251	0	0	0
Spillback Cap Reductn	0	0	674	195
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.29	0.21	0.65	0.39

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	695	512	0	0	18
Future Volume (vph)	0	695	512	0	0	18
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	2000	3800	0	0	1730
Flt Permitted						
Satd. Flow (perm)	0	2000	3800	0	0	1730
Link Speed (mph)		30	30		30	
Link Distance (ft)		111	377		115	
Travel Time (s)		2.5	8.6		2.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	732	539	0	0	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	732	539	0	0	19
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.4%		ICU Level of Service A	
Analysis Period (min) 15			

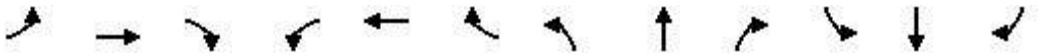
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			↱
Traffic Vol, veh/h	0	695	512	0	0	18
Future Vol, veh/h	0	695	512	0	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	732	539	0	0	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	270
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.975
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3475
Pot Cap-1 Maneuver	0	-	-	0	0	721
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	721
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	721
HCM Lane V/C Ratio	-	-	0.026
HCM Control Delay (s)	-	-	10.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	731	13	44	716	0	5	0	19	0	0	0
Future Volume (vph)	0	731	13	44	716	0	5	0	19	0	0	0
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
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		0.998						0.892				
Flt Protected					0.997			0.990				
Satd. Flow (prot)	0	1996	0	0	1994	0	0	1766	0	0	2059	0
Flt Permitted					0.997			0.990				
Satd. Flow (perm)	0	1996	0	0	1994	0	0	1766	0	0	2059	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		464			455			250			238	
Travel Time (s)		9.0			8.9			6.8			6.5	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	5%	5%	5%	2%	5%	2%	5%	2%	2%	2%
Adj. Flow (vph)	0	769	14	46	754	0	5	0	20	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	783	0	0	800	0	0	25	0	0	0	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	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
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 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	731	13	44	716	0	5	0	19	0	0	0
Future Vol, veh/h	0	731	13	44	716	0	5	0	19	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	5	5	5	2	5	2	5	2	2	2
Mvmt Flow	0	769	14	46	754	0	5	0	20	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	754	0	0	783	0	0	1622	1622	776	1632	1629	754
Stage 1	-	-	-	-	-	-	776	776	-	846	846	-
Stage 2	-	-	-	-	-	-	846	846	-	786	783	-
Critical Hdwy	4.12	-	-	4.15	-	-	7.15	6.52	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.245	-	-	3.545	4.018	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	856	-	-	822	-	-	81	103	393	81	102	409
Stage 1	-	-	-	-	-	-	386	407	-	357	378	-
Stage 2	-	-	-	-	-	-	353	378	-	385	404	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	822	-	-	75	93	393	71	92	409
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	93	-	71	92	-
Stage 1	-	-	-	-	-	-	386	407	-	357	342	-
Stage 2	-	-	-	-	-	-	319	342	-	365	404	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	24.6	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	209	856	-	-	822	-	-	-
HCM Lane V/C Ratio	0.121	-	-	-	0.056	-	-	-
HCM Control Delay (s)	24.6	0	-	-	9.6	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.2	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	715	20	51	755	8	22
Future Volume (vph)	715	20	51	755	8	22
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.900	
Flt Protected				0.997	0.987	
Satd. Flow (prot)	1992	0	0	1994	1777	0
Flt Permitted				0.997	0.987	
Satd. Flow (perm)	1992	0	0	1994	1777	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	455			178	232	
Travel Time (s)	8.9			3.5	5.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	753	21	54	795	8	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	774	0	0	849	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.8%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	715	20	51	755	8	22
Future Vol, veh/h	715	20	51	755	8	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	753	21	54	795	8	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	774	0	1667	764
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	903	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	828	-	104	399
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	391	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	828	-	92	399
Mov Cap-2 Maneuver	-	-	-	-	92	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	345	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	25
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	211	-	-	828	-
HCM Lane V/C Ratio	0.15	-	-	0.065	-
HCM Control Delay (s)	25	-	-	9.6	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	0	0	2	85
Future Volume (vph)	4	0	0	0	2	85
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					0.999
Satd. Flow (prot)	1956	0	0	0	0	2057
Flt Permitted	0.950					0.999
Satd. Flow (perm)	1956	0	0	0	0	2057
Link Speed (mph)	25		25			25
Link Distance (ft)	217		170			331
Travel Time (s)	5.9		4.6			9.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	0	0	0	2	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	0	0	94
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	0	0	2	85
Future Vol, veh/h	4	0	0	0	2	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	0	0	2	92

Major/Minor	Minor1		Major2	
Conflicting Flow All	96	-	0	0
Stage 1	0	-	-	-
Stage 2	96	-	-	-
Critical Hdwy	6.42	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	-	2.218	-
Pot Cap-1 Maneuver	903	0	-	-
Stage 1	-	0	-	-
Stage 2	928	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	903	-	-	-
Mov Cap-2 Maneuver	903	-	-	-
Stage 1	-	-	-	-
Stage 2	928	-	-	-

Approach	WB	SB
HCM Control Delay, s	9	
HCM LOS	A	

Minor Lane/Major Mvmt	WBLn1	SBL	SBT
Capacity (veh/h)	903	-	-
HCM Lane V/C Ratio	0.005	-	-
HCM Control Delay (s)	9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	198	0	2	160	0	4
Future Volume (vph)	198	0	2	160	0	4
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.999		
Satd. Flow (prot)	2059	0	0	2057	1781	0
Flt Permitted				0.999		
Satd. Flow (perm)	2059	0	0	2057	1781	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	373			108	127	
Travel Time (s)	10.2			2.9	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	0	2	174	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	215	0	0	176	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	198	0	2	160	0	4
Future Vol, veh/h	198	0	2	160	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	215	0	2	174	0	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	215	0	393	215
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1355	-	611	825
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1355	-	610	825
Mov Cap-2 Maneuver	-	-	-	-	610	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	851	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	-	-	1355	-
HCM Lane V/C Ratio	0.005	-	-	0.002	-
HCM Control Delay (s)	9.4	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	583	0	0	726	0	8
Future Volume (vph)	583	0	0	726	0	8
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3912	0	0	3912	0	1781
Flt Permitted						
Satd. Flow (perm)	3912	0	0	3912	0	1781
Link Speed (mph)	25			25	25	
Link Distance (ft)	460			221	131	
Travel Time (s)	12.5			6.0	3.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	634	0	0	789	0	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	634	0	0	789	0	9
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	583	0	0	726	0	8
Future Vol, veh/h	583	0	0	726	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	634	0	0	789	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	317
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	679
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	679
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	679	-	-	-
HCM Lane V/C Ratio	0.013	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

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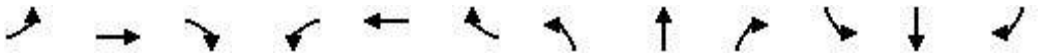
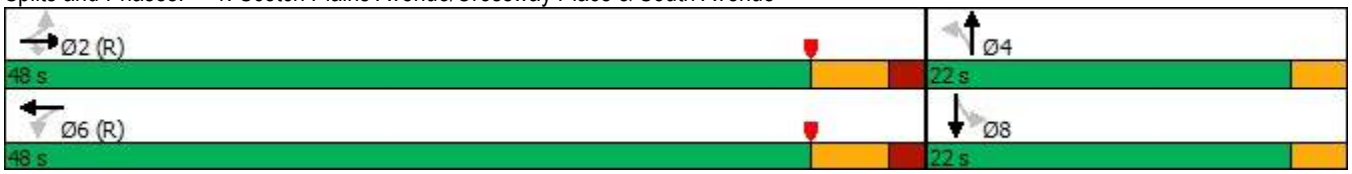


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	291	56	31	302	91	36	211	15	50	235	145
Future Volume (vph)	81	291	56	31	302	91	36	211	15	50	235	145
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.971			0.990			0.943	
Flt Protected		0.989			0.996		0.950			0.950		
Satd. Flow (prot)	0	2036	1750	0	1991	0	1956	2038	0	1956	1941	0
Flt Permitted		0.831			0.955		0.237			0.427		
Satd. Flow (perm)	0	1711	1750	0	1909	0	488	2038	0	879	1941	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			59		35			5			44	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	85	306	59	33	318	96	38	222	16	53	247	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	391	59	0	447	0	38	238	0	53	400	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		44.1	44.1		44.1		16.9	16.9		16.9	16.9	
Actuated g/C Ratio		0.63	0.63		0.63		0.24	0.24		0.24	0.24	
v/c Ratio		0.36	0.05		0.37		0.32	0.48		0.25	0.80	
Control Delay		11.8	4.6		7.2		29.1	25.2		23.7	34.8	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.8	4.6		7.2		29.1	25.2		23.7	34.8	
LOS		B	A		A		C	C		C	C	
Approach Delay		10.9			7.2			25.8			33.5	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	391	59	447	38	238	53	400
v/c Ratio	0.36	0.05	0.37	0.32	0.48	0.25	0.80
Control Delay	11.8	4.6	7.2	29.1	25.2	23.7	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	4.6	7.2	29.1	25.2	23.7	34.8
Queue Length 50th (ft)	127	5	80	13	82	18	138
Queue Length 95th (ft)	206	m15	132	39	143	46	#241
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	1077	1124	1215	132	556	238	558
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.05	0.37	0.29	0.43	0.22	0.72

Intersection Summary

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

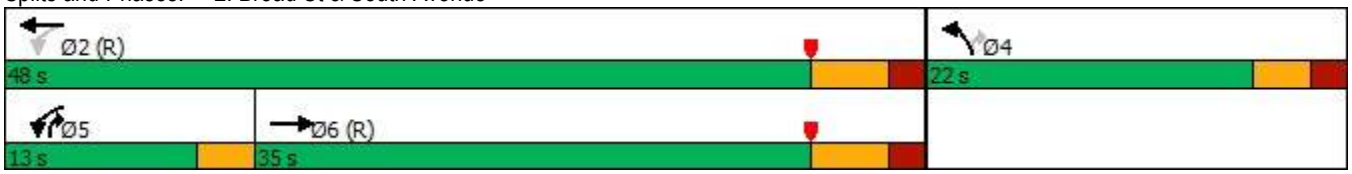
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	290	112	694	466	195	412
Future Volume (vph)	290	112	694	466	195	412
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.962					0.850
Flt Protected				0.971	0.950	
Satd. Flow (prot)	1981	0	0	3798	1956	1750
Flt Permitted				0.583	0.950	
Satd. Flow (perm)	1981	0	0	2281	1956	1750
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	305	118	731	491	205	434
Shared Lane Traffic (%)						
Lane Group Flow (vph)	423	0	0	1222	205	434
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	9.0		10.0	9.0	7.0	10.0
Minimum Split (s)	35.0		13.0	35.0	22.0	13.0
Total Split (s)	35.0		13.0	48.0	22.0	13.0
Total Split (%)	50.0%		18.6%	68.6%	31.4%	18.6%
Maximum Green (s)	29.0		10.0	42.0	17.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	9.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	34.2			47.4	11.6	26.8
Actuated g/C Ratio	0.49			0.68	0.17	0.38
v/c Ratio	0.44			1.08dl	0.63	0.65
Control Delay	14.4			9.6	35.5	22.2
Queue Delay	0.0			0.0	0.0	0.0

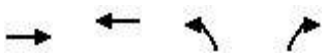
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	14.4			9.6	35.5	22.2
LOS	B			A	D	C
Approach Delay	14.4			9.6	26.5	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 78.7%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Broad St & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	423	1222	205	434
v/c Ratio	0.44	1.08dl	0.63	0.65
Control Delay	14.4	9.6	35.5	22.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.4	9.6	35.5	22.2
Queue Length 50th (ft)	111	110	83	149
Queue Length 95th (ft)	209	186	135	209
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	967	1698	475	670
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	0.44	0.72	0.43	0.65

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

MOVEMENT SUMMARY

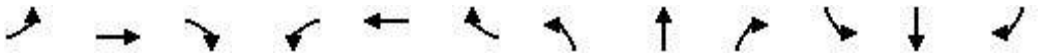
Site: 101 [Westfield RAB_Existing_PM (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	14	0.0	15	0.0	0.454	9.5	LOS A	2.8	70.3	0.64	0.69	0.80	24.4
6	T1	382	2.0	390	2.0	0.454	9.6	LOS A	2.8	70.3	0.64	0.69	0.80	22.8
16	R2	308	3.0	314	3.0	0.454	8.0	LOS A	2.8	70.3	0.59	0.56	0.59	23.6
Approach		704	2.4	719	2.4	0.454	8.9	LOS A	2.8	70.3	0.62	0.63	0.71	23.2
North: SB - SR 28														
7	L2	440	2.0	449	2.0	0.455	9.0	LOS A	2.6	66.6	0.58	0.57	0.67	22.0
14	R2	521	2.0	532	2.0	0.539	10.5	LOS B	4.2	106.8	0.63	0.70	0.89	18.8
Approach		961	2.0	981	2.0	0.539	9.8	LOS A	4.2	106.8	0.61	0.64	0.79	20.5
West: EB - South Ave														
5u	U	2	0.0	2	0.0	0.855	25.7	LOS D	18.4	466.7	0.97	1.55	2.46	11.6
5	L2	476	1.0	486	1.0	0.855	25.7	LOS D	18.4	466.7	0.97	1.55	2.46	11.8
2	T1	391	3.0	399	3.0	0.855	21.6	LOS C	18.4	466.7	0.87	1.31	2.07	17.1
Approach		869	1.9	887	1.9	0.855	23.9	LOS C	18.4	466.7	0.92	1.44	2.28	14.0
All Vehicles		2534	2.1	2586	2.1	0.855	14.4	LOS B	18.4	466.7	0.72	0.91	1.28	18.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

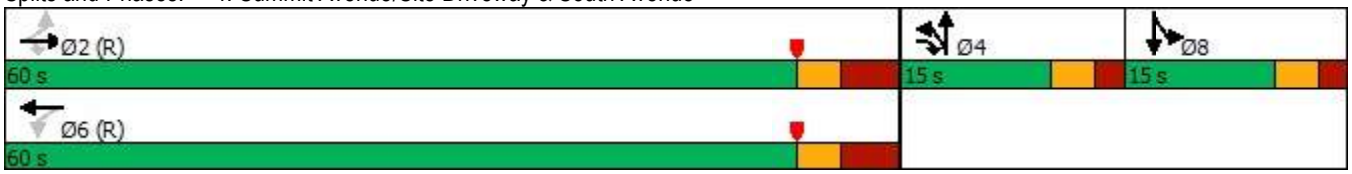


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	636	55	28	627	57	101	23	43	131	21	91
Future Volume (vph)	34	636	55	28	627	57	101	23	43	131	21	91
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	0		70	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.988			0.902			0.878	
Flt Protected		0.997			0.998		0.950			0.950		
Satd. Flow (prot)	0	2050	1785	0	3866	0	1956	1894	0	1995	1814	0
Flt Permitted		0.938			0.908		0.950			0.950		
Satd. Flow (perm)	0	1928	1785	0	3517	0	1956	1894	0	1995	1814	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			57		17			45			95	
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		511			156			500			138	
Travel Time (s)		13.9			3.5			13.6			3.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	2%	0%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Adj. Flow (vph)	35	663	57	29	653	59	105	24	45	136	22	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	698	57	0	741	0	105	69	0	136	117	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		56.8	73.0		56.8		9.1	9.1		9.4	9.4	
Actuated g/C Ratio		0.63	0.81		0.63		0.10	0.10		0.10	0.10	
v/c Ratio		0.57	0.04		0.33		0.53	0.30		0.65	0.43	
Control Delay		13.1	0.7		8.9		48.3	21.1		53.9	16.9	
Queue Delay		0.3	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		13.4	0.7		8.9		48.3	21.1		53.9	16.9	
LOS		B	A		A		D	C		D	B	
Approach Delay		12.5			8.9			37.6			36.8	
Approach LOS		B			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 16.6		Intersection LOS: B	
Intersection Capacity Utilization 78.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	698	57	741	105	69	136	117
v/c Ratio	0.57	0.04	0.33	0.53	0.30	0.65	0.43
Control Delay	13.1	0.7	8.9	48.3	21.1	53.9	16.9
Queue Delay	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	0.7	8.9	48.3	21.1	53.9	16.9
Queue Length 50th (ft)	235	0	103	57	12	75	12
Queue Length 95th (ft)	346	7	138	109	51	#144	61
Internal Link Dist (ft)	431		76		420		58
Turn Bay Length (ft)							
Base Capacity (vph)	1217	1474	2227	217	250	221	286
Starvation Cap Reductn	135	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.04	0.33	0.48	0.28	0.62	0.41

Intersection Summary

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	716	47	29	585	35	89
Future Volume (vph)	716	47	29	585	35	89
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.992				0.903	
Flt Protected				0.998	0.986	
Satd. Flow (prot)	2045	0	0	3902	1856	0
Flt Permitted				0.998	0.986	
Satd. Flow (perm)	2045	0	0	3902	1856	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	339			279	211	
Travel Time (s)	7.7			6.3	4.8	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	3%	2%	0%	1%
Adj. Flow (vph)	723	47	29	591	35	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	770	0	0	620	125	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	716	47	29	585	35	89
Future Vol, veh/h	716	47	29	585	35	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	0	3	2	0	1
Mvmt Flow	723	47	29	591	35	90

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	770	0	1101	747
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	354	-
Critical Hdwy	-	-	4.145	-	6.6	6.215
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2285	-	3.5	3.3095
Pot Cap-1 Maneuver	-	-	837	-	223	414
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	837	-	211	414
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	22.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	326	-	-	837	-
HCM Lane V/C Ratio	0.384	-	-	0.035	-
HCM Control Delay (s)	22.8	-	-	9.5	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.8	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	17	731	564	40	61	56
Future Volume (vph)	17	731	564	40	61	56
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.990		0.935	
Flt Protected		0.999			0.975	
Satd. Flow (prot)	0	2058	3878	0	1914	0
Flt Permitted		0.999			0.975	
Satd. Flow (perm)	0	2058	3878	0	1914	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		279	494		163	
Travel Time (s)		6.3	11.2		4.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	18	754	581	41	63	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	772	622	0	121	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	731	564	40	61	56
Future Vol, veh/h	17	731	564	40	61	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	18	754	581	41	63	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	622	0	-	0	1392	311
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	790	-
Critical Hdwy	4.1	-	-	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	969	-	-	-	146	691
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	451	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	969	-	-	-	141	691
Mov Cap-2 Maneuver	-	-	-	-	141	-
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	451	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	37.2
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	969	-	-	-	228
HCM Lane V/C Ratio	0.018	-	-	-	0.529
HCM Control Delay (s)	8.8	0	-	-	37.2
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	2.8

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	204	494	253	5	51	30	430	191	5	193	586	32
Future Volume (vph)	204	494	253	5	51	30	430	191	5	193	586	32
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949						0.850			0.992	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1956	3712	0	0	0	1956	2059	1750	0	1956	2042	0
Flt Permitted	0.257					0.233				0.125		
Satd. Flow (perm)	529	3712	0	0	0	480	2059	1750	0	257	2042	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		1						138			3	
Link Speed (mph)		30					30				25	
Link Distance (ft)		494					926				398	
Travel Time (s)		11.2					21.0				10.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	215	520	266	5	54	32	453	201	5	203	617	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	791	0	0	0	86	453	201	0	208	651	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	39.0	30.1				38.3	28.3	28.3		42.1	32.1	
Actuated g/C Ratio	0.42	0.33				0.41	0.31	0.31		0.46	0.35	
v/c Ratio	0.72	0.65				0.31	0.72	0.32		1.00	0.92	
Control Delay	33.7	30.4				18.0	36.1	10.2		84.4	49.1	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

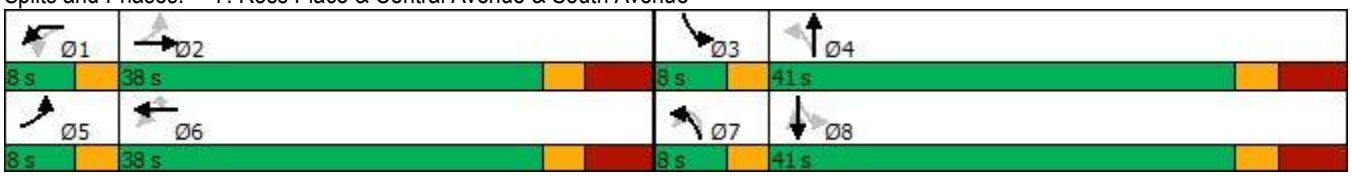


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	176	636	85	178
Future Volume (vph)	176	636	85	178
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1956	2059	1750	0
Flt Permitted	0.125			
Satd. Flow (perm)	257	2059	1750	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		809		
Travel Time (s)		22.1		
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%
Adj. Flow (vph)	185	669	89	187
Shared Lane Traffic (%)				
Lane Group Flow (vph)	185	669	276	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	42.1	32.1	32.1	
Actuated g/C Ratio	0.46	0.35	0.35	
v/c Ratio	0.89	0.94	0.40	
Control Delay	59.0	52.3	14.3	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	33.7	30.4				18.0	36.1	10.2		84.4	49.1	
LOS	C	C				B	D	B		F	D	
Approach Delay		31.1					26.9				57.6	
Approach LOS		C					C				E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 92.5			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 40.3		Intersection LOS: D	
Intersection Capacity Utilization 90.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	59.0	52.3	14.3	
LOS	E	D	B	
Approach Delay		44.1		
Approach LOS		D		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	215	791	86	453	201	208	651	185	669	276
v/c Ratio	0.72	0.65	0.31	0.72	0.32	1.00	0.92	0.89	0.94	0.40
Control Delay	33.7	30.4	18.0	36.1	10.2	84.4	49.1	59.0	52.3	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	30.4	18.0	36.1	10.2	84.4	49.1	59.0	52.3	14.3
Queue Length 50th (ft)	77	216	29	238	27	~71	370	61	385	64
Queue Length 95th (ft)	#146	282	56	349	79	#209	#586	#172	#608	131
Internal Link Dist (ft)		414		846			318		729	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	300	1208	278	670	662	208	733	208	737	707
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	0.72	0.65	0.31	0.68	0.30	1.00	0.89	0.89	0.91	0.39

Intersection Summary

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

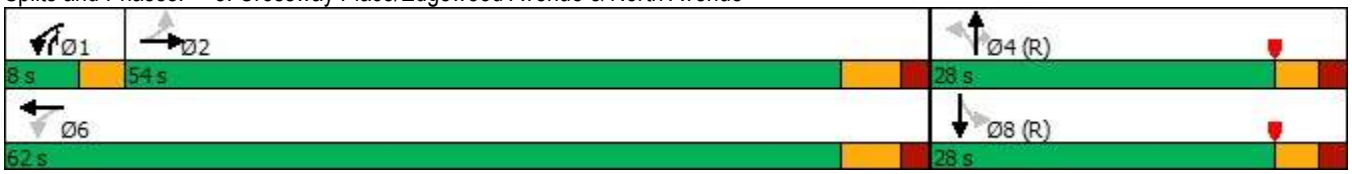
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

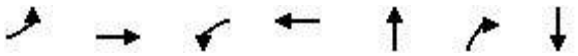
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	595	41	365	684	5	92	60	227	10	35	15
Future Volume (vph)	5	595	41	365	684	5	92	60	227	10	35	15
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.999				0.850		0.966	
Flt Protected	0.950			0.950				0.971			0.991	
Satd. Flow (prot)	1956	2038	0	1956	2057	0	0	1999	1750	0	1971	0
Flt Permitted	0.317			0.235				0.782			0.948	
Satd. Flow (perm)	653	2038	0	484	2057	0	0	1610	1750	0	1885	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			1				236		16	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	5	626	43	384	720	5	97	63	239	11	37	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	669	0	384	725	0	0	160	239	0	64	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	54.0	54.0		8.0	62.0		28.0	28.0	8.0	28.0	28.0	
Total Split (%)	60.0%	60.0%		8.9%	68.9%		31.1%	31.1%	8.9%	31.1%	31.1%	
Maximum Green (s)	48.0	48.0		5.0	56.0		23.0	23.0	5.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		59.0	56.0			23.0	33.0		23.0	
Actuated g/C Ratio	0.53	0.53		0.66	0.62			0.26	0.37		0.26	
v/c Ratio	0.01	0.61		0.96	0.57			0.39	0.30		0.13	
Control Delay	10.2	17.5		50.3	12.1			31.1	4.0		21.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.2	17.5		50.3	12.1			31.1	4.0		21.4	
LOS	B	B		D	B			C	A		C	
Approach Delay		17.4			25.3			14.9			21.4	
Approach LOS		B			C			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 21.0		Intersection LOS: C	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	669	384	725	160	239	64
v/c Ratio	0.01	0.61	0.96	0.57	0.39	0.30	0.13
Control Delay	10.2	17.5	50.3	12.1	31.1	4.0	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	17.5	50.3	12.1	31.1	4.0	21.4
Queue Length 50th (ft)	1	247	83	218	75	1	21
Queue Length 95th (ft)	7	357	#216	314	133	47	52
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	348	1089	399	1280	411	791	493
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.61	0.96	0.57	0.39	0.30	0.13

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	548	681	147	231	36
Future Volume (vph)	6	548	681	147	231	36
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.976			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	2057	2009	0	1956	1750
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	2057	2009	0	1956	1750
Link Speed (mph)		35	35		25	
Link Distance (ft)		175	395		156	
Travel Time (s)		3.4	7.7		4.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	596	740	160	251	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	603	900	0	251	39
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	548	681	147	231	36
Future Vol, veh/h	6	548	681	147	231	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	596	740	160	251	39

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	900	0	-	0	1430	820
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	610	-
Critical Hdwy	4.12	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	755	-	-	-	331	581
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	755	-	-	-	326	581
Mov Cap-2 Maneuver	-	-	-	-	326	-
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	542	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	40.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	755	-	-	-	326	581
HCM Lane V/C Ratio	0.009	-	-	-	0.77	0.067
HCM Control Delay (s)	9.8	0	-	-	45	11.6
HCM Lane LOS	A	A	-	-	E	B
HCM 95th %tile Q(veh)	0	-	-	-	6.1	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	190	199	0	53	39
Future Volume (vph)	0	190	199	0	53	39
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.943	
Flt Protected					0.972	
Satd. Flow (prot)	0	2079	2059	0	1925	0
Flt Permitted					0.972	
Satd. Flow (perm)	0	2079	2059	0	1925	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		92	156		271	
Travel Time (s)		2.5	4.3		7.4	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	0	226	237	0	63	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	226	237	0	109	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	190	199	0	53	39
Future Vol, veh/h	0	190	199	0	53	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	226	237	0	63	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	463	237
Stage 1	-	-	-	-	237	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	561	807
Stage 1	0	-	-	0	807	-
Stage 2	0	-	-	0	816	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	561	807
Mov Cap-2 Maneuver	-	-	-	-	561	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

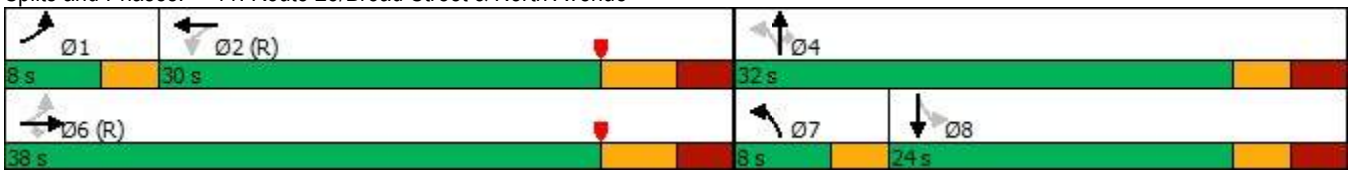
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	644
HCM Lane V/C Ratio	-	-	0.17
HCM Control Delay (s)	-	-	11.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	393	393	240	528	10	281	506	169	35	439	136
Future Volume (vph)	165	393	393	240	528	10	281	506	169	35	439	136
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.998				0.850		0.966	
Flt Protected	0.950				0.985		0.950				0.997	
Satd. Flow (prot)	1956	1538	1750	0	3809	0	1956	2059	1785	0	3721	0
Flt Permitted	0.212				0.724		0.220				0.829	
Satd. Flow (perm)	436	1538	1750	0	2800	0	453	2059	1785	0	3094	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			318		2						51	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		395			555			498			430	
Travel Time (s)		7.7			15.1			13.6			11.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	3%	3%	0%	2%	2%	0%	0%	3%	5%
Adj. Flow (vph)	172	409	409	250	550	10	293	527	176	36	457	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	409	409	0	810	0	293	527	176	0	635	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	36.3	32.3	32.3		23.7		27.7	24.7	24.7		16.7	
Actuated g/C Ratio	0.52	0.46	0.46		0.34		0.40	0.35	0.35		0.24	
v/c Ratio	0.50	0.58	0.42		0.85		1.02	0.72	0.28		0.82	
Control Delay	14.9	18.4	4.7		29.2		80.9	26.1	17.2		32.6	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	14.9	18.4	4.7		29.2		80.9	26.1	17.2		32.6	
LOS	B	B	A		C		F	C	B		C	
Approach Delay		12.2			29.2			40.6			32.6	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 28.2		Intersection LOS: C	
Intersection Capacity Utilization 106.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	172	409	409	810	293	527	176	635
v/c Ratio	0.50	0.58	0.42	0.85	1.02	0.72	0.28	0.82
Control Delay	14.9	18.4	4.7	29.2	80.9	26.1	17.2	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	18.4	4.7	29.2	80.9	26.1	17.2	32.6
Queue Length 50th (ft)	38	128	22	195	84	187	52	122
Queue Length 95th (ft)	70	216	72	#289	#222	291	95	#182
Internal Link Dist (ft)		315		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	345	708	978	951	287	764	663	833
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.58	0.42	0.85	1.02	0.69	0.27	0.76

Intersection Summary

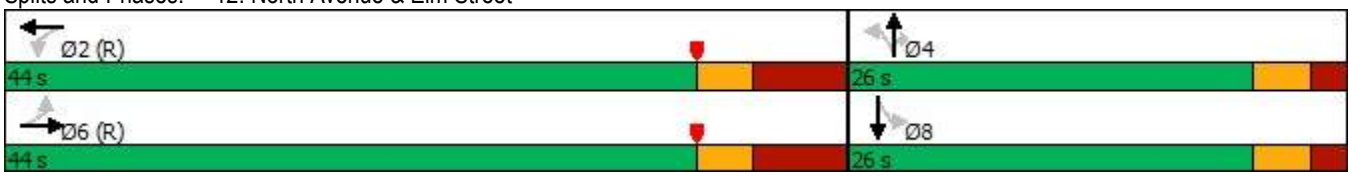
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	497	33	40	730	163	35	28	17	105	26	174
Future Volume (vph)	66	497	33	40	730	163	35	28	17	105	26	174
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.992			0.974				0.850		0.923	
Flt Protected		0.994			0.998			0.973			0.983	
Satd. Flow (prot)	0	3838	0	0	3790	0	0	1849	1700	0	1695	0
Flt Permitted		0.724			0.896			0.767			0.860	
Satd. Flow (perm)	0	2796	0	0	3402	0	0	1457	1700	0	1483	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			53				78		98	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			479			193			176	
Travel Time (s)		4.4			13.1			4.4			4.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	69	518	34	42	760	170	36	29	18	109	27	181
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	621	0	0	972	0	0	65	18	0	317	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		26.0	26.0	26.0	26.0	26.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	160	160		160	160		160	160	160	160	160	
Act Effct Green (s)		36.0			36.0			21.0	21.0		21.0	
Actuated g/C Ratio		0.51			0.51			0.30	0.30		0.30	
v/c Ratio		0.43			0.55			0.15	0.03		0.62	
Control Delay		13.3			14.1			19.1	0.1		20.4	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		13.3			14.1			19.1	0.1		20.4	
LOS		B			B			B	A		C	
Approach Delay		13.3			14.1			15.0			20.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 80.3%		ICU Level of Service D	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	621	972	65	18	317
v/c Ratio	0.43	0.55	0.15	0.03	0.62
Control Delay	13.3	14.1	19.1	0.1	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	14.1	19.1	0.1	20.4
Queue Length 50th (ft)	91	136	21	0	82
Queue Length 95th (ft)	m97	m130	50	0	167
Internal Link Dist (ft)	83	399	113		96
Turn Bay Length (ft)					
Base Capacity (vph)	1443	1775	437	564	513
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	0.43	0.55	0.15	0.03	0.62

Intersection Summary

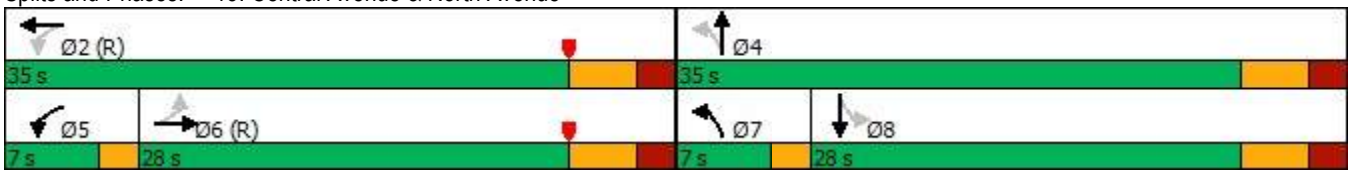
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	494	180	221	677	62	213	542	223	57	668	21
Future Volume (vph)	38	494	180	221	677	62	213	542	223	57	668	21
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.962			0.990			0.966			0.996	
Flt Protected		0.997			0.989			0.989			0.996	
Satd. Flow (prot)	0	3752	0	0	3830	0	0	3737	0	0	3881	0
Flt Permitted		0.841			0.564			0.556			0.748	
Satd. Flow (perm)	0	3165	0	0	2184	0	0	2101	0	0	2914	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					12			68				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		203			706			809			223	
Travel Time (s)		5.5			13.8			22.1			6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	40	520	189	233	713	65	224	571	235	60	703	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	749	0	0	1011	0	0	1030	0	0	785	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		22.4			29.4			29.4			22.4	
Actuated g/C Ratio		0.32			0.42			0.42			0.32	
v/c Ratio		0.74			1.06			1.08			0.84	
Control Delay		19.8			67.4			74.4			32.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		19.8			67.4			74.4			32.5	
LOS		B			E			E			C	
Approach Delay		19.8			67.4			74.4			32.5	
Approach LOS		B			E			E			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 51.8		Intersection LOS: D	
Intersection Capacity Utilization 106.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 13: Central Avenue & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	749	1011	1030	785
v/c Ratio	0.74	1.06	1.08	0.84
Control Delay	19.8	67.4	74.4	32.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.8	67.4	74.4	32.5
Queue Length 50th (ft)	91	~190	~192	163
Queue Length 95th (ft)	106	#341	#349	#259
Internal Link Dist (ft)	123	626	729	143
Turn Bay Length (ft)				
Base Capacity (vph)	1012	957	954	932
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	0.74	1.06	1.08	0.84

Intersection Summary

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

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	660	0	0	519	56	26	42	15	0	0	114
Future Volume (vph)	128	660	0	0	519	56	26	42	15	0	0	114
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.987			0.975			0.865	
Flt Protected	0.950							0.985				
Satd. Flow (prot)	1956	2059	0	0	2032	0	0	1977	0	0	1781	0
Flt Permitted	0.950							0.985				
Satd. Flow (perm)	1956	2059	0	0	2032	0	0	1977	0	0	1781	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	135	695	0	0	546	59	27	44	16	0	0	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	695	0	0	605	0	0	87	0	0	120	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	10.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	128	660	0	0	519	56	26	42	15	0	0	114
Future Vol, veh/h	128	660	0	0	519	56	26	42	15	0	0	114
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	135	695	0	0	546	59	27	44	16	0	0	120

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	605	0	-	-	-	0	1601	1570	695	1571	1541	576
Stage 1	-	-	-	-	-	-	965	965	-	576	576	-
Stage 2	-	-	-	-	-	-	636	605	-	995	965	-
Critical Hdwy	4.12	-	-	-	-	-	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	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	973	-	0	0	-	-	85	111	442	90	115	517
Stage 1	-	-	0	0	-	-	306	333	-	503	502	-
Stage 2	-	-	0	0	-	-	466	487	-	295	333	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	973	-	-	-	-	-	58	96	442	50	99	517
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	96	-	50	99	-
Stage 1	-	-	-	-	-	-	263	287	-	433	502	-
Stage 2	-	-	-	-	-	-	358	487	-	207	287	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	170.8	14.1
HCM LOS			F	B

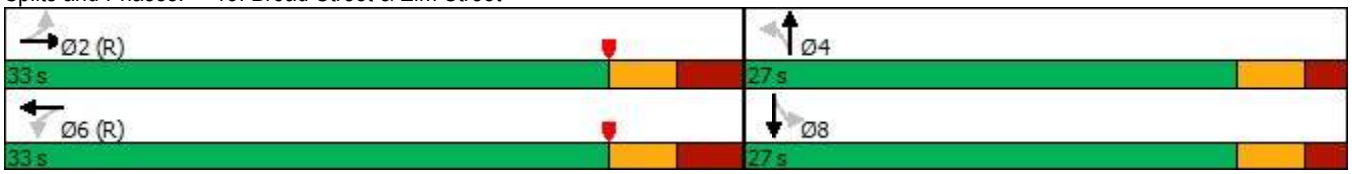
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	90	973	-	-	-	517
HCM Lane V/C Ratio	0.971	0.138	-	-	-	0.232
HCM Control Delay (s)	170.8	9.3	-	-	-	14.1
HCM Lane LOS	F	A	-	-	-	B
HCM 95th %tile Q(veh)	5.6	0.5	-	-	-	0.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	554	65	67	458	76	28	72	56	163	92	89
Future Volume (vph)	62	554	65	67	458	76	28	72	56	163	92	89
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.979			0.934			0.926	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1956	2026	0	1956	2016	0	1956	1923	0	1956	1906	0
Flt Permitted	0.392			0.329			0.609			0.671		
Satd. Flow (perm)	807	2026	0	677	2016	0	1254	1923	0	1381	1906	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			18			59			92	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	65	583	68	71	482	80	29	76	59	172	97	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	651	0	71	562	0	29	135	0	172	191	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.0	36.0		36.0	36.0		13.0	13.0		13.0	13.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.22	0.22		0.22	0.22	
v/c Ratio	0.13	0.53		0.18	0.46		0.11	0.29		0.57	0.39	
Control Delay	7.8	10.1		8.4	9.4		17.3	12.2		27.7	12.2	
Queue Delay	0.0	0.1		0.0	0.5		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	7.8	10.2		8.4	9.9		17.3	12.3		27.7	12.2	
LOS	A	B		A	A		B	B		C	B	
Approach Delay		10.0			9.7			13.1			19.6	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 12.0		Intersection LOS: B	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	651	71	562	29	135	172	191
v/c Ratio	0.13	0.53	0.18	0.46	0.11	0.29	0.57	0.39
Control Delay	7.8	10.1	8.4	9.4	17.3	12.2	27.7	12.2
Queue Delay	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	7.8	10.2	8.4	9.9	17.3	12.3	27.7	12.2
Queue Length 50th (ft)	9	115	13	124	9	23	56	30
Queue Length 95th (ft)	31	254	40	217	23	53	95	66
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	483	1219	405	1215	459	742	506	757
Starvation Cap Reductn	0	0	0	281	0	0	0	0
Spillback Cap Reductn	0	67	0	0	0	20	11	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.57	0.18	0.60	0.06	0.19	0.35	0.25

Intersection Summary

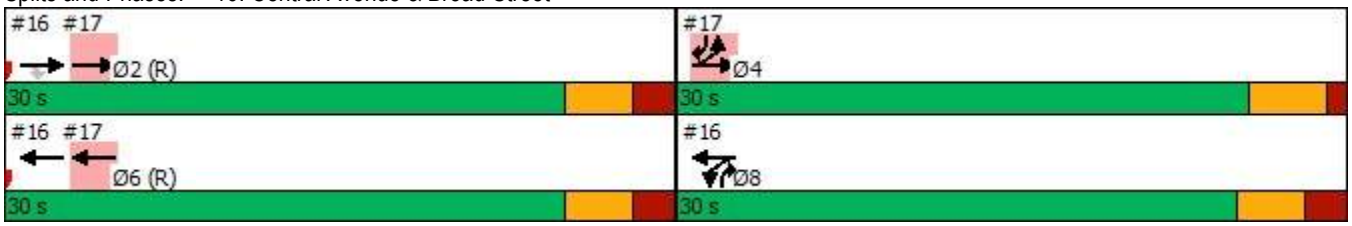


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	687	87	568	551	0	425		
Future Volume (vph)	687	87	568	551	0	425		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2059	1750	1956	2059	0	1781		
Flt Permitted			0.950					
Satd. Flow (perm)	2059	1750	1956	2059	0	1781		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		92				109		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	716			
Travel Time (s)	8.7			2.8	19.5			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%		
Adj. Flow (vph)	723	92	598	580	0	447		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	723	92	598	580	0	447		
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0			7.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	23.5	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.5	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	25.9	25.9	24.1	60.0		24.1		
Actuated g/C Ratio	0.43	0.43	0.40	1.00		0.40		
v/c Ratio	0.81	0.11	0.76	0.28		0.57		
Control Delay	25.1	4.9	25.7	0.3		13.5		
Queue Delay	41.8	0.0	28.8	0.0		0.2		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	66.9	4.9	54.6	0.3		13.7		
LOS	E	A	D	A		B		
Approach Delay	59.9			27.9	13.7			
Approach LOS	E			C	B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 36.0		Intersection LOS: D	
Intersection Capacity Utilization 69.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	723	92	598	580	447
v/c Ratio	0.81	0.11	0.76	0.28	0.57
Control Delay	25.1	4.9	25.7	0.3	13.5
Queue Delay	41.8	0.0	28.8	0.0	0.2
Total Delay	66.9	4.9	54.6	0.3	13.7
Queue Length 50th (ft)	225	4	217	0	85
Queue Length 95th (ft)	#414	m24	#322	0	162
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	889	808	815	2057	805
Starvation Cap Reductn	94	0	238	0	0
Spillback Cap Reductn	219	0	0	57	46
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.08	0.11	1.04	0.29	0.59

Intersection Summary

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

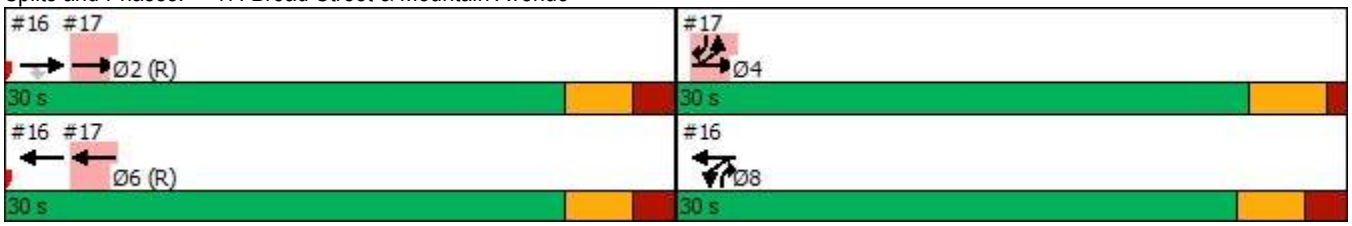


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	522	584	593	26	0	524		
Future Volume (vph)	522	584	593	26	0	524		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.994			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1956	2059	3888	0	0	3080		
Flt Permitted	0.950							
Satd. Flow (perm)	1956	2059	3888	0	0	3080		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			9			268		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	398		1032			
Travel Time (s)		2.5	10.9		28.1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%		
Adj. Flow (vph)	549	615	624	27	0	552		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	549	615	651	0	0	552		
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	7.0
Minimum Split (s)	23.5		30.0			23.5	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.5		25.0			25.5	25.0	25.0
Yellow Time (s)	3.5		3.0			3.5	3.0	3.0
All-Red Time (s)	1.0		2.0			1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	4.5		5.0			4.5		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	24.6	60.0	25.9			24.6		
Actuated g/C Ratio	0.41	1.00	0.43			0.41		
v/c Ratio	0.69	0.30	0.39			0.39		
Control Delay	19.6	0.3	12.6			6.8		
Queue Delay	53.8	0.0	55.5			0.1		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	73.4	0.3	68.1			6.9		
LOS	E	A	E			A		
Approach Delay		34.8	68.1		6.9			
Approach LOS		C	E		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 37.4		Intersection LOS: D	
Intersection Capacity Utilization 49.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	549	615	651	552
v/c Ratio	0.69	0.30	0.39	0.39
Control Delay	19.6	0.3	12.6	6.8
Queue Delay	53.8	0.0	55.5	0.1
Total Delay	73.4	0.3	68.1	6.9
Queue Length 50th (ft)	165	0	81	35
Queue Length 95th (ft)	m234	m0	118	67
Internal Link Dist (ft)		13	318	
Turn Bay Length (ft)				150
Base Capacity (vph)	831	2057	1686	1463
Starvation Cap Reductn	347	0	0	0
Spillback Cap Reductn	0	0	1236	214
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.13	0.30	1.45	0.44

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	750	669	0	0	59
Future Volume (vph)	0	750	669	0	0	59
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	2059	3912	0	0	1781
Flt Permitted						
Satd. Flow (perm)	0	2059	3912	0	0	1781
Link Speed (mph)		30	30		30	
Link Distance (ft)		156	339		119	
Travel Time (s)		3.5	7.7		2.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	789	704	0	0	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	789	704	0	0	62
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.0%		ICU Level of Service A	
Analysis Period (min) 15			

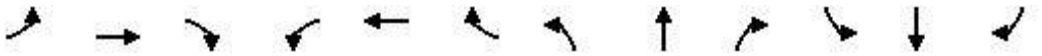
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			↱
Traffic Vol, veh/h	0	750	669	0	0	59
Future Vol, veh/h	0	750	669	0	0	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	789	704	0	0	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	352
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	645
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	645
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	645
HCM Lane V/C Ratio	-	-	0.096
HCM Control Delay (s)	-	-	11.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	573	10	36	819	0	15	0	53	0	0	0
Future Volume (vph)	0	573	10	36	819	0	15	0	53	0	0	0
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
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		0.998						0.895				
Flt Protected					0.998			0.989				
Satd. Flow (prot)	0	2055	0	0	2055	0	0	1822	0	0	2059	0
Flt Permitted					0.998			0.989				
Satd. Flow (perm)	0	2055	0	0	2055	0	0	1822	0	0	2059	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		473			427			221			152	
Travel Time (s)		9.2			8.3			6.0			4.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	603	11	38	862	0	16	0	56	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	614	0	0	900	0	0	72	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	573	10	36	819	0	15	0	53	0	0	0
Future Vol, veh/h	0	573	10	36	819	0	15	0	53	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	603	11	38	862	0	16	0	56	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	862	0	0	614	0	0	1547	1547	609	1575	1552	862
Stage 1	-	-	-	-	-	-	609	609	-	938	938	-
Stage 2	-	-	-	-	-	-	938	938	-	637	614	-
Critical Hdwy	4.12	-	-	4.12	-	-	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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	780	-	-	965	-	-	93	114	495	89	113	355
Stage 1	-	-	-	-	-	-	482	485	-	317	343	-
Stage 2	-	-	-	-	-	-	317	343	-	465	483	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	780	-	-	965	-	-	88	105	495	74	104	355
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	105	-	74	104	-
Stage 1	-	-	-	-	-	-	482	485	-	317	317	-
Stage 2	-	-	-	-	-	-	293	317	-	413	483	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	25.6	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	245	780	-	-	965	-	-	-
HCM Lane V/C Ratio	0.292	-	-	-	0.039	-	-	-
HCM Control Delay (s)	25.6	0	-	-	8.9	0	-	0
HCM Lane LOS	D	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	603	18	43	846	24	61
Future Volume (vph)	603	18	43	846	24	61
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.903	
Flt Protected				0.998	0.986	
Satd. Flow (prot)	2051	0	0	2055	1833	0
Flt Permitted				0.998	0.986	
Satd. Flow (perm)	2051	0	0	2055	1833	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	427			175	238	
Travel Time (s)	8.3			3.4	6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	635	19	45	891	25	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	654	0	0	936	89	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	603	18	43	846	24	61
Future Vol, veh/h	603	18	43	846	24	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	635	19	45	891	25	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	654	0	1626	645
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	981	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	933	-	112	472
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	933	-	101	472
Mov Cap-2 Maneuver	-	-	-	-	101	-
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	329	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	29.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	232	-	-	933	-
HCM Lane V/C Ratio	0.386	-	-	0.049	-
HCM Control Delay (s)	29.9	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.7	-	-	0.2	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	0	0	0	2	90
Future Volume (vph)	1	0	0	0	2	90
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					0.999
Satd. Flow (prot)	1956	0	0	0	0	2057
Flt Permitted	0.950					0.999
Satd. Flow (perm)	1956	0	0	0	0	2057
Link Speed (mph)	25		25			25
Link Distance (ft)	212		271			406
Travel Time (s)	5.8		7.4			11.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	0	0	2	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	0	0	100
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	0	0	2	90
Future Vol, veh/h	1	0	0	0	2	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	0	2	98

Major/Minor	Minor1		Major2	
Conflicting Flow All	102	-	0	0
Stage 1	0	-	-	-
Stage 2	102	-	-	-
Critical Hdwy	6.42	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	-	2.218	-
Pot Cap-1 Maneuver	896	0	-	-
Stage 1	-	0	-	-
Stage 2	922	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	896	-	-	-
Mov Cap-2 Maneuver	896	-	-	-
Stage 1	-	-	-	-
Stage 2	922	-	-	-

Approach	WB	SB
HCM Control Delay, s	9	
HCM LOS	A	

Minor Lane/Major Mvmt	WBLn1	SBL	SBT
Capacity (veh/h)	896	-	-
HCM Lane V/C Ratio	0.001	-	-
HCM Control Delay (s)	9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	259	0	2	152	0	1
Future Volume (vph)	259	0	2	152	0	1
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.999		
Satd. Flow (prot)	2059	0	0	2057	1781	0
Flt Permitted				0.999		
Satd. Flow (perm)	2059	0	0	2057	1781	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	306			92	158	
Travel Time (s)	8.3			2.1	3.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	0	2	165	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	282	0	0	167	1	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	259	0	2	152	0	1
Future Vol, veh/h	259	0	2	152	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	0	2	165	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	282	0	451	282
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	169	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1280	-	566	757
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	565	757
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	859	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	757	-	-	1280	-
HCM Lane V/C Ratio	0.001	-	-	0.002	-
HCM Control Delay (s)	9.8	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	578	0	0	834	0	16
Future Volume (vph)	578	0	0	834	0	16
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3912	0	0	3912	0	1781
Flt Permitted						
Satd. Flow (perm)	3912	0	0	3912	0	1781
Link Speed (mph)	25			25	30	
Link Distance (ft)	479			203	148	
Travel Time (s)	13.1			5.5	3.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	628	0	0	907	0	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	628	0	0	907	0	17
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	578	0	0	834	0	16
Future Vol, veh/h	578	0	0	834	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	628	0	0	907	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	314
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	682
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	682
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	682	-	-	-
HCM Lane V/C Ratio	0.026	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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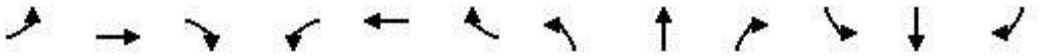
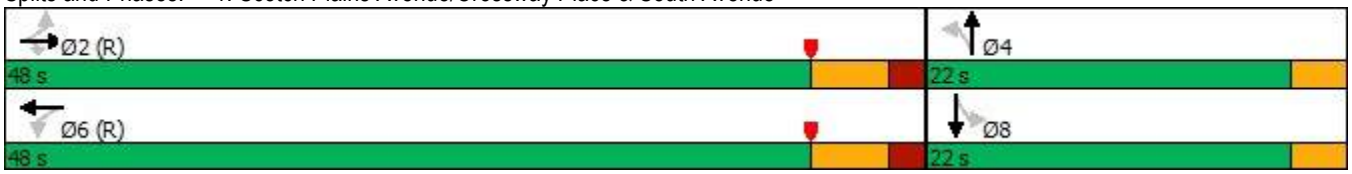


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	374	45	30	355	74	43	184	21	62	157	121
Future Volume (vph)	152	374	45	30	355	74	43	184	21	62	157	121
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.978			0.985			0.935	
Flt Protected		0.986			0.997		0.950			0.950		
Satd. Flow (prot)	0	2065	1785	0	2039	0	1995	2040	0	1975	1964	0
Flt Permitted		0.748			0.950		0.288			0.419		
Satd. Flow (perm)	0	1566	1785	0	1943	0	605	2040	0	871	1964	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47		25			8			54	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	4%	0%	1%	0%	1%	5%	1%	0%	0%
Adj. Flow (vph)	158	390	47	31	370	77	45	192	22	65	164	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	548	47	0	478	0	45	214	0	65	290	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		47.1	47.1		47.1		13.9	13.9		13.9	13.9	
Actuated g/C Ratio		0.67	0.67		0.67		0.20	0.20		0.20	0.20	
v/c Ratio		0.52	0.04		0.36		0.38	0.52		0.38	0.67	
Control Delay		13.1	4.7		6.3		31.9	27.8		29.2	28.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		13.1	4.7		6.3		31.9	27.8		29.2	28.2	
LOS		B	A		A		C	C		C	C	
Approach Delay		12.5			6.3			28.5			28.4	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 84.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	548	47	478	45	214	65	290
v/c Ratio	0.52	0.04	0.36	0.38	0.52	0.38	0.67
Control Delay	13.1	4.7	6.3	31.9	27.8	29.2	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	4.7	6.3	31.9	27.8	29.2	28.2
Queue Length 50th (ft)	155	1	69	17	80	25	94
Queue Length 95th (ft)	279	m22	146	43	128	54	154
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	1053	1216	1315	164	559	236	572
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.04	0.36	0.27	0.38	0.28	0.51

Intersection Summary

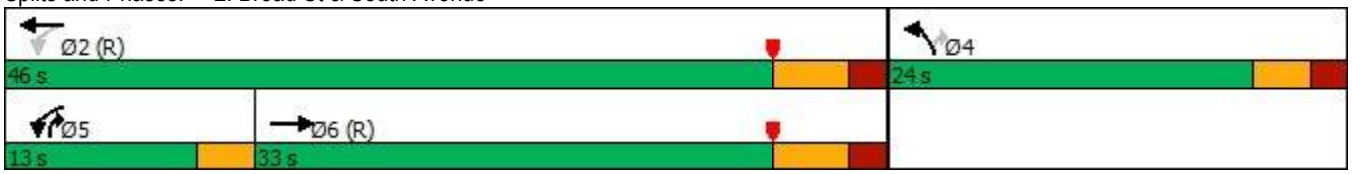
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	404	73	406	420	108	305
Future Volume (vph)	404	73	406	420	108	305
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.979					0.850
Flt Protected				0.976	0.950	
Satd. Flow (prot)	2019	0	0	3875	1995	1785
Flt Permitted				0.587	0.950	
Satd. Flow (perm)	2019	0	0	2331	1995	1785
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	12%	1%	0%	0%	0%
Adj. Flow (vph)	412	74	414	429	110	311
Shared Lane Traffic (%)						
Lane Group Flow (vph)	486	0	0	843	110	311
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	7.0		10.0	9.0	7.0	10.0
Minimum Split (s)	33.0		13.0	35.0	22.0	13.0
Total Split (s)	33.0		13.0	46.0	24.0	13.0
Total Split (%)	47.1%		18.6%	65.7%	34.3%	18.6%
Maximum Green (s)	27.0		10.0	40.0	19.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	7.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	39.5			52.7	8.7	21.5
Actuated g/C Ratio	0.56			0.75	0.12	0.31
v/c Ratio	0.43			0.44	0.45	0.57
Control Delay	11.4			4.2	33.8	23.7
Queue Delay	0.0			0.0	0.0	0.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	11.4			4.2	33.8	23.7
LOS	B			A	C	C
Approach Delay	11.4			4.2	26.3	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Broad St & South Avenue



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	486	843	110	311
v/c Ratio	0.43	0.44	0.45	0.57
Control Delay	11.4	4.2	33.8	23.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.4	4.2	33.8	23.7
Queue Length 50th (ft)	117	52	45	107
Queue Length 95th (ft)	207	89	86	164
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	1139	1914	541	548
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.44	0.20	0.57

Intersection Summary

MOVEMENT SUMMARY

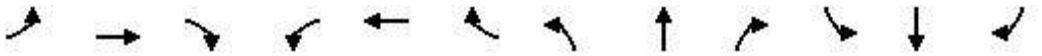
Site: 101 [Westfield RAB_Existing_SAT (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	14	0.0	15	0.0	0.657	14.8	LOS B	6.8	174.0	0.78	1.00	1.39	21.3
6	T1	348	0.0	378	0.0	0.657	14.8	LOS B	6.8	174.0	0.78	1.00	1.39	19.5
16	R2	370	7.0	402	7.0	0.657	10.7	LOS B	6.8	174.0	0.65	0.74	0.93	21.9
Approach		732	3.5	795	3.5	0.657	12.7	LOS B	6.8	174.0	0.71	0.87	1.16	20.7
North: SB - SR 28														
7	L2	365	0.0	397	0.0	0.443	8.6	LOS A	2.5	62.5	0.58	0.54	0.63	22.6
14	R2	356	0.0	387	0.0	0.443	7.2	LOS A	2.5	62.5	0.53	0.47	0.53	21.0
Approach		721	0.0	784	0.0	0.443	7.9	LOS A	2.5	62.5	0.55	0.50	0.58	22.0
West: EB - South Ave														
5	L2	482	0.0	524	0.0	0.755	17.4	LOS C	12.5	312.2	0.85	1.16	1.70	13.8
2	T1	389	1.0	423	1.0	0.755	12.2	LOS B	12.5	312.2	0.67	0.82	1.15	21.8
Approach		871	0.4	947	0.4	0.755	15.1	LOS C	12.5	312.2	0.77	1.01	1.45	16.8
All Vehicles		2324	1.3	2526	1.3	0.755	12.1	LOS B	12.5	312.2	0.68	0.81	1.09	19.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

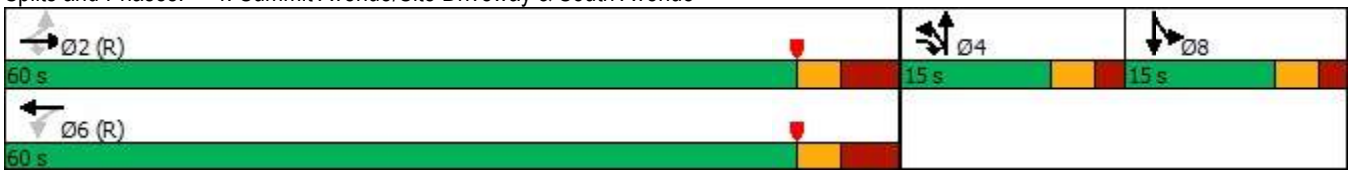


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	618	43	28	560	15	97	14	41	34	3	38
Future Volume (vph)	17	618	43	28	560	15	97	14	41	34	3	38
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	0		70	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.889			0.860	
Flt Protected		0.999			0.998		0.950			0.950		
Satd. Flow (prot)	0	2098	1785	0	3966	0	1995	1867	0	1995	1806	0
Flt Permitted		0.977			0.905		0.950			0.950		
Satd. Flow (perm)	0	2052	1785	0	3597	0	1995	1867	0	1995	1806	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		5			43			40	
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		511			169			500			138	
Travel Time (s)		13.9			3.8			13.6			3.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	18	644	45	29	583	16	101	15	43	35	3	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	662	45	0	628	0	101	58	0	35	43	0
Turn Type	Perm	NA	pm+ov	Perm	NA		Split	NA		Split	NA	
Protected Phases		2	4		6		4	4		8	8	
Permitted Phases	2		2	6								
Detector Phase	2	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	25.0	25.0	12.0	25.0	25.0		12.0	12.0		12.0	12.0	
Total Split (s)	60.0	60.0	15.0	60.0	60.0		15.0	15.0		15.0	15.0	
Total Split (%)	66.7%	66.7%	16.7%	66.7%	66.7%		16.7%	16.7%		16.7%	16.7%	
Maximum Green (s)	53.0	53.0	10.0	53.0	53.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.0	5.0		7.0		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	C-Max	C-Max	None	C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		62.5	75.8		62.5		9.1	9.1		7.6	7.6	
Actuated g/C Ratio		0.69	0.84		0.69		0.10	0.10		0.08	0.08	
v/c Ratio		0.46	0.03		0.25		0.51	0.26		0.21	0.23	
Control Delay		10.0	0.7		7.3		47.2	19.2		41.1	16.9	
Queue Delay		0.2	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		10.2	0.7		7.3		47.2	19.2		41.1	16.9	
LOS		B	A		A		D	B		D	B	
Approach Delay		9.6			7.3			37.0			27.7	
Approach LOS		A			A			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue



Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	662	45	628	101	58	35	43
v/c Ratio	0.46	0.03	0.25	0.51	0.26	0.21	0.23
Control Delay	10.0	0.7	7.3	47.2	19.2	41.1	16.9
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	0.7	7.3	47.2	19.2	41.1	16.9
Queue Length 50th (ft)	190	0	77	55	8	19	2
Queue Length 95th (ft)	296	6	112	105	43	47	32
Internal Link Dist (ft)	431		89		420		58
Turn Bay Length (ft)							
Base Capacity (vph)	1426	1517	2501	221	245	221	236
Starvation Cap Reductn	206	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.03	0.25	0.46	0.24	0.16	0.18

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	650	43	32	553	43	105
Future Volume (vph)	650	43	32	553	43	105
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.992				0.904	
Flt Protected				0.997	0.986	
Satd. Flow (prot)	2083	0	0	3978	1872	0
Flt Permitted				0.997	0.986	
Satd. Flow (perm)	2083	0	0	3978	1872	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	326			279	211	
Travel Time (s)	7.4			6.3	4.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	663	44	33	564	44	107
Shared Lane Traffic (%)						
Lane Group Flow (vph)	707	0	0	597	151	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	650	43	32	553	43	105
Future Vol, veh/h	650	43	32	553	43	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	663	44	33	564	44	107

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	707	0	1033	685
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	348	-
Critical Hdwy	-	-	4.1	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	901	-	245	452
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	692	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	901	-	232	452
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	22.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	901	-
HCM Lane V/C Ratio	0.427	-	-	0.036	-
HCM Control Delay (s)	22.5	-	-	9.1	0.2
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.1	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	694	584	28	33	59
Future Volume (vph)	28	694	584	28	33	59
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.993		0.913	
Flt Protected		0.998			0.982	
Satd. Flow (prot)	0	2096	3962	0	1883	0
Flt Permitted		0.998			0.982	
Satd. Flow (perm)	0	2096	3962	0	1883	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		279	494		163	
Travel Time (s)		6.3	11.2		4.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	30	746	628	30	35	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	776	658	0	98	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.8%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	694	584	28	33	59
Future Vol, veh/h	28	694	584	28	33	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	30	746	628	30	35	63

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	658	0	-	0	1449	329
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	806	-
Critical Hdwy	4.1	-	-	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	939	-	-	-	135	673
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	443	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	939	-	-	-	128	673
Mov Cap-2 Maneuver	-	-	-	-	128	-
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	443	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	26.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	939	-	-	-	266
HCM Lane V/C Ratio	0.032	-	-	-	0.372
HCM Control Delay (s)	9	0	-	-	26.3
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	1.6

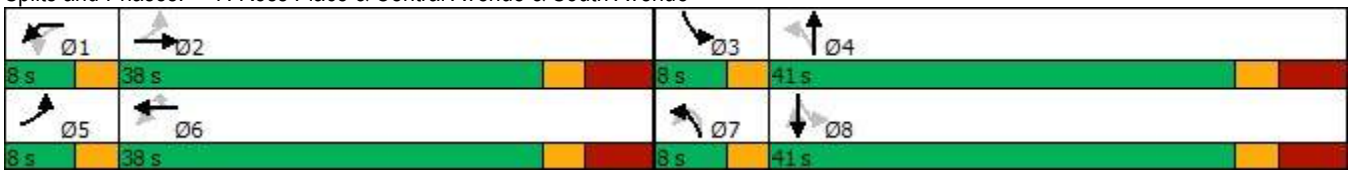
Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	134	398	196	11	94	26	378	253	4	152	466	65
Future Volume (vph)	134	398	196	11	94	26	378	253	4	152	466	65
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949						0.850			0.982	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1995	3737	0	0	0	1995	2100	1767	0	1976	2017	0
Flt Permitted	0.372					0.335				0.319		
Satd. Flow (perm)	781	3737	0	0	0	704	2100	1767	0	663	2017	0
Right Turn on Red				Yes				Yes				Yes
Satd. Flow (RTOR)		2						208			8	
Link Speed (mph)		30					30				25	
Link Distance (ft)		494					926				398	
Travel Time (s)		11.2					21.0				10.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	1%	2%	4%
Adj. Flow (vph)	140	415	204	11	98	27	394	264	4	158	485	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	630	0	0	0	125	394	264	0	162	553	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	8.0	8.0	41.0	
Total Split (%)	8.4%	40.0%			8.4%	8.4%	40.0%	40.0%	8.4%	8.4%	43.2%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	5.0	5.0	33.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							0	0				
Act Effct Green (s)	40.1	30.1				40.1	30.1	30.1		38.5	28.5	
Actuated g/C Ratio	0.44	0.33				0.44	0.33	0.33		0.42	0.31	
v/c Ratio	0.34	0.51				0.33	0.57	0.36		0.46	0.87	
Control Delay	17.3	26.8				17.2	29.7	7.9		19.2	43.7	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	235	403	89	103
Future Volume (vph)	235	403	89	103
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1995	2059	1777	0
Flt Permitted	0.144			
Satd. Flow (perm)	302	2059	1777	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			126	
Link Speed (mph)		25		
Link Distance (ft)		809		
Travel Time (s)		22.1		
Peak Hour Factor	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	1%	0%
Adj. Flow (vph)	245	420	93	107
Shared Lane Traffic (%)				
Lane Group Flow (vph)	245	420	200	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	41.0	41.0	
Total Split (s)	8.0	41.0	41.0	
Total Split (%)	8.4%	43.2%	43.2%	
Maximum Green (s)	5.0	33.0	33.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		26.0	26.0	
Pedestrian Calls (#/hr)		0	0	
Act Effct Green (s)	38.5	28.5	28.5	
Actuated g/C Ratio	0.42	0.31	0.31	
v/c Ratio	1.11	0.65	0.31	
Control Delay	114.6	31.8	10.4	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	17.3	26.8				17.2	29.7	7.9		19.2	43.7	
LOS	B	C				B	C	A		B	D	
Approach Delay		25.0					20.4				38.2	
Approach LOS		C					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 90.7			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 33.8		Intersection LOS: C	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	114.6	31.8	10.4	
LOS	F	C	B	
Approach Delay		50.3		
Approach LOS		D		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	140	630	125	394	264	162	553	245	420	200
v/c Ratio	0.34	0.51	0.33	0.57	0.36	0.46	0.87	1.11	0.65	0.31
Control Delay	17.3	26.8	17.2	29.7	7.9	19.2	43.7	114.6	31.8	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	26.8	17.2	29.7	7.9	19.2	43.7	114.6	31.8	10.4
Queue Length 50th (ft)	46	157	41	192	23	53	291	~97	205	30
Queue Length 95th (ft)	85	217	77	295	82	90	#430	#231	303	80
Internal Link Dist (ft)		414		846			318		729	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	412	1240	382	696	725	354	740	221	751	728
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	0.34	0.51	0.33	0.57	0.36	0.46	0.75	1.11	0.56	0.27

Intersection Summary

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

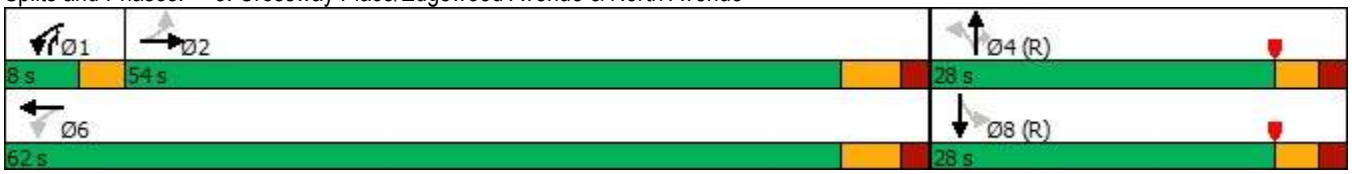
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

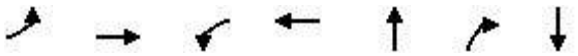
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	481	50	255	531	17	67	58	306	5	58	13
Future Volume (vph)	6	481	50	255	531	17	67	58	306	5	58	13
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.995				0.850		0.977	
Flt Protected	0.950			0.950				0.974			0.997	
Satd. Flow (prot)	1995	2052	0	1995	2050	0	0	2045	1750	0	2046	0
Flt Permitted	0.419			0.304				0.803			0.985	
Satd. Flow (perm)	880	2052	0	638	2050	0	0	1686	1750	0	2021	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			3				310		11	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
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 (%)	0%	1%	0%	0%	2%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	6	517	54	274	571	18	72	62	329	5	62	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	571	0	274	589	0	0	134	329	0	81	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	54.0	54.0		8.0	62.0		28.0	28.0	8.0	28.0	28.0	
Total Split (%)	60.0%	60.0%		8.9%	68.9%		31.1%	31.1%	8.9%	31.1%	31.1%	
Maximum Green (s)	48.0	48.0		5.0	56.0		23.0	23.0	5.0	23.0	23.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		59.0	56.0			23.0	33.0		23.0	
Actuated g/C Ratio	0.53	0.53		0.66	0.62			0.26	0.37		0.26	
v/c Ratio	0.01	0.52		0.56	0.46			0.31	0.39		0.15	
Control Delay	10.0	15.5		11.2	10.4			29.5	4.6		23.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.0	15.5		11.2	10.4			29.5	4.6		23.6	
LOS	A	B		B	B			C	A		C	
Approach Delay		15.4			10.7			11.8			23.6	
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue





Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	6	571	274	589	134	329	81
v/c Ratio	0.01	0.52	0.56	0.46	0.31	0.39	0.15
Control Delay	10.0	15.5	11.2	10.4	29.5	4.6	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	15.5	11.2	10.4	29.5	4.6	23.6
Queue Length 50th (ft)	2	194	55	160	62	7	31
Queue Length 95th (ft)	7	285	87	232	112	61	67
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	469	1098	493	1276	430	838	524
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.52	0.56	0.46	0.31	0.39	0.15

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	14	569	524	148	163	35
Future Volume (vph)	14	569	524	148	163	35
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0			0	0	50
Storage Lanes	0			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.970			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	2098	2033	0	1995	1785
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	2098	2033	0	1995	1785
Link Speed (mph)		35	35		25	
Link Distance (ft)		175	395		156	
Travel Time (s)		3.4	7.7		4.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	14	587	540	153	168	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	601	693	0	168	36
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	569	524	148	163	35
Future Vol, veh/h	14	569	524	148	163	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Yield
Storage Length	-	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	14	587	540	153	168	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	693	0	-	0	1232	617
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	615	-
Critical Hdwy	4.1	-	-	-	4.4	4.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	912	-	-	-	391	684
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	912	-	-	-	382	684
Mov Cap-2 Maneuver	-	-	-	-	382	-
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	543	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	912	-	-	-	382	684
HCM Lane V/C Ratio	0.016	-	-	-	0.44	0.053
HCM Control Delay (s)	9	0	-	-	21.6	10.6
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	2.2	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	168	163	0	51	17
Future Volume (vph)	0	168	163	0	51	17
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.966	
Flt Protected					0.964	
Satd. Flow (prot)	0	2079	2100	0	1956	0
Flt Permitted					0.964	
Satd. Flow (perm)	0	2079	2100	0	1956	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		92	156		284	
Travel Time (s)		2.5	4.3		7.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	187	181	0	57	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	187	181	0	76	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	168	163	0	51	17
Future Vol, veh/h	0	168	163	0	51	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	0	187	181	0	57	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	368	181
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	636	867
Stage 1	0	-	-	0	855	-
Stage 2	0	-	-	0	850	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	636	867
Mov Cap-2 Maneuver	-	-	-	-	636	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	850	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

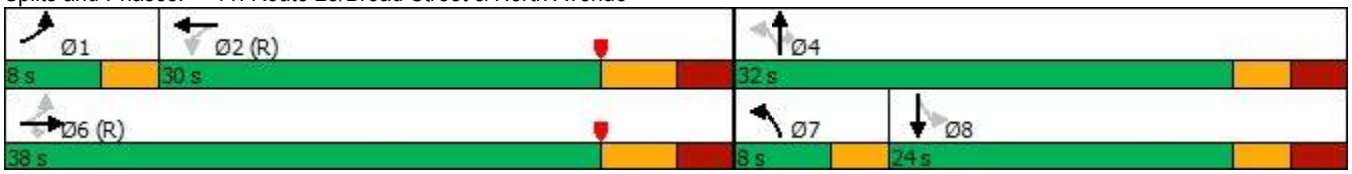
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	681
HCM Lane V/C Ratio	-	-	0.111
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	331	338	189	447	12	244	417	160	47	378	108
Future Volume (vph)	126	331	338	189	447	12	244	417	160	47	378	108
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.997				0.850		0.970	
Flt Protected	0.950				0.986		0.950				0.996	
Satd. Flow (prot)	1975	1600	1767	0	3795	0	1995	2100	1785	0	3820	0
Flt Permitted	0.303				0.750		0.272				0.866	
Satd. Flow (perm)	630	1600	1767	0	2887	0	571	2100	1785	0	3321	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			348		3						43	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		395			555			498			430	
Travel Time (s)		7.7			15.1			13.6			11.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	2%	4%	0%	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	130	341	348	195	461	12	252	430	165	48	390	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	341	348	0	668	0	252	430	165	0	549	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	38.0	38.0	30.0	30.0		8.0	32.0	32.0	24.0	24.0	
Total Split (%)	11.4%	54.3%	54.3%	42.9%	42.9%		11.4%	45.7%	45.7%	34.3%	34.3%	
Maximum Green (s)	5.0	31.0	31.0	23.0	23.0		5.0	26.0	26.0	18.0	18.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0	0	0	0			0	0	0	0	
Act Effct Green (s)	37.2	33.2	33.2		26.2		26.8	23.8	23.8		15.8	
Actuated g/C Ratio	0.53	0.47	0.47		0.37		0.38	0.34	0.34		0.23	
v/c Ratio	0.29	0.45	0.34		0.62		0.79	0.60	0.27		0.70	
Control Delay	10.7	15.4	2.6		19.8		35.7	22.8	17.5		27.9	
Queue Delay	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.7	15.4	2.6		19.8		35.7	22.8	17.5		27.9	
LOS	B	B	A		B		D	C	B		C	
Approach Delay		9.2			19.8			25.6			27.9	
Approach LOS		A			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 6 (9%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 20.0		Intersection LOS: C	
Intersection Capacity Utilization 92.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue

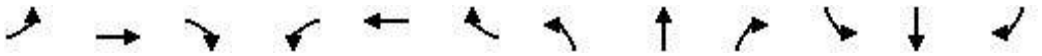




Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	130	341	348	668	252	430	165	549
v/c Ratio	0.29	0.45	0.34	0.62	0.79	0.60	0.27	0.70
Control Delay	10.7	15.4	2.6	19.8	35.7	22.8	17.5	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	15.4	2.6	19.8	35.7	22.8	17.5	27.9
Queue Length 50th (ft)	27	95	0	111	73	148	50	103
Queue Length 95th (ft)	55	168	41	181	#149	226	90	150
Internal Link Dist (ft)		315		475		418		350
Turn Bay Length (ft)	185							
Base Capacity (vph)	446	759	1021	1080	320	780	663	885
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.45	0.34	0.62	0.79	0.55	0.25	0.62

Intersection Summary

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



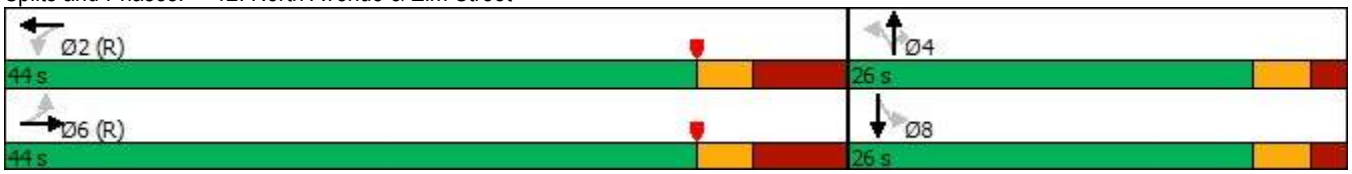
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	480	48	46	632	132	2	2	68	128	28	92
Future Volume (vph)	24	480	48	46	632	132	2	2	68	128	28	92
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2000	2000	2000	2000	2000	2000
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	*0.95	1.00	1.00	*0.95	1.00
Frt		0.987			0.976				0.850		0.950	
Flt Protected		0.998			0.997			0.976			0.975	
Satd. Flow (prot)	0	3930	0	0	3883	0	0	1854	1700	0	1760	0
Flt Permitted		0.895			0.886			0.901			0.836	
Satd. Flow (perm)	0	3525	0	0	3450	0	0	1712	1700	0	1509	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			47				78		44	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			479			193			176	
Travel Time (s)		4.4			13.1			4.4			4.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	24	485	48	46	638	133	2	2	69	129	28	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	557	0	0	817	0	0	4	69	0	250	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		26.0	26.0	26.0	26.0	26.0	
Total Split (s)	44.0	44.0		44.0	44.0		26.0	26.0	26.0	26.0	26.0	
Total Split (%)	62.9%	62.9%		62.9%	62.9%		37.1%	37.1%	37.1%	37.1%	37.1%	
Maximum Green (s)	36.0	36.0		36.0	36.0		21.0	21.0	21.0	21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	5.0	5.0		5.0	5.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		8.0			8.0			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	C-Max	C-Max		C-Max	C-Max		None	None	None	Max	Max	
Act Effct Green (s)		36.0			36.0			21.0	21.0		21.0	
Actuated g/C Ratio		0.51			0.51			0.30	0.30		0.30	
v/c Ratio		0.31			0.45			0.01	0.12		0.52	
Control Delay		9.4			11.8			17.2	4.9		21.1	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		9.4			11.8			17.2	4.9		21.1	
LOS		A			B			B	A		C	
Approach Delay		9.4			11.8			5.6			21.1	
Approach LOS		A			B			A			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

* User Entered Value

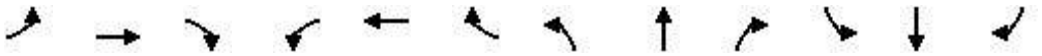
Splits and Phases: 12: North Avenue & Elm Street



Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	557	817	4	69	250
v/c Ratio	0.31	0.45	0.01	0.12	0.52
Control Delay	9.4	11.8	17.2	4.9	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	11.8	17.2	4.9	21.1
Queue Length 50th (ft)	26	101	1	0	75
Queue Length 95th (ft)	106	m144	8	22	146
Internal Link Dist (ft)	83	399	113		96
Turn Bay Length (ft)					
Base Capacity (vph)	1823	1797	513	564	483
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	0.31	0.45	0.01	0.12	0.52

Intersection Summary

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

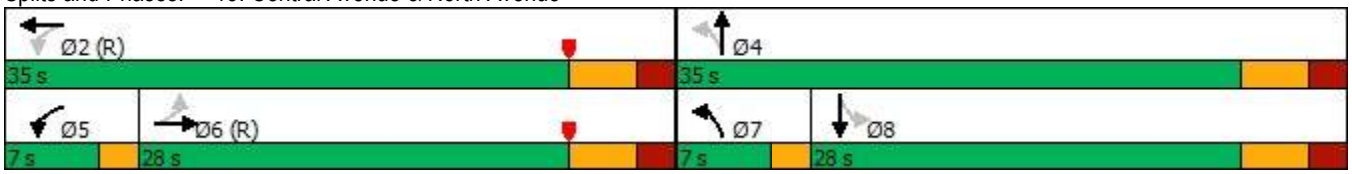


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	388	211	218	537	59	219	494	171	44	457	31
Future Volume (vph)	76	388	211	218	537	59	219	494	171	44	457	31
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.953			0.989			0.971			0.991	
Flt Protected		0.994			0.987			0.988			0.996	
Satd. Flow (prot)	0	3780	0	0	3895	0	0	3813	0	0	3932	0
Flt Permitted		0.754			0.578			0.634			0.809	
Satd. Flow (perm)	0	2867	0	0	2281	0	0	2447	0	0	3194	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					14			51				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		203			706			809			223	
Travel Time (s)		5.5			13.8			22.1			6.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%
Adj. Flow (vph)	78	396	215	222	548	60	223	504	174	45	466	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	689	0	0	830	0	0	901	0	0	543	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	15.6	15.6		7.1	15.6		7.1	12.6		12.6	12.6	
Total Split (s)	28.0	28.0		7.0	35.0		7.0	35.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		10.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	22.4	22.4		4.9	29.4		4.9	29.4		22.4	22.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag	Lag	Lag		Lead			Lead			Lag	Lag	
Lead-Lag Optimize?	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	
Recall Mode	C-Max	C-Max		Min	C-Max		Min	None		None	None	
Act Effct Green (s)		23.4			30.6			28.2			21.2	
Actuated g/C Ratio		0.33			0.44			0.40			0.30	
v/c Ratio		0.72			0.80			0.86			0.56	
Control Delay		21.8			24.2			27.9			22.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		21.8			24.2			27.9			22.8	
LOS		C			C			C			C	
Approach Delay		21.8			24.2			27.9			22.8	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 69.4 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 24.5		Intersection LOS: C	
Intersection Capacity Utilization 93.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 13: Central Avenue & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	689	830	901	543
v/c Ratio	0.72	0.80	0.86	0.56
Control Delay	21.8	24.2	27.9	22.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.8	24.2	27.9	22.8
Queue Length 50th (ft)	101	131	139	99
Queue Length 95th (ft)	111	#198	#208	145
Internal Link Dist (ft)	123	626	729	143
Turn Bay Length (ft)				
Base Capacity (vph)	956	1042	1084	1022
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	0.72	0.80	0.83	0.53

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	453	1	0	370	72	17	47	76	0	0	166
Future Volume (vph)	143	453	1	0	370	72	17	47	76	0	0	166
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.978			0.927			0.865	
Flt Protected	0.950							0.994				
Satd. Flow (prot)	1995	2079	0	0	2044	0	0	1935	0	0	1799	0
Flt Permitted	0.950							0.994				
Satd. Flow (perm)	1995	2079	0	0	2044	0	0	1935	0	0	1799	0
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
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 (%)	0%	1%	0%	0%	0%	3%	0%	0%	0%	0%	0%	1%
Adj. Flow (vph)	154	487	1	0	398	77	18	51	82	0	0	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	488	0	0	475	0	0	151	0	0	178	0
Sign Control		Free			Free			Stop			Stop	

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	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	143	453	1	0	370	72	17	47	76	0	0	166
Future Vol, veh/h	143	453	1	0	370	72	17	47	76	0	0	166
Conflicting Peds, #/hr	0	0	0	0	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	128	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	1	0	0	0	3	0	0	0	0	0	1
Mvmt Flow	154	487	1	0	398	77	18	51	82	0	0	178

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	475	0	0	-	-	0	1322	1271	488	1299	1233	437
Stage 1	-	-	-	-	-	-	796	796	-	437	437	-
Stage 2	-	-	-	-	-	-	526	475	-	862	796	-
Critical Hdwy	4.1	-	-	-	-	-	7.1	6.5	6.2	7.1	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.5	4	3.3	3.5	4	3.309
Pot Cap-1 Maneuver	1098	-	-	0	-	-	135	169	584	140	178	622
Stage 1	-	-	-	0	-	-	383	402	-	602	583	-
Stage 2	-	-	-	0	-	-	539	561	-	353	402	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1098	-	-	-	-	-	86	145	584	79	153	622
Mov Cap-2 Maneuver	-	-	-	-	-	-	86	145	-	79	153	-
Stage 1	-	-	-	-	-	-	329	346	-	518	583	-
Stage 2	-	-	-	-	-	-	384	561	-	223	346	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	53.4	13.1
HCM LOS			F	B

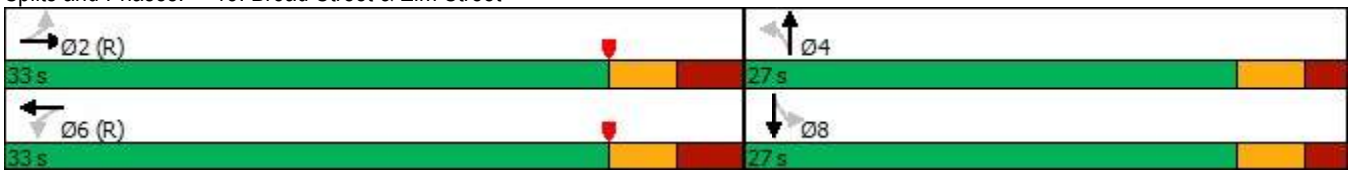
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	215	1098	-	-	-	-	622
HCM Lane V/C Ratio	0.7	0.14	-	-	-	-	0.287
HCM Control Delay (s)	53.4	8.8	-	-	-	-	13.1
HCM Lane LOS	F	A	-	-	-	-	B
HCM 95th %tile Q(veh)	4.5	0.5	-	-	-	-	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	362	73	33	303	79	51	149	87	124	115	81
Future Volume (vph)	75	362	73	33	303	79	51	149	87	124	115	81
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.969			0.945			0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1995	2048	0	1995	2035	0	1995	1985	0	1995	1970	0
Flt Permitted	0.520			0.478			0.570			0.475		
Satd. Flow (perm)	1092	2048	0	1004	2035	0	1197	1985	0	998	1970	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			28			56			66	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	78	377	76	34	316	82	53	155	91	129	120	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	453	0	34	398	0	53	246	0	129	204	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	37.0	37.0		37.0	37.0		12.0	12.0		12.0	12.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.20	0.20		0.20	0.20	
v/c Ratio	0.12	0.36		0.05	0.31		0.22	0.56		0.65	0.46	
Control Delay	6.7	7.2		6.7	7.9		20.5	20.6		36.4	16.5	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	6.7	7.2		6.7	8.2		20.5	20.6		36.4	16.5	
LOS	A	A		A	A		C	C		D	B	
Approach Delay		7.1			8.1			20.6			24.2	
Approach LOS		A			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	78	453	34	398	53	246	129	204
v/c Ratio	0.12	0.36	0.05	0.31	0.22	0.56	0.65	0.46
Control Delay	6.7	7.2	6.7	7.9	20.5	20.6	36.4	16.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	6.7	7.2	6.7	8.2	20.5	20.6	36.4	16.5
Queue Length 50th (ft)	10	63	5	82	16	62	44	44
Queue Length 95th (ft)	33	146	22	154	37	106	82	82
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	673	1272	619	1266	438	763	365	764
Starvation Cap Reductn	0	0	0	398	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.36	0.05	0.46	0.12	0.32	0.35	0.27

Intersection Summary

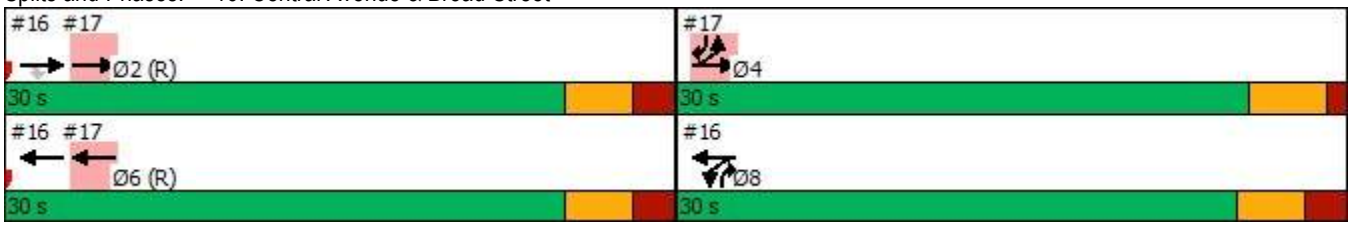


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	429	159	480	421	0	383		
Future Volume (vph)	429	159	480	421	0	383		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	2100	1785	1995	2100	0	1817		
Flt Permitted			0.950					
Satd. Flow (perm)	2100	1785	1995	2100	0	1817		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		166				270		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	716			
Travel Time (s)	8.7			2.8	19.5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	447	166	500	439	0	399		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	447	166	500	439	0	399		
Turn Type	NA	Perm	Prot	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2						
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0			7.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	23.5	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.5	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	27.5	27.5	22.5	60.0		22.5		
Actuated g/C Ratio	0.46	0.46	0.38	1.00		0.38		
v/c Ratio	0.46	0.18	0.67	0.21		0.47		
Control Delay	14.3	4.6	24.1	0.2		6.2		
Queue Delay	0.4	0.0	15.9	0.0		0.1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	14.7	4.6	40.0	0.2		6.3		
LOS	B	A	D	A		A		
Approach Delay	12.0			21.4	6.3			
Approach LOS	B			C	A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	447	166	500	439	399
v/c Ratio	0.46	0.18	0.67	0.21	0.47
Control Delay	14.3	4.6	24.1	0.2	6.2
Queue Delay	0.4	0.0	15.9	0.0	0.1
Total Delay	14.7	4.6	40.0	0.2	6.3
Queue Length 50th (ft)	107	0	171	0	28
Queue Length 95th (ft)	188	40	260	0	79
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	962	907	831	2085	914
Starvation Cap Reductn	151	0	319	0	0
Spillback Cap Reductn	176	0	0	0	62
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.18	0.98	0.21	0.47

Intersection Summary



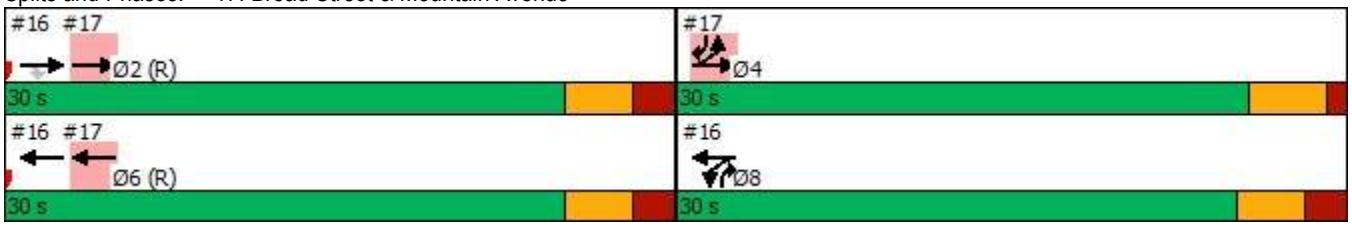
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	424	386	458	40	0	445		
Future Volume (vph)	424	386	458	40	0	445		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.988			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1995	2100	3942	0	0	3142		
Flt Permitted	0.950							
Satd. Flow (perm)	1995	2100	3942	0	0	3142		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			18			439		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	398		1032			
Travel Time (s)		2.5	10.9		28.1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	437	398	472	41	0	459		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	437	398	513	0	0	459		
Turn Type	Prot	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases								
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	7.0
Minimum Split (s)	23.5		30.0			23.5	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.5		25.0			25.5	25.0	25.0
Yellow Time (s)	3.5		3.0			3.5	3.0	3.0
All-Red Time (s)	1.0		2.0			1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	4.5		5.0			4.5		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	23.0	60.0	27.5			23.0		
Actuated g/C Ratio	0.38	1.00	0.46			0.38		
v/c Ratio	0.57	0.19	0.28			0.31		
Control Delay	19.5	0.2	11.0			2.2		
Queue Delay	10.8	0.0	2.8			0.1		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	30.3	0.2	13.7			2.3		
LOS	C	A	B			A		
Approach Delay		15.9	13.7		2.3			
Approach LOS		B	B		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 41.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	437	398	513	459
v/c Ratio	0.57	0.19	0.28	0.31
Control Delay	19.5	0.2	11.0	2.2
Queue Delay	10.8	0.0	2.8	0.1
Total Delay	30.3	0.2	13.7	2.3
Queue Length 50th (ft)	132	0	60	2
Queue Length 95th (ft)	199	0	91	26
Internal Link Dist (ft)		13	318	
Turn Bay Length (ft)				150
Base Capacity (vph)	847	2085	1816	1587
Starvation Cap Reductn	378	0	0	0
Spillback Cap Reductn	0	0	1160	264
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.93	0.19	0.78	0.35

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			↱
Traffic Volume (vph)	0	670	605	0	0	12
Future Volume (vph)	0	670	605	0	0	12
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	2100	3990	0	0	1817
Flt Permitted						
Satd. Flow (perm)	0	2100	3990	0	0	1817
Link Speed (mph)		30	30		30	
Link Distance (ft)		169	326		129	
Travel Time (s)		3.8	7.4		2.9	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	684	617	0	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	684	617	0	0	12
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.2%		ICU Level of Service A	
Analysis Period (min) 15			

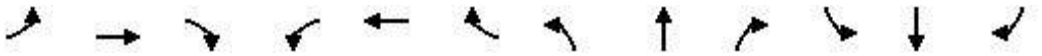
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			↱
Traffic Vol, veh/h	0	670	605	0	0	12
Future Vol, veh/h	0	670	605	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	684	617	0	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	309
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	693
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	693
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	693
HCM Lane V/C Ratio	-	-	0.018
HCM Control Delay (s)	-	-	10.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	558	10	35	600	0	8	0	28	0	0	0
Future Volume (vph)	0	558	10	35	600	0	8	0	28	0	0	0
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
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		0.998						0.894				
Flt Protected					0.997			0.989				
Satd. Flow (prot)	0	2075	0	0	2055	0	0	1857	0	0	2100	0
Flt Permitted					0.997			0.989				
Satd. Flow (perm)	0	2075	0	0	2055	0	0	1857	0	0	2100	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		473			427			221			152	
Travel Time (s)		9.2			8.3			6.0			4.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	575	10	36	619	0	8	0	29	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	585	0	0	655	0	0	37	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	558	10	35	600	0	8	0	28	0	0	0
Future Vol, veh/h	0	558	10	35	600	0	8	0	28	0	0	0
Conflicting Peds, #/hr	0	0	0	0	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	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	1	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	575	10	36	619	0	8	0	29	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	619	0	0	585	0	0	1271	1271	580	1286	1276	619
Stage 1	-	-	-	-	-	-	580	580	-	691	691	-
Stage 2	-	-	-	-	-	-	691	691	-	595	585	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	971	-	-	1000	-	-	146	169	518	143	168	492
Stage 1	-	-	-	-	-	-	504	503	-	438	449	-
Stage 2	-	-	-	-	-	-	438	449	-	494	501	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	971	-	-	1000	-	-	140	160	518	129	159	492
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	160	-	129	159	-
Stage 1	-	-	-	-	-	-	504	503	-	438	424	-
Stage 2	-	-	-	-	-	-	414	424	-	466	501	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	17.5	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	324	971	-	-	1000	-	-	-
HCM Lane V/C Ratio	0.115	-	-	-	0.036	-	-	-
HCM Control Delay (s)	17.5	0	-	-	8.7	0	-	0
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	567	16	41	625	13	33
Future Volume (vph)	567	16	41	625	13	33
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.902	
Flt Protected				0.997	0.986	
Satd. Flow (prot)	2071	0	0	2055	1868	0
Flt Permitted				0.997	0.986	
Satd. Flow (perm)	2071	0	0	2055	1868	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	427			175	238	
Travel Time (s)	8.3			3.4	6.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	579	16	42	638	13	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	595	0	0	680	47	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	567	16	41	625	13	33
Future Vol, veh/h	567	16	41	625	13	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	579	16	42	638	13	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	595	0	1309	587
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	722	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	991	-	177	513
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	485	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	991	-	165	513
Mov Cap-2 Maneuver	-	-	-	-	165	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	453	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	991	-
HCM Lane V/C Ratio	0.146	-	-	0.042	-
HCM Control Delay (s)	18.1	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	0	0	0	2	53
Future Volume (vph)	2	0	0	0	2	53
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					0.998
Satd. Flow (prot)	1956	0	0	0	0	2055
Flt Permitted	0.950					0.998
Satd. Flow (perm)	1956	0	0	0	0	2055
Link Speed (mph)	25		25			25
Link Distance (ft)	212		284			392
Travel Time (s)	5.8		7.7			10.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	0	0	0	2	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	0	0	0	60
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		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	2	0	0	0	2	53
Future Vol, veh/h	2	0	0	0	2	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	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	0	2	58

Major/Minor	Minor1		Major2	
Conflicting Flow All	62	-	0	0
Stage 1	0	-	-	-
Stage 2	62	-	-	-
Critical Hdwy	6.42	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	-	2.218	-
Pot Cap-1 Maneuver	944	0	-	-
Stage 1	-	0	-	-
Stage 2	961	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	944	-	-	-
Mov Cap-2 Maneuver	944	-	-	-
Stage 1	-	-	-	-
Stage 2	961	-	-	-

Approach	WB	SB
HCM Control Delay, s	8.8	
HCM LOS	A	

Minor Lane/Major Mvmt	WBLn1	SBL	SBT
Capacity (veh/h)	944	-	-
HCM Lane V/C Ratio	0.002	-	-
HCM Control Delay (s)	8.8	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	167	0	2	168	0	2
Future Volume (vph)	167	0	2	168	0	2
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.999		
Satd. Flow (prot)	2079	0	0	2098	1817	0
Flt Permitted				0.999		
Satd. Flow (perm)	2079	0	0	2098	1817	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	306			92	158	
Travel Time (s)	8.3			2.1	3.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%
Adj. Flow (vph)	186	0	2	187	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	0	0	189	2	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	0	2	168	0	2
Future Vol, veh/h	167	0	2	168	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	0	0	0	0	0
Mvmt Flow	186	0	2	187	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	186	0	377	186
Stage 1	-	-	-	-	186	-
Stage 2	-	-	-	-	191	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1401	-	629	861
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1401	-	628	861
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	861	-	-	1401	-
HCM Lane V/C Ratio	0.003	-	-	0.002	-
HCM Control Delay (s)	9.2	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	613	0	0	803	0	4
Future Volume (vph)	613	0	0	803	0	4
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3990	0	0	3990	0	1817
Flt Permitted						
Satd. Flow (perm)	3990	0	0	3990	0	1817
Link Speed (mph)	25			25	30	
Link Distance (ft)	479			203	148	
Travel Time (s)	13.1			5.5	3.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	639	0	0	836	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	639	0	0	836	0	4
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	613	0	0	803	0	4
Future Vol, veh/h	613	0	0	803	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	639	0	0	836	0	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	320
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	-	0	682
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	682
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	682	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-
HCM Control Delay (s)	10.3	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

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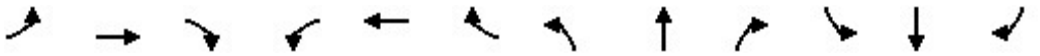
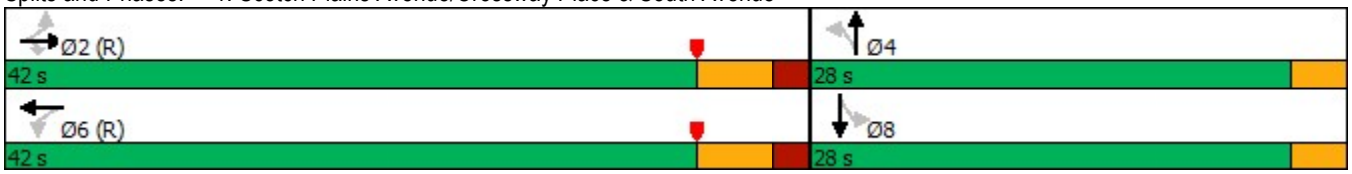


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	291	211	46	2	165	40	46	304	25	90	191	44
Future Volume (vph)	291	211	46	2	165	40	46	304	25	90	191	44
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.974			0.989			0.972	
Flt Protected		0.972					0.950			0.950		
Satd. Flow (prot)	0	1944	1700	0	1948	0	1900	1978	0	1900	1944	0
Flt Permitted		0.703			0.997		0.424			0.258		
Satd. Flow (perm)	0	1406	1700	0	1942	0	848	1978	0	516	1944	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			48		25			6			18	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	306	222	48	2	174	42	48	320	26	95	201	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	48	0	218	0	48	346	0	95	247	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	42.0	42.0	42.0	42.0	42.0		28.0	28.0		28.0	28.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	36.0	36.0	36.0	36.0	36.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		43.3	43.3		43.3		17.7	17.7		17.7	17.7	
Actuated g/C Ratio		0.62	0.62		0.62		0.25	0.25		0.25	0.25	
v/c Ratio		0.61	0.04		0.18		0.22	0.69		0.73	0.49	
Control Delay		19.9	5.8		6.5		21.3	29.8		54.0	22.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		19.9	5.8		6.5		21.3	29.8		54.0	22.9	
LOS		B	A		A		C	C		D	C	
Approach Delay		18.7			6.5			28.8			31.6	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 22.5		Intersection LOS: C	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	528	48	218	48	346	95	247
v/c Ratio	0.61	0.04	0.18	0.22	0.69	0.73	0.49
Control Delay	19.9	5.8	6.5	21.3	29.8	54.0	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	5.8	6.5	21.3	29.8	54.0	22.9
Queue Length 50th (ft)	217	5	30	17	133	38	84
Queue Length 95th (ft)	337	m15	75	37	186	#91	127
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	869	1069	1211	302	710	184	705
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.04	0.18	0.16	0.49	0.52	0.35

Intersection Summary

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

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	391	92	760	196	92	373
Future Volume (vph)	391	92	760	196	92	373
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.974					0.850
Flt Protected				0.962	0.950	
Satd. Flow (prot)	1948	0	0	3656	1900	1700
Flt Permitted				0.548	0.950	
Satd. Flow (perm)	1948	0	0	2082	1900	1700
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	412	97	800	206	97	393
Shared Lane Traffic (%)						
Lane Group Flow (vph)	509	0	0	1006	97	393
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	10.0		9.0	9.0	7.0	9.0
Minimum Split (s)	35.0		13.0	35.0	22.0	13.0
Total Split (s)	35.0		13.0	48.0	22.0	13.0
Total Split (%)	50.0%		18.6%	68.6%	31.4%	18.6%
Maximum Green (s)	29.0		10.0	42.0	17.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	9.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	37.2			52.9	8.5	23.8
Actuated g/C Ratio	0.53			0.76	0.12	0.34
v/c Ratio	0.49			1.15dl	0.42	0.68
Control Delay	14.2			4.9	33.7	25.2
Queue Delay	0.0			0.0	0.0	0.0

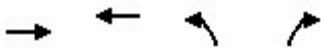
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	14.2			4.9	33.7	25.2
LOS	B			A	C	C
Approach Delay	14.2			4.9	26.9	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 12.7		Intersection LOS: B	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Broad Street & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	509	1006	97	393
v/c Ratio	0.49	1.15dl	0.42	0.68
Control Delay	14.2	4.9	33.7	25.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.2	4.9	33.7	25.2
Queue Length 50th (ft)	132	66	40	140
Queue Length 95th (ft)	262	112	78	190
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	1036	1789	461	582
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	0.49	0.56	0.21	0.68

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

MOVEMENT SUMMARY

Site: 101 [Westfield RAB_Existing_AM (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	18	0.0	19	0.0	0.671	16.9	LOS C	6.4	164.8	0.80	1.05	1.52	20.2
6	T1	308	4.0	328	4.0	0.671	17.0	LOS C	6.4	164.8	0.80	1.05	1.52	18.4
16	R2	350	4.0	372	4.0	0.671	12.0	LOS B	6.4	164.8	0.69	0.80	1.02	21.1
Approach		676	3.9	719	3.9	0.671	14.4	LOS B	6.4	164.8	0.74	0.93	1.26	19.7
North: SB - SR 28														
7	L2	526	5.0	560	5.0	0.648	13.3	LOS B	7.4	191.9	0.70	0.84	1.16	19.8
14	R2	524	5.0	557	5.0	0.648	10.0	LOS A	7.4	191.9	0.59	0.59	0.74	18.9
Approach		1050	5.0	1117	5.0	0.648	11.6	LOS B	7.4	191.9	0.65	0.71	0.95	19.4
West: EB - South Ave														
5u	U	2	0.0	2	0.0	1.126	92.7	LOS F	57.0	1464.8	1.00	3.14	7.04	5.2
5	L2	639	3.0	680	3.0	1.126	92.8	LOS F	57.0	1464.8	1.00	3.14	7.04	5.4
2	T1	440	5.0	468	5.0	1.126	52.2	LOS F	57.0	1464.8	0.79	1.92	3.96	10.3
Approach		1081	3.8	1150	3.8	1.126	76.3	LOS F	57.0	1464.8	0.92	2.64	5.78	6.8
All Vehicles		2807	4.3	2986	4.3	1.126	37.2	LOS E	57.0	1464.8	0.77	1.51	2.89	11.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

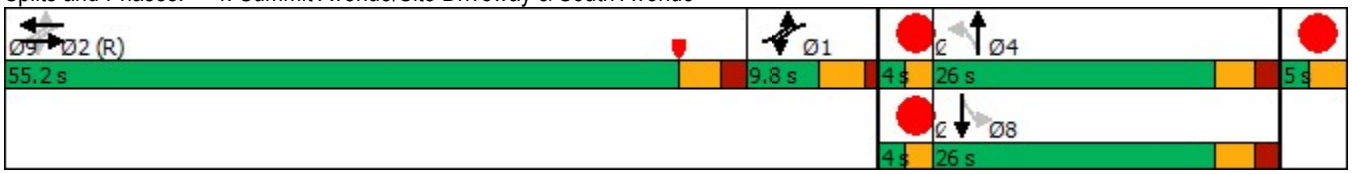
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	657	46	11	509	74	185	45	39	66	5	23
Future Volume (vph)	56	657	46	11	509	74	185	45	39	66	5	23
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		100	0		0	60		0	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.981			0.930			0.876	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1995	1945	0	1995	1974	0	1956	1953	0	1995	1840	0
Flt Permitted	0.271			0.178			0.738			0.700		
Satd. Flow (perm)	569	1945	0	374	1974	0	1519	1953	0	1470	1840	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			11			40			24	
Link Speed (mph)		25			30			25			30	
Link Distance (ft)		511			153			500			138	
Travel Time (s)		13.9			3.5			13.6			3.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	7%	5%	0%	5%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	58	684	48	11	530	77	193	47	41	69	5	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	732	0	11	607	0	193	88	0	69	29	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	2		1	2			4			8	
Permitted Phases	2			2			4			8		
Detector Phase	1	2		1	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	19.0		9.5	19.0		19.0	19.0		19.0	19.0	
Total Split (s)	9.8	55.2		9.8	55.2		26.0	26.0		26.0	26.0	
Total Split (%)	9.8%	55.2%		9.8%	55.2%		26.0%	26.0%		26.0%	26.0%	
Maximum Green (s)	5.3	50.2		5.3	50.2		21.0	21.0		21.0	21.0	
Yellow Time (s)	3.5	3.0		3.5	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	5.0		4.5	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lag	Lag	
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		160			160		160	160		160	160	
Act Effct Green (s)	58.5	52.7		58.5	52.7		17.7	17.7		17.7	17.7	
Actuated g/C Ratio	0.58	0.53		0.58	0.53		0.18	0.18		0.18	0.18	
v/c Ratio	0.14	0.71		0.04	0.58		0.72	0.23		0.27	0.08	
Control Delay	9.9	23.5		6.5	22.4		54.0	21.6		37.2	15.4	
Queue Delay	0.0	4.1		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	Ø3	Ø7	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	7	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	1.0	1.0	1.0
Minimum Split (s)	4.0	4.0	5.0
Total Split (s)	4.0	4.0	5.0
Total Split (%)	4%	4%	5%
Maximum Green (s)	2.0	2.0	2.0
Yellow Time (s)	2.0	2.0	3.0
All-Red Time (s)	0.0	0.0	0.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)	2.0	2.0	2.0
Flash Dont Walk (s)	0.0	0.0	0.0
Pedestrian Calls (#/hr)	160	160	160
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	9.9	27.6		6.5	22.4		54.0	21.6		37.2	15.4	
LOS	A	C		A	C		D	C		D	B	
Approach Delay		26.3			22.1			43.9			30.8	
Approach LOS		C			C			D			C	

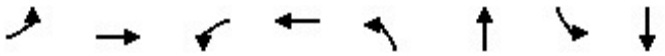
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 27.9		Intersection LOS: C	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue



Lane Group	Ø3	Ø7	Ø9
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	732	11	607	193	88	69	29
v/c Ratio	0.14	0.71	0.04	0.58	0.72	0.23	0.27	0.08
Control Delay	9.9	23.5	6.5	22.4	54.0	21.6	37.2	15.4
Queue Delay	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	27.6	6.5	22.4	54.0	21.6	37.2	15.4
Queue Length 50th (ft)	14	354	1	305	117	26	38	3
Queue Length 95th (ft)	30	506	m5	455	187	67	76	26
Internal Link Dist (ft)		431		73		420		58
Turn Bay Length (ft)					60			
Base Capacity (vph)	408	1026	304	1044	318	441	308	405
Starvation Cap Reductn	0	214	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.90	0.04	0.58	0.61	0.20	0.22	0.07

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	657	53	19	477	48	154
Future Volume (vph)	657	53	19	477	48	154
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.897	
Flt Protected				0.998	0.988	
Satd. Flow (prot)	1942	0	0	2000	1844	0
Flt Permitted				0.998	0.988	
Satd. Flow (perm)	1942	0	0	2000	1844	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	336			320	139	
Travel Time (s)	7.6			7.3	3.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	8%	0%	5%	4%	0%
Adj. Flow (vph)	699	56	20	507	51	164
Shared Lane Traffic (%)						
Lane Group Flow (vph)	755	0	0	527	215	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			

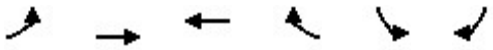
Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	657	53	19	477	48	154
Future Vol, veh/h	657	53	19	477	48	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	8	0	5	4	0
Mvmt Flow	699	56	20	507	51	164

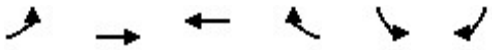
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	755	0	1274	727
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	547	-
Critical Hdwy	-	-	4.1	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.2	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	865	-	183	427
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	865	-	177	427
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	558	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	36.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	320	-	-	865	-
HCM Lane V/C Ratio	0.672	-	-	0.023	-
HCM Control Delay (s)	36.5	-	-	9.3	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	4.6	-	-	0.1	-



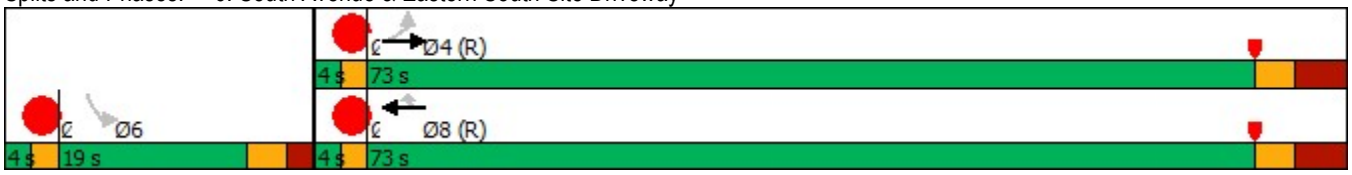
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Lane Configurations									
Traffic Volume (vph)	47	757	492	91	19	25			
Future Volume (vph)	47	757	492	91	19	25			
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100			
Storage Length (ft)	0			150	0	0			
Storage Lanes	0			1	1	0			
Taper Length (ft)	25				25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850	0.922				
Flt Protected		0.997			0.979				
Satd. Flow (prot)	0	2000	2000	1785	1843	0			
Flt Permitted		0.944			0.979				
Satd. Flow (perm)	0	1893	2000	1785	1843	0			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				97	27				
Link Speed (mph)		30	30		25				
Link Distance (ft)		320	446		143				
Travel Time (s)		7.3	10.1		3.9				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Heavy Vehicles (%)	0%	5%	5%	0%	0%	5%			
Bus Blockages (#/hr)	5	0	0	0	0	0			
Adj. Flow (vph)	50	805	523	97	20	27			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	855	523	97	47	0			
Turn Type	Perm	NA	NA	Perm	Perm				
Protected Phases		4	8				3	5	7
Permitted Phases	4			8	6				
Detector Phase	4	4	8	8	6				
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	7.0		1.0	1.0	1.0
Minimum Split (s)	23.0	23.0	23.0	23.0	19.0		4.0	4.0	4.0
Total Split (s)	73.0	73.0	73.0	73.0	19.0		4.0	4.0	4.0
Total Split (%)	73.0%	73.0%	73.0%	73.0%	19.0%		4%	4%	4%
Maximum Green (s)	66.0	66.0	66.0	66.0	14.0		2.0	2.0	2.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		2.0	2.0	2.0
All-Red Time (s)	4.0	4.0	4.0	4.0	2.0		0.0	0.0	0.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0				
Total Lost Time (s)		7.0	7.0	7.0	5.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	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
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max		None	None	None
Walk Time (s)	3.0	3.0	3.0	3.0	3.0		2.0	2.0	2.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	11.0		0.0	0.0	0.0
Pedestrian Calls (#/hr)	50	50	50	50	50		50	50	50
Act Effct Green (s)		66.8	66.8	66.8	14.8				
Actuated g/C Ratio		0.67	0.67	0.67	0.15				
v/c Ratio		0.68	0.39	0.08	0.16				
Control Delay		10.3	7.0	1.6	22.5				

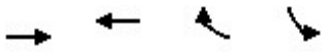


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Queue Delay		0.1	0.7	0.0	0.0				
Total Delay		10.4	7.6	1.6	22.5				
LOS		B	A	A	C				
Approach Delay		10.4	6.7		22.5				
Approach LOS		B	A		C				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: South Avenue & Eastern South Site Driveway

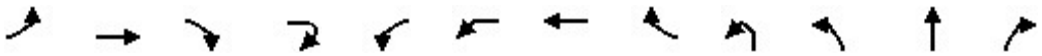




Lane Group	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	855	523	97	47
v/c Ratio	0.68	0.39	0.08	0.16
Control Delay	10.3	7.0	1.6	22.5
Queue Delay	0.1	0.7	0.0	0.0
Total Delay	10.4	7.6	1.6	22.5
Queue Length 50th (ft)	179	125	2	11
Queue Length 95th (ft)	315	m178	m8	45
Internal Link Dist (ft)	240	366		63
Turn Bay Length (ft)			150	
Base Capacity (vph)	1264	1336	1224	295
Starvation Cap Reductn	17	463	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	0.60	0.08	0.16

Intersection Summary

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



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	207	398	171	5	21	15	314	114	10	213	632	11
Future Volume (vph)	207	398	171	5	21	15	314	114	10	213	632	11
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954						0.850			0.997	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1900	3625	0	0	0	1900	2000	1700	0	1900	1994	0
Flt Permitted	0.388					0.368				0.114		
Satd. Flow (perm)	776	3625	0	0	0	736	2000	1700	0	228	1994	0
Right Turn on Red				Yes				No				Yes
Satd. Flow (RTOR)		1									1	
Link Speed (mph)		30					35				25	
Link Distance (ft)		446					926				398	
Travel Time (s)		10.1					18.0				10.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	218	419	180	5	22	16	331	120	11	224	665	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	604	0	0	0	38	331	120	0	235	677	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	39.0			8.0	8.0	39.0	39.0	13.0	13.0	45.0	
Total Split (%)	8.0%	39.0%			8.0%	8.0%	39.0%	39.0%	13.0%	13.0%	45.0%	
Maximum Green (s)	5.0	31.0			5.0	5.0	31.0	31.0	10.0	10.0	37.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	C-Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							50	50				
Act Effct Green (s)	42.6	34.6				41.1	31.0	31.0		49.6	38.2	
Actuated g/C Ratio	0.43	0.35				0.41	0.31	0.31		0.50	0.38	
v/c Ratio	0.56	0.48				0.11	0.53	0.23		0.84	0.89	
Control Delay	13.9	18.8				16.8	32.4	27.1		45.3	45.1	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

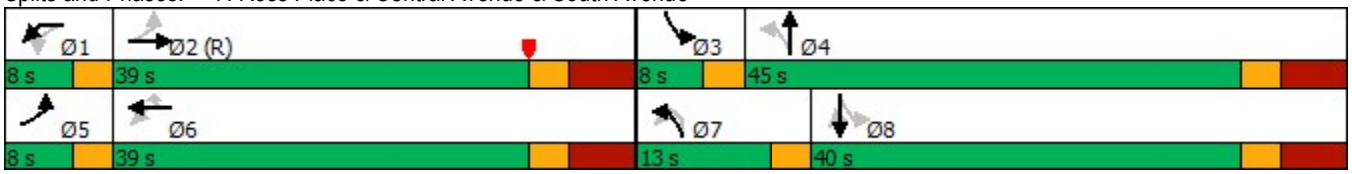


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	92	570	80	161
Future Volume (vph)	92	570	80	161
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1900	2000	1700	0
Flt Permitted	0.124			
Satd. Flow (perm)	248	2000	1700	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			153	
Link Speed (mph)		25		
Link Distance (ft)		792		
Travel Time (s)		21.6		
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%
Adj. Flow (vph)	97	600	84	169
Shared Lane Traffic (%)				
Lane Group Flow (vph)	97	600	253	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	38.0	38.0	
Total Split (s)	8.0	40.0	40.0	
Total Split (%)	8.0%	40.0%	40.0%	
Maximum Green (s)	5.0	32.0	32.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		23.0	23.0	
Pedestrian Calls (#/hr)		50	50	
Act Effct Green (s)	41.6	31.6	31.6	
Actuated g/C Ratio	0.42	0.32	0.32	
v/c Ratio	0.52	0.95	0.39	
Control Delay	25.2	49.3	7.1	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	13.9	18.8				16.8	32.4	27.1		45.3	45.1	
LOS	B	B				B	C	C		D	D	
Approach Delay		17.5					29.9				45.1	
Approach LOS		B					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 32.8		Intersection LOS: C	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	25.2	49.3	7.1	
LOS	C	D	A	
Approach Delay		35.6		
Approach LOS		D		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	218	604	38	331	120	235	677	97	600	253
v/c Ratio	0.56	0.48	0.11	0.53	0.23	0.84	0.89	0.52	0.95	0.39
Control Delay	13.9	18.8	16.8	32.4	27.1	45.3	45.1	25.2	49.3	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	18.8	16.8	32.4	27.1	45.3	45.1	25.2	49.3	7.1
Queue Length 50th (ft)	63	121	14	173	57	84	405	28	240	23
Queue Length 95th (ft)	m92	181	32	262	102	#214	#632	m61	#559	m68
Internal Link Dist (ft)		366		846			318		712	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	391	1254	361	620	527	280	762	185	640	648
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	0.56	0.48	0.11	0.53	0.23	0.84	0.89	0.52	0.94	0.39

Intersection Summary

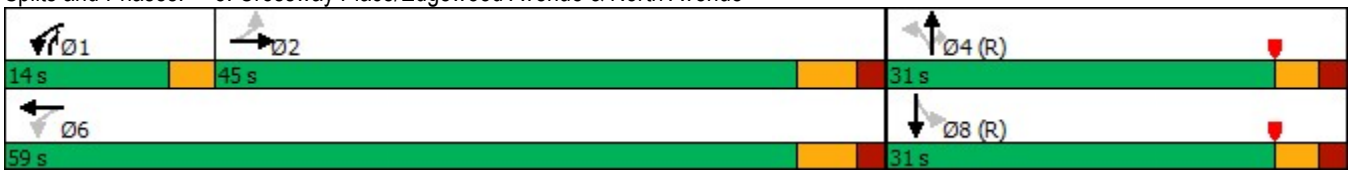
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

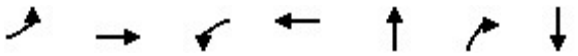
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	691	26	128	342	0	132	55	417	26	161	5
Future Volume (vph)	5	691	26	128	342	0	132	55	417	26	161	5
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995							0.850		0.997	
Flt Protected	0.950			0.950				0.966			0.993	
Satd. Flow (prot)	1900	1990	0	1900	2000	0	0	1932	1700	0	1980	0
Flt Permitted	0.546			0.109				0.607			0.942	
Satd. Flow (perm)	1092	1990	0	218	2000	0	0	1214	1700	0	1878	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							119		1	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	5	727	27	135	360	0	139	58	439	27	169	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	754	0	135	360	0	0	197	439	0	201	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	45.0	45.0		14.0	59.0		31.0	31.0	14.0	31.0	31.0	
Total Split (%)	50.0%	50.0%		15.6%	65.6%		34.4%	34.4%	15.6%	34.4%	34.4%	
Maximum Green (s)	39.0	39.0		11.0	53.0		26.0	26.0	11.0	26.0	26.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	41.7	41.7		56.0	53.0			26.0	39.3		26.0	
Actuated g/C Ratio	0.46	0.46		0.62	0.59			0.29	0.44		0.29	
v/c Ratio	0.01	0.82		0.47	0.31			0.56	0.54		0.37	
Control Delay	14.2	30.3		12.8	10.2			34.5	15.8		27.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	14.2	30.3		12.8	10.2			34.5	15.8		27.8	
LOS	B	C		B	B			C	B		C	
Approach Delay		30.2			10.9			21.6			27.8	
Approach LOS		C			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 80 (89%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 22.8		Intersection LOS: C	
Intersection Capacity Utilization 79.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue

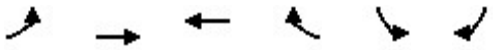




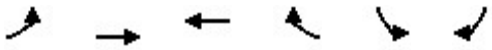
Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	754	135	360	197	439	201
v/c Ratio	0.01	0.82	0.47	0.31	0.56	0.54	0.37
Control Delay	14.2	30.3	12.8	10.2	34.5	15.8	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	30.3	12.8	10.2	34.5	15.8	27.8
Queue Length 50th (ft)	2	354	28	95	95	128	90
Queue Length 95th (ft)	8	#603	55	144	167	204	151
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	506	923	341	1177	350	856	543
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.82	0.40	0.31	0.56	0.51	0.37

Intersection Summary

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



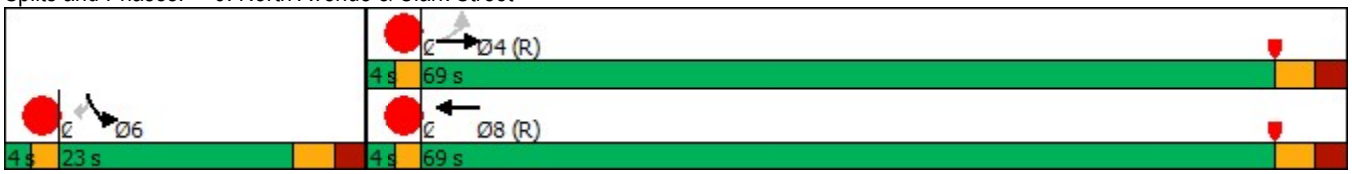
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Lane Configurations									
Traffic Volume (vph)	8	690	544	153	202	14			
Future Volume (vph)	8	690	544	153	202	14			
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100			
Storage Length (ft)	0			0	0	50			
Storage Lanes	0			0	1	1			
Taper Length (ft)	25				25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt			0.970			0.850			
Flt Protected		0.999			0.950				
Satd. Flow (prot)	0	2018	1963	0	1918	1785			
Flt Permitted		0.993			0.950				
Satd. Flow (perm)	0	2006	1963	0	1918	1785			
Right Turn on Red				No		Yes			
Satd. Flow (RTOR)						9			
Link Speed (mph)		35	35		25				
Link Distance (ft)		178	387		163				
Travel Time (s)		3.5	7.5		4.4				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96			
Heavy Vehicles (%)	0%	4%	4%	3%	4%	0%			
Adj. Flow (vph)	8	719	567	159	210	15			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	727	726	0	210	15			
Turn Type	Perm	NA	NA		Prot	Perm			
Protected Phases		4	8		6		3	5	7
Permitted Phases	4					6			
Detector Phase	4	4	8		6	6			
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0		5.0	5.0	1.0	1.0	1.0
Minimum Split (s)	30.5	30.5	30.5		19.5	19.5	4.0	4.0	4.0
Total Split (s)	69.0	69.0	69.0		23.0	23.0	4.0	4.0	4.0
Total Split (%)	69.0%	69.0%	69.0%		23.0%	23.0%	4%	4%	4%
Maximum Green (s)	63.5	63.5	63.5		17.5	17.5	2.0	2.0	2.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5	0.0	0.0	0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0			
Total Lost Time (s)		5.5	5.5		5.5	5.5			
Lead/Lag	Lag	Lag	Lag		Lag	Lag	Lead	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
Recall Mode	C-Max	C-Max	C-Max		Max	Max	None	None	None
Walk Time (s)	3.0	3.0	3.0		3.0	3.0	2.0	2.0	2.0
Flash Dont Walk (s)	22.0	22.0	22.0		11.0	11.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	20	20	20		20	20	20	20	20
Act Effct Green (s)		65.9	65.9		19.9	19.9			
Actuated g/C Ratio		0.66	0.66		0.20	0.20			
v/c Ratio		0.55	0.56		0.55	0.04			
Control Delay		11.4	10.9		42.9	23.1			
Queue Delay		0.1	2.7		0.0	0.0			

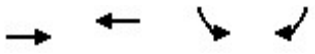


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Total Delay		11.5	13.6		42.9	23.1			
LOS		B	B		D	C			
Approach Delay		11.5	13.6		41.6				
Approach LOS		B	B		D				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			

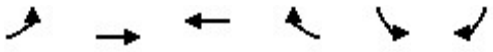
Splits and Phases: 9: North Avenue & Clark Street





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	727	726	210	15
v/c Ratio	0.55	0.56	0.55	0.04
Control Delay	11.4	10.9	42.9	23.1
Queue Delay	0.1	2.7	0.0	0.0
Total Delay	11.5	13.6	42.9	23.1
Queue Length 50th (ft)	210	189	119	3
Queue Length 95th (ft)	342	321	202	21
Internal Link Dist (ft)	98	307	83	
Turn Bay Length (ft)				50
Base Capacity (vph)	1322	1293	381	362
Starvation Cap Reductn	0	434	0	0
Spillback Cap Reductn	100	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.85	0.55	0.04

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	176	179	0	46	44
Future Volume (vph)	0	176	179	0	46	44
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.934	
Flt Protected					0.975	
Satd. Flow (prot)	0	2079	2039	0	1855	0
Flt Permitted					0.975	
Satd. Flow (perm)	0	2079	2039	0	1855	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		108	163		284	
Travel Time (s)		2.9	4.4		7.7	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	1%	3%	0%	6%	0%
Adj. Flow (vph)	0	248	252	0	65	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	248	252	0	127	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.9%		ICU Level of Service A	
Analysis Period (min) 15			

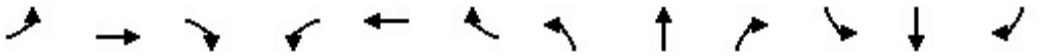
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	176	179	0	46	44
Future Vol, veh/h	0	176	179	0	46	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	0	1	3	0	6	0
Mvmt Flow	0	248	252	0	65	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	500	252
Stage 1	-	-	-	-	252	-
Stage 2	-	-	-	-	248	-
Critical Hdwy	-	-	-	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	-	-	3.554	3.3
Pot Cap-1 Maneuver	0	-	-	0	523	792
Stage 1	0	-	-	0	781	-
Stage 2	0	-	-	0	784	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	523	792
Mov Cap-2 Maneuver	-	-	-	-	523	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	627
HCM Lane V/C Ratio	-	-	0.202
HCM Control Delay (s)	-	-	12.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.8

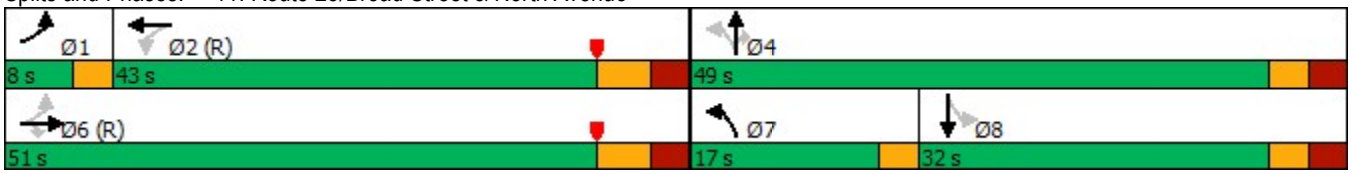


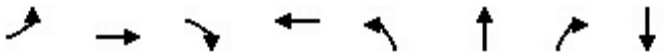
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	412	350	223	474	7	247	574	167	13	475	102
Future Volume (vph)	195	412	350	223	474	7	247	574	167	13	475	102
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		125	0		0	0		0	0		75
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.998				0.850		0.974	
Flt Protected	0.950				0.984		0.950				0.999	
Satd. Flow (prot)	1847	1509	1700	0	3758	0	1956	2039	1684	0	3714	0
Flt Permitted	0.237				0.697		0.180				0.915	
Satd. Flow (perm)	461	1509	1700	0	2662	0	371	2039	1684	0	3401	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			327		1						24	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		387			555			498			430	
Travel Time (s)		7.5			15.1			13.6			11.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	6%	5%	5%	4%	0%	2%	3%	6%	0%	5%	3%
Adj. Flow (vph)	212	448	380	242	515	8	268	624	182	14	516	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	448	380	0	765	0	268	624	182	0	641	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	8.0	51.0	51.0	43.0	43.0		17.0	49.0	49.0	32.0	32.0	
Total Split (%)	8.0%	51.0%	51.0%	43.0%	43.0%		17.0%	49.0%	49.0%	32.0%	32.0%	
Maximum Green (s)	5.0	44.0	44.0	36.0	36.0		14.0	43.0	43.0	26.0	26.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		20	20	20	20			20	20	20	20	
Act Effct Green (s)	51.4	47.4	47.4		37.4		42.6	39.6	39.6		23.3	
Actuated g/C Ratio	0.51	0.47	0.47		0.37		0.43	0.40	0.40		0.23	
v/c Ratio	0.64	0.63	0.39		0.77		0.73	0.77	0.27		0.79	
Control Delay	24.4	23.6	4.3		32.3		31.0	33.2	20.9		42.2	
Queue Delay	0.0	1.0	0.4		0.0		0.6	0.0	0.0		0.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	24.4	24.6	4.6		32.3		31.6	33.2	20.9		42.7	
LOS	C	C	A		C		C	C	C		D	
Approach Delay		17.3			32.3			30.7			42.7	
Approach LOS		B			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 29.3		Intersection LOS: C	
Intersection Capacity Utilization 107.8%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	212	448	380	765	268	624	182	641
v/c Ratio	0.64	0.63	0.39	0.77	0.73	0.77	0.27	0.79
Control Delay	24.4	23.6	4.3	32.3	31.0	33.2	20.9	42.2
Queue Delay	0.0	1.0	0.4	0.0	0.6	0.0	0.0	0.5
Total Delay	24.4	24.6	4.6	32.3	31.6	33.2	20.9	42.7
Queue Length 50th (ft)	84	241	36	229	107	327	74	192
Queue Length 95th (ft)	#140	360	57	305	165	452	121	252
Internal Link Dist (ft)		307		475		418		350
Turn Bay Length (ft)	185		125					
Base Capacity (vph)	333	714	977	996	380	876	724	902
Starvation Cap Reductn	0	95	215	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	14	0	0	58
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.72	0.50	0.77	0.73	0.71	0.25	0.76

Intersection Summary

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

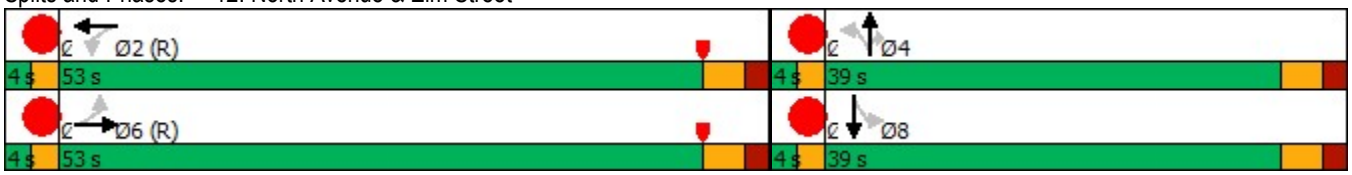
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	550	32	18	659	150	10	14	3	83	20	56
Future Volume (vph)	69	550	32	18	659	150	10	14	3	83	20	56
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.973				0.850		0.952	
Flt Protected		0.995			0.999			0.980			0.975	
Satd. Flow (prot)	0	3722	0	0	3723	0	0	2058	1785	0	1919	0
Flt Permitted		0.749			0.931			0.884			0.822	
Satd. Flow (perm)	0	2802	0	0	3470	0	0	1856	1785	0	1618	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			36				65		30	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			460			167			176	
Travel Time (s)		4.4			12.5			3.8			4.0	
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 (%)	0%	7%	0%	0%	5%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	77	611	36	20	732	167	11	16	3	92	22	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	724	0	0	919	0	0	27	3	0	176	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	19.0	19.0		19.0	19.0		19.0	19.0	19.0	19.0	19.0	
Total Split (s)	53.0	53.0		53.0	53.0		39.0	39.0	39.0	39.0	39.0	
Total Split (%)	53.0%	53.0%		53.0%	53.0%		39.0%	39.0%	39.0%	39.0%	39.0%	
Maximum Green (s)	48.0	48.0		48.0	48.0		34.0	34.0	34.0	34.0	34.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
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)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag	Lag	Lag	Lag	
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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	160	160		160	160		160	160	160	160	160	
Act Effct Green (s)		62.4			62.4			16.1	16.1		16.1	
Actuated g/C Ratio		0.62			0.62			0.16	0.16		0.16	
v/c Ratio		0.41			0.42			0.09	0.01		0.62	
Control Delay		9.2			8.1			35.0	0.0		41.7	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		9.2			8.1			35.0	0.0		41.7	
LOS		A			A			D	A		D	
Approach Delay		9.2			8.1			31.5			41.7	

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	4.0	4.0	4.0	4.0
Total Split (s)	4.0	4.0	4.0	4.0
Total Split (%)	4%	4%	4%	4%
Maximum Green (s)	2.0	2.0	2.0	2.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	160	160	160	160
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			A			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 65.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 12: North Avenue & Elm Street

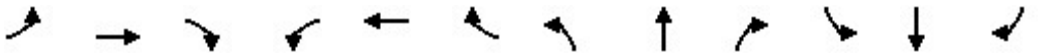


Lane Group	Ø1	Ø3	Ø5	Ø7
Approach LOS				
Intersection Summary				

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	724	919	27	3	176
v/c Ratio	0.41	0.42	0.09	0.01	0.62
Control Delay	9.2	8.1	35.0	0.0	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	8.1	35.0	0.0	41.7
Queue Length 50th (ft)	80	81	15	0	89
Queue Length 95th (ft)	156	m173	37	0	149
Internal Link Dist (ft)	83	380	87		96
Turn Bay Length (ft)					
Base Capacity (vph)	1752	2179	631	649	569
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	0.41	0.42	0.04	0.00	0.31

Intersection Summary

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

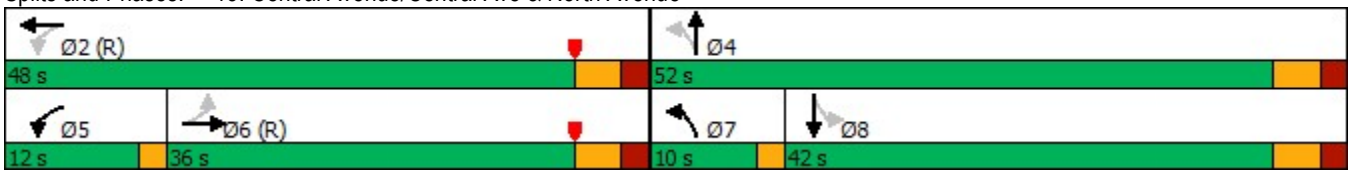


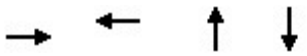
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	445	119	175	538	27	240	585	128	15	439	14
Future Volume (vph)	19	445	119	175	538	27	240	585	128	15	439	14
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			75			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.969			0.995			0.980			0.995	
Flt Protected		0.998			0.988			0.988			0.998	
Satd. Flow (prot)	0	3675	0	0	3736	0	0	3679	0	0	3773	0
Flt Permitted		0.910			0.586			0.646			0.904	
Satd. Flow (perm)	0	3351	0	0	2216	0	0	2406	0	0	3418	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					5			23				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		221			706			792			210	
Travel Time (s)		6.0			13.8			21.6			5.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	20	468	125	184	566	28	253	616	135	16	462	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	613	0	0	778	0	0	1004	0	0	493	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	31.6	31.6		7.1	31.6		7.1	31.6		31.6	31.6	
Total Split (s)	36.0	36.0		12.0	48.0		10.0	52.0		42.0	42.0	
Total Split (%)	36.0%	36.0%		12.0%	48.0%		10.0%	52.0%		42.0%	42.0%	
Maximum Green (s)	30.4	30.4		9.9	42.4		7.9	46.4		36.4	36.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	C-Max		Max	None		None	None	
Walk Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	21.0	21.0			21.0			21.0		21.0	21.0	
Pedestrian Calls (#/hr)	20	20			20			20		20	20	
Act Effct Green (s)		30.4			44.1			44.7			34.7	
Actuated g/C Ratio		0.30			0.44			0.45			0.35	
v/c Ratio		0.60			0.71			0.88			0.42	
Control Delay		30.5			25.8			34.2			25.8	
Queue Delay		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		30.5			25.8			34.2			25.8	
LOS		C			C			C			C	
Approach Delay		30.5			25.8			34.2			25.8	
Approach LOS		C			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 89.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 13: Central Avenue/Central Ave & North Avenue





Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	613	778	1004	493
v/c Ratio	0.60	0.71	0.88	0.42
Control Delay	30.5	25.8	34.2	25.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.5	25.8	34.2	25.8
Queue Length 50th (ft)	174	184	243	121
Queue Length 95th (ft)	243	238	m300	165
Internal Link Dist (ft)	141	626	712	130
Turn Bay Length (ft)				
Base Capacity (vph)	1018	1101	1184	1244
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	0.60	0.71	0.85	0.40

Intersection Summary

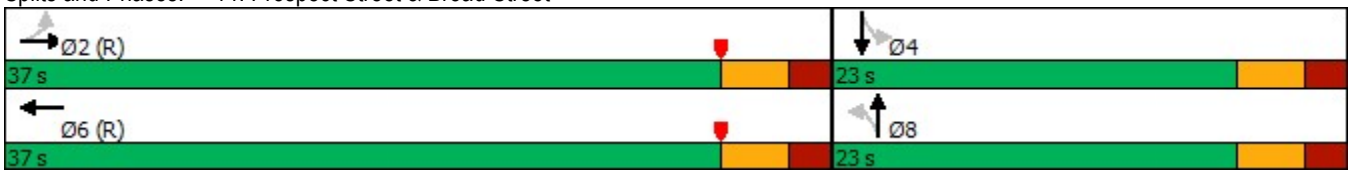
m Volume for 95th percentile queue is metered by upstream signal.

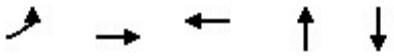
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	542	0	0	579	37	5	41	10	0	0	118
Future Volume (vph)	62	542	0	0	579	37	5	41	10	0	0	118
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992			0.975			0.865	
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1900	2000	0	0	1984	0	0	1942	0	0	1730	0
Flt Permitted	0.381							0.954				
Satd. Flow (perm)	762	2000	0	0	1984	0	0	1860	0	0	1730	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			11			246	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	65	571	0	0	609	39	5	43	11	0	0	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	571	0	0	648	0	0	59	0	0	124	0
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2			6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	18.0	18.0			18.0		10.0	10.0		23.0	23.0	
Total Split (s)	37.0	37.0			37.0		23.0	23.0		23.0	23.0	
Total Split (%)	61.7%	61.7%			61.7%		38.3%	38.3%		38.3%	38.3%	
Maximum Green (s)	32.0	32.0			32.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
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	
Recall Mode	C-Max	C-Max			C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		4.0	4.0		7.0	7.0	
Flash Dont Walk (s)	6.0	6.0			6.0		1.0	1.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	46.0	46.0			46.0			7.1			7.1	
Actuated g/C Ratio	0.77	0.77			0.77			0.12			0.12	
v/c Ratio	0.11	0.37			0.43			0.26			0.29	
Control Delay	3.6	4.2			2.7			22.9			1.8	
Queue Delay	0.0	0.3			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	3.6	4.5			2.7			22.9			1.8	
LOS	A	A			A			C			A	
Approach Delay		4.4			2.7			22.9			1.8	
Approach LOS		A			A			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 59.5 (99%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			

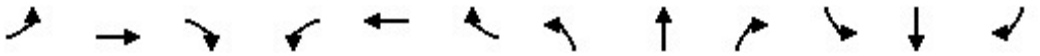
Splits and Phases: 14: Prospect Street & Broad Street





Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	65	571	648	59	124
v/c Ratio	0.11	0.37	0.43	0.26	0.29
Control Delay	3.6	4.2	2.7	22.9	1.8
Queue Delay	0.0	0.3	0.0	0.0	0.0
Total Delay	3.6	4.5	2.7	22.9	1.8
Queue Length 50th (ft)	5	61	31	16	0
Queue Length 95th (ft)	17	120	65	44	0
Internal Link Dist (ft)		350	402	144	229
Turn Bay Length (ft)	128				
Base Capacity (vph)	584	1534	1523	565	691
Starvation Cap Reductn	0	387	59	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.11	0.50	0.44	0.10	0.18

Intersection Summary



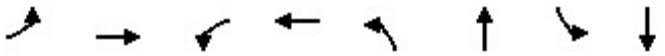
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	507	24	55	541	81	11	28	29	81	66	68
Future Volume (vph)	22	507	24	55	541	81	11	28	29	81	66	68
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.981			0.922			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1900	1986	0	1900	1962	0	1900	1844	0	1900	1846	0
Flt Permitted	0.368			0.427			0.667			0.718		
Satd. Flow (perm)	736	1986	0	854	1962	0	1334	1844	0	1436	1846	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			16			31			72	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	23	534	25	58	569	85	12	29	31	85	69	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	559	0	58	654	0	12	60	0	85	141	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	43.3	43.3		43.3	43.3		9.3	9.3		9.3	9.3	
Actuated g/C Ratio	0.72	0.72		0.72	0.72		0.16	0.16		0.16	0.16	
v/c Ratio	0.04	0.39		0.09	0.46		0.06	0.19		0.38	0.41	
Control Delay	3.6	3.9		4.1	6.7		20.7	14.0		27.2	15.6	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	3.6	3.9		4.1	6.9		20.7	14.0		27.2	15.6	
LOS	A	A		A	A		C	B		C	B	
Approach Delay		3.9			6.7			15.1			20.0	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 61.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	559	58	654	12	60	85	141
v/c Ratio	0.04	0.39	0.09	0.46	0.06	0.19	0.38	0.41
Control Delay	3.6	3.9	4.1	6.7	20.7	14.0	27.2	15.6
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	3.6	3.9	4.1	6.9	20.7	14.0	27.2	15.6
Queue Length 50th (ft)	2	35	3	143	4	9	28	22
Queue Length 95th (ft)	m5	71	21	239	15	34	60	61
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	531	1435	616	1421	489	695	526	722
Starvation Cap Reductn	0	0	0	258	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.39	0.09	0.56	0.02	0.09	0.16	0.20

Intersection Summary

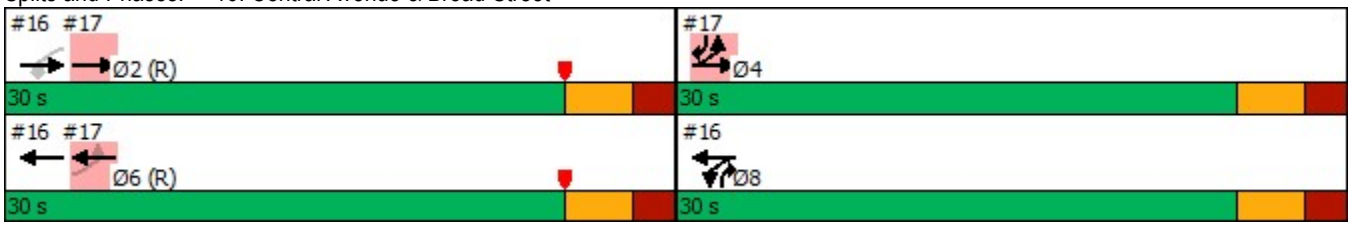
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	556	56	372	631	0	536		
Future Volume (vph)	556	56	372	631	0	536		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	3800	1700	1900	2000	0	1730		
Flt Permitted			0.402					
Satd. Flow (perm)	3800	1700	804	2000	0	1730		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		59				173		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	728			
Travel Time (s)	8.7			2.8	19.9			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%		
Adj. Flow (vph)	585	59	392	664	0	564		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	585	59	392	664	0	564		
Turn Type	NA	Perm	D.P+P	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2	2					
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0			5.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	24.0	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.0	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	26.9	26.9	50.0	60.0		23.1		
Actuated g/C Ratio	0.45	0.45	0.83	1.00		0.38		
v/c Ratio	0.34	0.07	0.36	0.33		0.73		
Control Delay	14.8	6.9	2.9	0.7		16.6		
Queue Delay	0.0	0.0	0.4	0.0		0.1		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	14.9	6.9	3.3	0.7		16.7		
LOS	B	A	A	A		B		
Approach Delay	14.1			1.7	16.7			
Approach LOS	B			A	B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 25 (42%), Referenced to phase 2:EBWB and 6:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 9.0		Intersection LOS: A	
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			

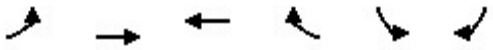
Splits and Phases: 16: Central Avenue & Broad Street



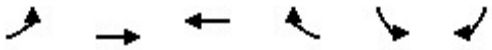


Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	585	59	392	664	564
v/c Ratio	0.34	0.07	0.36	0.33	0.73
Control Delay	14.8	6.9	2.9	0.7	16.6
Queue Delay	0.0	0.0	0.4	0.0	0.1
Total Delay	14.9	6.9	3.3	0.7	16.7
Queue Length 50th (ft)	93	1	3	2	106
Queue Length 95th (ft)	135	29	28	8	210
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	1701	793	1139	2000	821
Starvation Cap Reductn	0	0	340	0	0
Spillback Cap Reductn	136	0	0	101	19
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.07	0.49	0.35	0.70

Intersection Summary



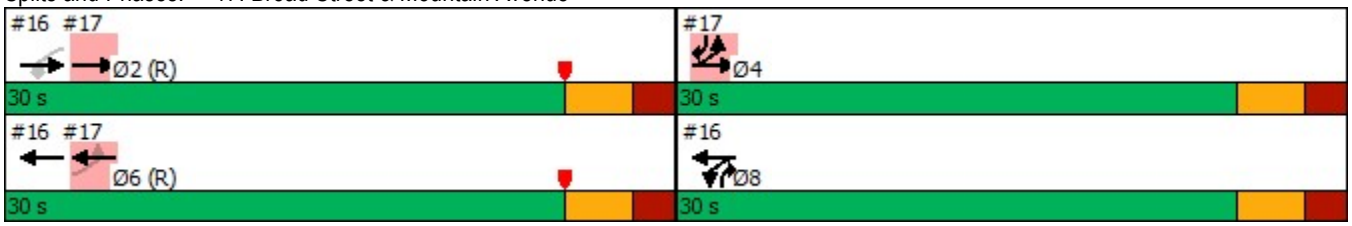
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	660	400	550	21	0	453		
Future Volume (vph)	660	400	550	21	0	453		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.995			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1900	2000	3781	0	0	2992		
Flt Permitted	0.392							
Satd. Flow (perm)	784	2000	3781	0	0	2992		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			8			310		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	392		630			
Travel Time (s)		2.5	10.7		17.2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%		
Adj. Flow (vph)	695	421	579	22	0	477		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	695	421	601	0	0	477		
Turn Type	D.P+P	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases	6							
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	5.0
Minimum Split (s)	24.0		30.0			24.0	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.0		25.0			25.0	25.0	25.0
Yellow Time (s)	3.0		3.0			3.0	3.0	3.0
All-Red Time (s)	2.0		2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	5.0		5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	50.0	60.0	26.9			23.1		
Actuated g/C Ratio	0.83	1.00	0.45			0.38		
v/c Ratio	0.64	0.21	0.35			0.35		
Control Delay	8.2	0.2	12.1			5.0		
Queue Delay	1.5	0.0	0.0			0.0		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	9.7	0.2	12.1			5.0		
LOS	A	A	B			A		
Approach Delay		6.1	12.1		5.0			
Approach LOS		A	B		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 25 (42%), Referenced to phase 2:EBWB and 6:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 7.5		Intersection LOS: A	
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 17: Broad Street & Mountain Avenue

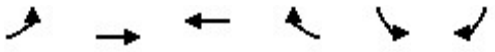




Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	695	421	601	477
v/c Ratio	0.64	0.21	0.35	0.35
Control Delay	8.2	0.2	12.1	5.0
Queue Delay	1.5	0.0	0.0	0.0
Total Delay	9.7	0.2	12.1	5.0
Queue Length 50th (ft)	87	0	74	20
Queue Length 95th (ft)	121	m0	110	48
Internal Link Dist (ft)		13	312	
Turn Bay Length (ft)				150
Base Capacity (vph)	1131	2000	1697	1427
Starvation Cap Reductn	251	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.21	0.35	0.33

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	695	512	0	0	18
Future Volume (vph)	0	695	512	0	0	18
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	2000	2000	0	0	1730
Flt Permitted						
Satd. Flow (perm)	0	2000	2000	0	0	1730
Link Speed (mph)		30	30		30	
Link Distance (ft)		153	336		112	
Travel Time (s)		3.5	7.6		2.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	0	732	539	0	0	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	732	539	0	0	19
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↗
Traffic Vol, veh/h	0	695	512	0	0	18
Future Vol, veh/h	0	695	512	0	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	732	539	0	0	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	539
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.345
Pot Cap-1 Maneuver	0	-	-	0	0	537
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	537
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	537
HCM Lane V/C Ratio	-	-	0.035
HCM Control Delay (s)	-	-	11.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	731	13	44	716	5	19
Future Volume (vph)	731	13	44	716	5	19
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.892	
Flt Protected				0.997	0.990	
Satd. Flow (prot)	1996	0	0	1994	1766	0
Flt Permitted				0.997	0.990	
Satd. Flow (perm)	1996	0	0	1994	1766	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	464			455	250	
Travel Time (s)	9.0			8.9	6.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	769	14	46	754	5	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	783	0	0	800	25	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	731	13	44	716	5	19
Future Vol, veh/h	731	13	44	716	5	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	769	14	46	754	5	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	783	0	1622	776
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	846	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	822	-	111	393
Stage 1	-	-	-	-	449	-
Stage 2	-	-	-	-	416	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	822	-	100	393
Mov Cap-2 Maneuver	-	-	-	-	100	-
Stage 1	-	-	-	-	449	-
Stage 2	-	-	-	-	376	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	21.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	244	-	-	822	-
HCM Lane V/C Ratio	0.104	-	-	0.056	-
HCM Control Delay (s)	21.5	-	-	9.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	715	20	51	755	8	22
Future Volume (vph)	715	20	51	755	8	22
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.900	
Flt Protected				0.997	0.987	
Satd. Flow (prot)	1992	0	0	1994	1777	0
Flt Permitted				0.997	0.987	
Satd. Flow (perm)	1992	0	0	1994	1777	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	455			178	232	
Travel Time (s)	8.9			3.5	5.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	753	21	54	795	8	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	774	0	0	849	31	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.8%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	715	20	51	755	8	22
Future Vol, veh/h	715	20	51	755	8	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	753	21	54	795	8	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	774	0	1667	764
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	903	-
Critical Hdwy	-	-	4.15	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.245	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	828	-	104	399
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	391	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	828	-	92	399
Mov Cap-2 Maneuver	-	-	-	-	92	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	345	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	25
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	211	-	-	828	-
HCM Lane V/C Ratio	0.15	-	-	0.065	-
HCM Control Delay (s)	25	-	-	9.6	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	0	0	0	2	85
Future Volume (vph)	4	0	0	0	2	85
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					0.999
Satd. Flow (prot)	1956	0	0	0	0	2057
Flt Permitted	0.950					0.999
Satd. Flow (perm)	1956	0	0	0	0	2057
Link Speed (mph)	25		25			25
Link Distance (ft)	209		284			409
Travel Time (s)	5.7		7.7			11.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	0	0	0	2	92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	0	0	94
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	0	0	2	85
Future Vol, veh/h	4	0	0	0	2	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	0	0	0	2	92

Major/Minor	Minor1		Major2	
Conflicting Flow All	96	-	0	0
Stage 1	0	-	-	-
Stage 2	96	-	-	-
Critical Hdwy	6.42	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	-	2.218	-
Pot Cap-1 Maneuver	903	0	-	-
Stage 1	-	0	-	-
Stage 2	928	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	903	-	-	-
Mov Cap-2 Maneuver	903	-	-	-
Stage 1	-	-	-	-
Stage 2	928	-	-	-

Approach	WB	SB
HCM Control Delay, s	9	
HCM LOS	A	

Minor Lane/Major Mvmt	WBLn1	SBL	SBT
Capacity (veh/h)	903	-	-
HCM Lane V/C Ratio	0.005	-	-
HCM Control Delay (s)	9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	198	0	2	160	0	4
Future Volume (vph)	198	0	2	160	0	4
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.999		
Satd. Flow (prot)	2059	0	0	2057	1781	0
Flt Permitted				0.999		
Satd. Flow (perm)	2059	0	0	2057	1781	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	373			108	127	
Travel Time (s)	10.2			2.9	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	0	2	174	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	215	0	0	176	4	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	198	0	2	160	0	4
Future Vol, veh/h	198	0	2	160	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	215	0	2	174	0	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	215	0	393	215
Stage 1	-	-	-	-	215	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1355	-	611	825
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1355	-	610	825
Mov Cap-2 Maneuver	-	-	-	-	610	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	851	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	-	-	1355	-
HCM Lane V/C Ratio	0.005	-	-	0.002	-
HCM Control Delay (s)	9.4	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	583	0	0	726	0	8
Future Volume (vph)	583	0	0	726	0	8
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3912	0	0	3912	0	1781
Flt Permitted						
Satd. Flow (perm)	3912	0	0	3912	0	1781
Link Speed (mph)	25			25	25	
Link Distance (ft)	460			221	131	
Travel Time (s)	12.5			6.0	3.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	634	0	0	789	0	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	634	0	0	789	0	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	583	0	0	726	0	8
Future Vol, veh/h	583	0	0	726	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	634	0	0	789	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	317
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	679
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	679
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	679	-	-	-
HCM Lane V/C Ratio	0.013	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

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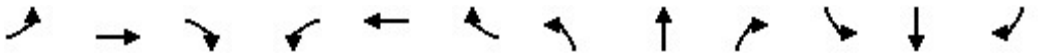
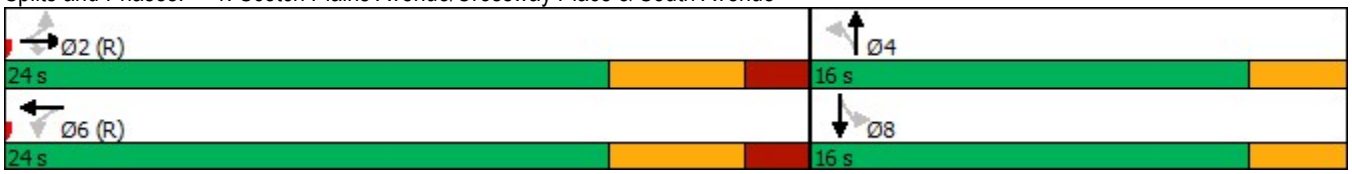


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	291	56	31	302	91	36	211	15	50	235	145
Future Volume (vph)	81	291	56	31	302	91	36	211	15	50	235	145
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.971			0.990			0.943	
Flt Protected		0.989			0.996		0.950			0.950		
Satd. Flow (prot)	0	2036	1750	0	1991	0	1956	2038	0	1956	1941	0
Flt Permitted		0.823			0.951		0.360			0.533		
Satd. Flow (perm)	0	1694	1750	0	1901	0	741	2038	0	1097	1941	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			59		45			10			83	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	85	306	59	33	318	96	38	222	16	53	247	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	391	59	0	447	0	38	238	0	53	400	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0		16.0	16.0		16.0	16.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		19.9	19.9		19.9		11.1	11.1		11.1	11.1	
Actuated g/C Ratio		0.50	0.50		0.50		0.28	0.28		0.28	0.28	
v/c Ratio		0.46	0.07		0.46		0.19	0.42		0.17	0.67	
Control Delay		9.6	2.7		8.5		12.4	13.0		11.5	15.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		9.6	2.7		8.5		12.4	13.0		11.5	15.7	
LOS		A	A		A		B	B		B	B	
Approach Delay		8.7			8.5			12.9			15.2	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 40			
Actuated Cycle Length: 40			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	391	59	447	38	238	53	400
v/c Ratio	0.46	0.07	0.46	0.19	0.42	0.17	0.67
Control Delay	9.6	2.7	8.5	12.4	13.0	11.5	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	2.7	8.5	12.4	13.0	11.5	15.7
Queue Length 50th (ft)	55	0	55	6	38	8	56
Queue Length 95th (ft)	112	12	112	21	77	25	116
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	843	900	969	240	669	356	686
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.07	0.46	0.16	0.36	0.15	0.58

Intersection Summary

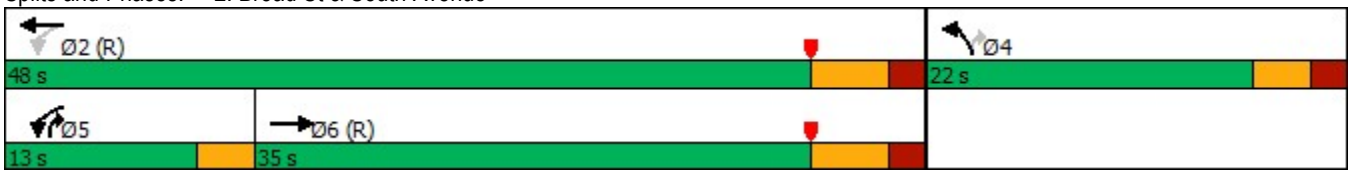
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	290	112	694	466	195	412
Future Volume (vph)	290	112	694	466	195	412
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.962					0.850
Flt Protected				0.971	0.950	
Satd. Flow (prot)	1981	0	0	3798	1956	1750
Flt Permitted				0.583	0.950	
Satd. Flow (perm)	1981	0	0	2281	1956	1750
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	305	118	731	491	205	434
Shared Lane Traffic (%)						
Lane Group Flow (vph)	423	0	0	1222	205	434
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	9.0		10.0	9.0	7.0	10.0
Minimum Split (s)	35.0		13.0	35.0	22.0	13.0
Total Split (s)	35.0		13.0	48.0	22.0	13.0
Total Split (%)	50.0%		18.6%	68.6%	31.4%	18.6%
Maximum Green (s)	29.0		10.0	42.0	17.0	10.0
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	9.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	34.2			47.4	11.6	26.8
Actuated g/C Ratio	0.49			0.68	0.17	0.38
v/c Ratio	0.44			1.08dl	0.63	0.65
Control Delay	14.4			9.6	35.5	22.2
Queue Delay	0.0			0.0	0.0	0.0

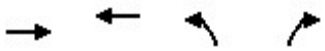
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Delay	14.4			9.6	35.5	22.2
LOS	B			A	D	C
Approach Delay	14.4			9.6	26.5	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 78.7%		ICU Level of Service D	
Analysis Period (min) 15			

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Broad St & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	423	1222	205	434
v/c Ratio	0.44	1.08dl	0.63	0.65
Control Delay	14.4	9.6	35.5	22.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.4	9.6	35.5	22.2
Queue Length 50th (ft)	111	110	83	149
Queue Length 95th (ft)	209	186	135	209
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	967	1698	475	670
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	0.44	0.72	0.43	0.65

Intersection Summary

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

MOVEMENT SUMMARY

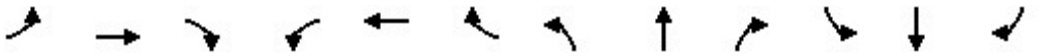
Site: 101 [Westfield RAB_Existing_PM (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	14	0.0	15	0.0	0.454	9.5	LOS A	2.8	70.3	0.64	0.69	0.80	24.4
6	T1	382	2.0	390	2.0	0.454	9.6	LOS A	2.8	70.3	0.64	0.69	0.80	22.8
16	R2	308	3.0	314	3.0	0.454	8.0	LOS A	2.8	70.3	0.59	0.56	0.59	23.6
Approach		704	2.4	719	2.4	0.454	8.9	LOS A	2.8	70.3	0.62	0.63	0.71	23.2
North: SB - SR 28														
7	L2	440	2.0	449	2.0	0.455	9.0	LOS A	2.6	66.6	0.58	0.57	0.67	22.0
14	R2	521	2.0	532	2.0	0.539	10.5	LOS B	4.2	106.8	0.63	0.70	0.89	18.8
Approach		961	2.0	981	2.0	0.539	9.8	LOS A	4.2	106.8	0.61	0.64	0.79	20.5
West: EB - South Ave														
5u	U	2	0.0	2	0.0	0.855	25.7	LOS D	18.4	466.7	0.97	1.55	2.46	11.6
5	L2	476	1.0	486	1.0	0.855	25.7	LOS D	18.4	466.7	0.97	1.55	2.46	11.8
2	T1	391	3.0	399	3.0	0.855	21.6	LOS C	18.4	466.7	0.87	1.31	2.07	17.1
Approach		869	1.9	887	1.9	0.855	23.9	LOS C	18.4	466.7	0.92	1.44	2.28	14.0
All Vehicles		2534	2.1	2586	2.1	0.855	14.4	LOS B	18.4	466.7	0.72	0.91	1.28	18.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



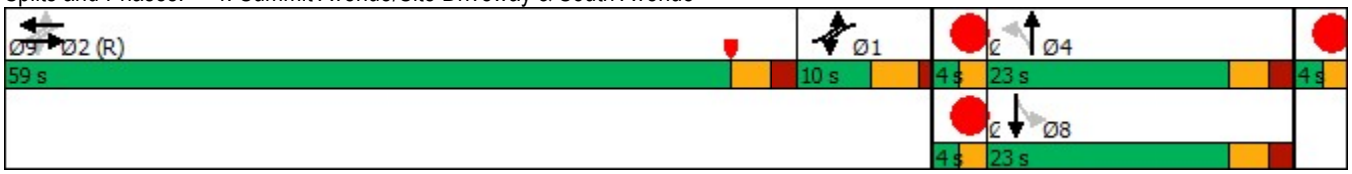
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	636	55	28	627	57	101	23	43	131	21	91
Future Volume (vph)	34	636	55	28	627	57	101	23	43	131	21	91
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		100	0		0	0		70	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.988			0.902			0.878	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1900	2037	0	1995	2037	0	1956	1894	0	1995	1814	0
Flt Permitted	0.216			0.210			0.643			0.712		
Satd. Flow (perm)	432	2037	0	441	2037	0	1324	1894	0	1495	1814	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			7			45			95	
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		511			127			500			138	
Travel Time (s)		13.9			2.9			13.6			3.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	5%	2%	0%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Adj. Flow (vph)	35	663	57	29	653	59	105	24	45	136	22	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	720	0	29	712	0	105	69	0	136	117	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	2		1	2			4			8	
Permitted Phases	2			2			4			8		
Detector Phase	1	2		1	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	9.5	19.0		9.5	19.0		19.0	19.0		19.0	19.0	
Total Split (s)	10.0	59.0		10.0	59.0		23.0	23.0		23.0	23.0	
Total Split (%)	10.0%	59.0%		10.0%	59.0%		23.0%	23.0%		23.0%	23.0%	
Maximum Green (s)	5.5	54.0		5.5	54.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.0		3.5	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	5.0		4.5	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lag	Lag	
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		160			160		160	160		160	160	
Act Effct Green (s)	61.5	55.5		61.5	55.5		15.4	15.4		15.4	15.4	
Actuated g/C Ratio	0.62	0.56		0.62	0.56		0.15	0.15		0.15	0.15	
v/c Ratio	0.10	0.63		0.08	0.63		0.51	0.21		0.59	0.33	
Control Delay	8.0	18.7		7.6	20.6		48.1	18.2		50.3	13.7	
Queue Delay	0.0	3.1		0.0	0.0		0.0	0.0		0.0	0.0	

Lane Group	Ø3	Ø7	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	3	7	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	1.0	1.0	1.0
Minimum Split (s)	4.0	4.0	4.0
Total Split (s)	4.0	4.0	4.0
Total Split (%)	4%	4%	4%
Maximum Green (s)	2.0	2.0	2.0
Yellow Time (s)	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)	2.0	2.0	2.0
Flash Dont Walk (s)	0.0	0.0	0.0
Pedestrian Calls (#/hr)	160	160	160
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	8.0	21.8		7.6	20.6		48.1	18.2		50.3	13.7	
LOS	A	C		A	C		D	B		D	B	
Approach Delay		21.2			20.1			36.2			33.4	
Approach LOS		C			C			D			C	

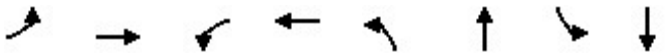
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 42 (42%), Referenced to phase 2:EBWB and 6:, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue



Lane Group	Ø3	Ø7	Ø9
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	720	29	712	105	69	136	117
v/c Ratio	0.10	0.63	0.08	0.63	0.51	0.21	0.59	0.33
Control Delay	8.0	18.7	7.6	20.6	48.1	18.2	50.3	13.7
Queue Delay	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	21.8	7.6	20.6	48.1	18.2	50.3	13.7
Queue Length 50th (ft)	7	305	5	269	63	13	83	12
Queue Length 95th (ft)	18	433	m15	362	114	51	141	60
Internal Link Dist (ft)		431		47		420		58
Turn Bay Length (ft)								
Base Capacity (vph)	346	1134	356	1134	238	377	269	404
Starvation Cap Reductn	0	301	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.86	0.08	0.63	0.44	0.18	0.51	0.29

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	716	47	29	585	35	89
Future Volume (vph)	716	47	29	585	35	89
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.992				0.903	
Flt Protected				0.998	0.986	
Satd. Flow (prot)	2045	0	0	2054	1856	0
Flt Permitted				0.998	0.986	
Satd. Flow (perm)	2045	0	0	2054	1856	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	368			279	211	
Travel Time (s)	8.4			6.3	4.8	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	0%	3%	2%	0%	1%
Adj. Flow (vph)	723	47	29	591	35	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	770	0	0	620	125	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

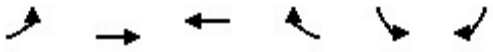
Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	716	47	29	585	35	89
Future Vol, veh/h	716	47	29	585	35	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	2	0	3	2	0	1
Mvmt Flow	723	47	29	591	35	90

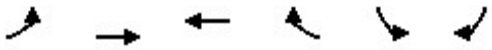
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	770	0	1396	747
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	649	-
Critical Hdwy	-	-	4.13	-	6.4	6.21
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.309
Pot Cap-1 Maneuver	-	-	840	-	157	415
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	524	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	840	-	149	415
Mov Cap-2 Maneuver	-	-	-	-	149	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	497	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	28.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	276	-	-	840	-
HCM Lane V/C Ratio	0.454	-	-	0.035	-
HCM Control Delay (s)	28.4	-	-	9.4	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	2.2	-	-	0.1	-



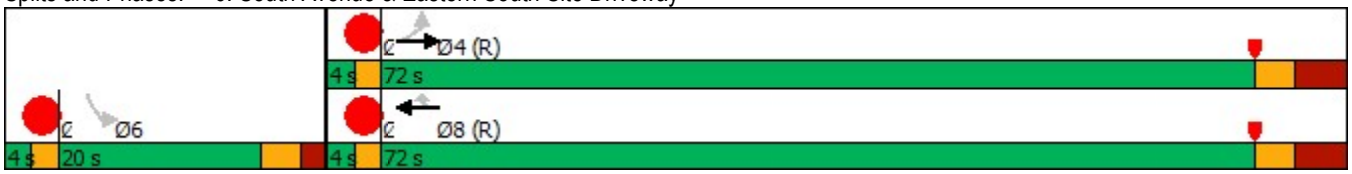
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Lane Configurations									
Traffic Volume (vph)	17	731	564	40	61	56			
Future Volume (vph)	17	731	564	40	61	56			
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100			
Storage Length (ft)	0			150	0	0			
Storage Lanes	0			1	1	0			
Taper Length (ft)	25				25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850	0.935				
Flt Protected		0.999			0.975				
Satd. Flow (prot)	0	2058	2059	1785	1914	0			
Flt Permitted		0.982			0.975				
Satd. Flow (perm)	0	2023	2059	1785	1914	0			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				41	39				
Link Speed (mph)		30	30		25				
Link Distance (ft)		279	494		163				
Travel Time (s)		6.3	11.2		4.4				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%			
Adj. Flow (vph)	18	754	581	41	63	58			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	772	581	41	121	0			
Turn Type	Perm	NA	NA	Perm	Perm				
Protected Phases		4	8				3	5	7
Permitted Phases	4			8	6				
Detector Phase	4	4	8	8	6				
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	7.0		1.0	1.0	1.0
Minimum Split (s)	23.0	23.0	23.0	23.0	19.0		4.0	4.0	4.0
Total Split (s)	72.0	72.0	72.0	72.0	20.0		4.0	4.0	4.0
Total Split (%)	72.0%	72.0%	72.0%	72.0%	20.0%		4%	4%	4%
Maximum Green (s)	65.0	65.0	65.0	65.0	15.0		2.0	2.0	2.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		2.0	2.0	2.0
All-Red Time (s)	4.0	4.0	4.0	4.0	2.0		0.0	0.0	0.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0				
Total Lost Time (s)		7.0	7.0	7.0	5.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	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
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max		None	None	None
Walk Time (s)	3.0	3.0	3.0	3.0	3.0		2.0	2.0	2.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	11.0		0.0	0.0	0.0
Pedestrian Calls (#/hr)	50	50	50	50	50		50	50	50
Act Effct Green (s)		65.8	65.8	65.8	15.8				
Actuated g/C Ratio		0.66	0.66	0.66	0.16				
v/c Ratio		0.58	0.43	0.03	0.36				
Control Delay		5.5	6.3	1.6	29.4				
Queue Delay		0.2	0.4	0.0	0.0				

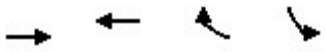


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Total Delay		5.7	6.7	1.6	29.4				
LOS		A	A	A	C				
Approach Delay		5.7	6.4		29.4				
Approach LOS		A	A		C				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 61 (61%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: South Avenue & Eastern South Site Driveway

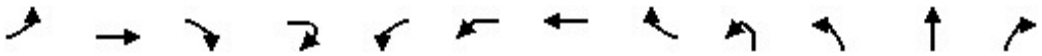




Lane Group	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	772	581	41	121
v/c Ratio	0.58	0.43	0.03	0.36
Control Delay	5.5	6.3	1.6	29.4
Queue Delay	0.2	0.4	0.0	0.0
Total Delay	5.7	6.7	1.6	29.4
Queue Length 50th (ft)	116	93	0	47
Queue Length 95th (ft)	149	m143	m2	102
Internal Link Dist (ft)	199	414		83
Turn Bay Length (ft)			150	
Base Capacity (vph)	1330	1354	1188	335
Starvation Cap Reductn	88	348	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.62	0.58	0.03	0.36

Intersection Summary

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



Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	204	494	253	5	51	30	430	191	5	193	586	32
Future Volume (vph)	204	494	253	5	51	30	430	191	5	193	586	32
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949						0.850			0.992	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1956	3712	0	0	0	1956	2059	1750	0	1956	2042	0
Flt Permitted	0.230					0.222				0.116		
Satd. Flow (perm)	474	3712	0	0	0	457	2059	1750	0	239	2042	0
Right Turn on Red				Yes				No				Yes
Satd. Flow (RTOR)		1									3	
Link Speed (mph)		30					30				25	
Link Distance (ft)		494					926				398	
Travel Time (s)		11.2					21.0				10.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	215	520	266	5	54	32	453	201	5	203	617	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	791	0	0	0	86	453	201	0	208	651	0
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	38.0			8.0	8.0	38.0	38.0	11.0	11.0	43.0	
Total Split (%)	8.0%	38.0%			8.0%	8.0%	38.0%	38.0%	11.0%	11.0%	43.0%	
Maximum Green (s)	5.0	30.0			5.0	5.0	30.0	30.0	8.0	8.0	35.0	
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	C-Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							50	50				
Act Effct Green (s)	41.1	32.1				40.2	30.0	30.0		47.5	34.5	
Actuated g/C Ratio	0.41	0.32				0.40	0.30	0.30		0.48	0.34	
v/c Ratio	0.78	0.66				0.33	0.73	0.38		0.83	0.92	
Control Delay	36.0	28.1				20.6	39.7	30.3		45.0	51.7	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	

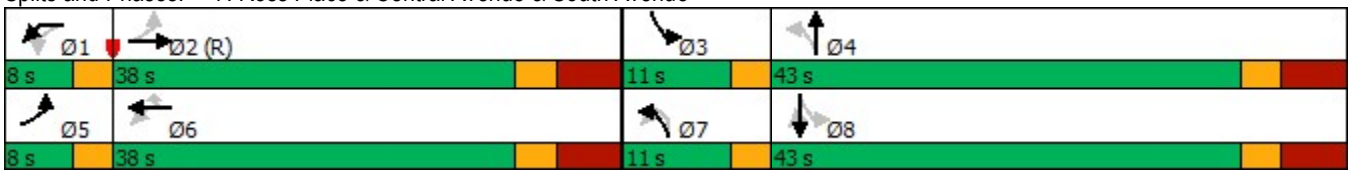


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	176	636	85	178
Future Volume (vph)	176	636	85	178
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1956	2059	1750	0
Flt Permitted	0.116			
Satd. Flow (perm)	239	2059	1750	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			120	
Link Speed (mph)		25		
Link Distance (ft)		809		
Travel Time (s)		22.1		
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%
Adj. Flow (vph)	185	669	89	187
Shared Lane Traffic (%)				
Lane Group Flow (vph)	185	669	276	0
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	38.0	38.0	
Total Split (s)	11.0	43.0	43.0	
Total Split (%)	11.0%	43.0%	43.0%	
Maximum Green (s)	8.0	35.0	35.0	
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		23.0	23.0	
Pedestrian Calls (#/hr)		50	50	
Act Effct Green (s)	47.5	34.5	34.5	
Actuated g/C Ratio	0.48	0.34	0.34	
v/c Ratio	0.74	0.94	0.40	
Control Delay	37.1	53.9	22.2	
Queue Delay	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Total Delay	36.0	28.1				20.6	39.7	30.3		45.0	51.7	
LOS	D	C				C	D	C		D	D	
Approach Delay		29.8					34.9				50.1	
Approach LOS		C					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 5 (5%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 39.6		Intersection LOS: D	
Intersection Capacity Utilization 90.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Total Delay	37.1	53.9	22.2	
LOS	D	D	C	
Approach Delay		43.4		
Approach LOS		D		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	215	791	86	453	201	208	651	185	669	276
v/c Ratio	0.78	0.66	0.33	0.73	0.38	0.83	0.92	0.74	0.94	0.40
Control Delay	36.0	28.1	20.6	39.7	30.3	45.0	51.7	37.1	53.9	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	28.1	20.6	39.7	30.3	45.0	51.7	37.1	53.9	22.2
Queue Length 50th (ft)	54	163	32	258	101	70	390	82	366	87
Queue Length 95th (ft)	#146	255	62	374	165	#187	#608	m107	m#573	m135
Internal Link Dist (ft)		414		846			318		729	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	276	1192	261	617	525	251	716	251	720	690
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	0.66	0.33	0.73	0.38	0.83	0.91	0.74	0.93	0.40

Intersection Summary

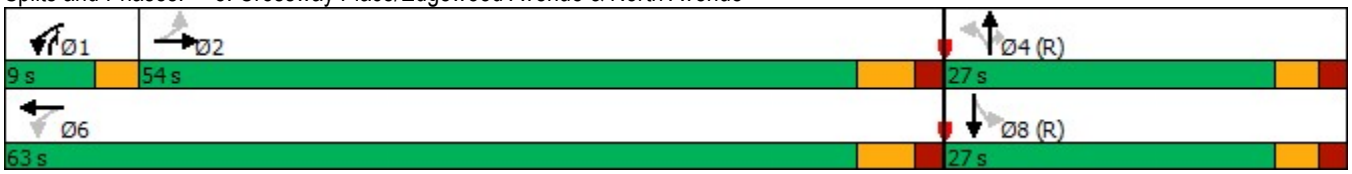
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

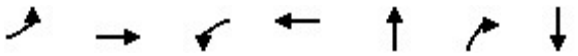
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	595	41	365	684	5	92	60	227	10	35	15
Future Volume (vph)	5	595	41	365	684	5	92	60	227	10	35	15
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.999				0.850		0.966	
Flt Protected	0.950			0.950				0.971			0.991	
Satd. Flow (prot)	1956	2038	0	1956	2057	0	0	1999	1750	0	1971	0
Flt Permitted	0.331			0.235				0.792			0.947	
Satd. Flow (perm)	681	2038	0	484	2057	0	0	1631	1750	0	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			1				236		16	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	5	626	43	384	720	5	97	63	239	11	37	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	669	0	384	725	0	0	160	239	0	64	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	54.0	54.0		9.0	63.0		27.0	27.0	9.0	27.0	27.0	
Total Split (%)	60.0%	60.0%		10.0%	70.0%		30.0%	30.0%	10.0%	30.0%	30.0%	
Maximum Green (s)	48.0	48.0		6.0	57.0		22.0	22.0	6.0	22.0	22.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		60.0	57.0			22.0	33.0		22.0	
Actuated g/C Ratio	0.53	0.53		0.67	0.63			0.24	0.37		0.24	
v/c Ratio	0.01	0.61		0.91	0.56			0.40	0.30		0.14	
Control Delay	10.2	17.5		38.5	11.4			32.1	4.0		22.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	10.2	17.5		38.5	11.4			32.1	4.0		22.1	
LOS	B	B		D	B			C	A		C	
Approach Delay		17.4			20.8			15.3			22.1	
Approach LOS		B			C			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 54 (60%), Referenced to phase 4:NBTL and 8:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue

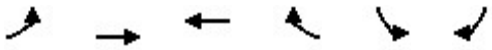




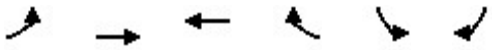
Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	5	669	384	725	160	239	64
v/c Ratio	0.01	0.61	0.91	0.56	0.40	0.30	0.14
Control Delay	10.2	17.5	38.5	11.4	32.1	4.0	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	17.5	38.5	11.4	32.1	4.0	22.1
Queue Length 50th (ft)	1	247	80	210	76	1	21
Queue Length 95th (ft)	7	357	#196	302	135	47	53
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	363	1089	420	1303	398	791	472
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.61	0.91	0.56	0.40	0.30	0.14

Intersection Summary

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



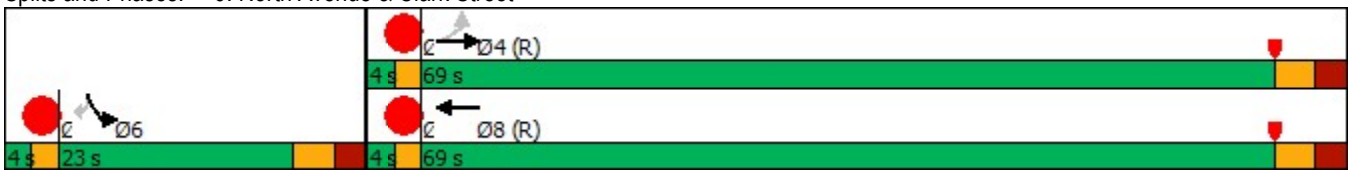
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Lane Configurations									
Traffic Volume (vph)	6	548	681	147	231	36			
Future Volume (vph)	6	548	681	147	231	36			
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100			
Storage Length (ft)	0			0	0	50			
Storage Lanes	0			0	1	1			
Taper Length (ft)	25				25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt			0.976			0.850			
Flt Protected		0.999			0.950				
Satd. Flow (prot)	0	2057	2009	0	1956	1750			
Flt Permitted		0.991			0.950				
Satd. Flow (perm)	0	2040	2009	0	1956	1750			
Right Turn on Red				No		Yes			
Satd. Flow (RTOR)						20			
Link Speed (mph)		35	35		25				
Link Distance (ft)		175	395		156				
Travel Time (s)		3.4	7.7		4.3				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	7	596	740	160	251	39			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	603	900	0	251	39			
Turn Type	Perm	NA	NA		Prot	Perm			
Protected Phases		4	8		6		3	5	7
Permitted Phases	4					6			
Detector Phase	4	4	8		6	6			
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0		5.0	5.0	1.0	1.0	1.0
Minimum Split (s)	30.5	30.5	30.5		19.5	19.5	4.0	4.0	4.0
Total Split (s)	69.0	69.0	69.0		23.0	23.0	4.0	4.0	4.0
Total Split (%)	69.0%	69.0%	69.0%		23.0%	23.0%	4%	4%	4%
Maximum Green (s)	63.5	63.5	63.5		17.5	17.5	2.0	2.0	2.0
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5	0.0	0.0	0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0			
Total Lost Time (s)		5.5	5.5		5.5	5.5			
Lead/Lag	Lag	Lag	Lag		Lag	Lag	Lead	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
Recall Mode	C-Max	C-Max	C-Max		Max	Max	None	None	None
Walk Time (s)	3.0	3.0	3.0		3.0	3.0	2.0	2.0	2.0
Flash Dont Walk (s)	22.0	22.0	22.0		11.0	11.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	20	20	20		20	20	20	20	20
Act Effct Green (s)		65.9	65.9		19.9	19.9			
Actuated g/C Ratio		0.66	0.66		0.20	0.20			
v/c Ratio		0.45	0.68		0.65	0.11			
Control Delay		9.8	11.2		46.3	21.8			
Queue Delay		0.1	2.6		0.0	0.0			
Total Delay		9.9	13.8		46.3	21.8			

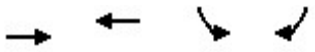


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
LOS		A	B		D	C			
Approach Delay		9.9	13.8		43.0				
Approach LOS		A	B		D				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 8 (8%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 17.2		Intersection LOS: B	
Intersection Capacity Utilization 61.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: North Avenue & Clark Street

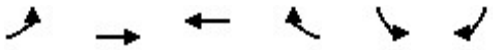




Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	603	900	251	39
v/c Ratio	0.45	0.68	0.65	0.11
Control Delay	9.8	11.2	46.3	21.8
Queue Delay	0.1	2.6	0.0	0.0
Total Delay	9.9	13.8	46.3	21.8
Queue Length 50th (ft)	158	266	145	10
Queue Length 95th (ft)	258	329	#260	39
Internal Link Dist (ft)	95	315	76	
Turn Bay Length (ft)				50
Base Capacity (vph)	1344	1324	389	363
Starvation Cap Reductn	0	294	0	0
Spillback Cap Reductn	80	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.87	0.65	0.11

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	190	199	0	53	39
Future Volume (vph)	0	190	199	0	53	39
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.943	
Flt Protected					0.972	
Satd. Flow (prot)	0	2079	2059	0	1925	0
Flt Permitted					0.972	
Satd. Flow (perm)	0	2079	2059	0	1925	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		92	156		156	
Travel Time (s)		2.5	4.3		4.3	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	0	226	237	0	63	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	226	237	0	109	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.0%		ICU Level of Service A	
Analysis Period (min) 15			

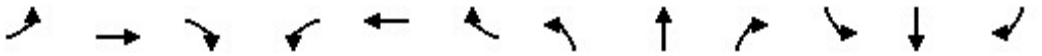
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	190	199	0	53	39
Future Vol, veh/h	0	190	199	0	53	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	0	226	237	0	63	46

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	463	237
Stage 1	-	-	-	-	237	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	561	807
Stage 1	0	-	-	0	807	-
Stage 2	0	-	-	0	816	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	561	807
Mov Cap-2 Maneuver	-	-	-	-	561	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	644
HCM Lane V/C Ratio	-	-	0.17
HCM Control Delay (s)	-	-	11.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6

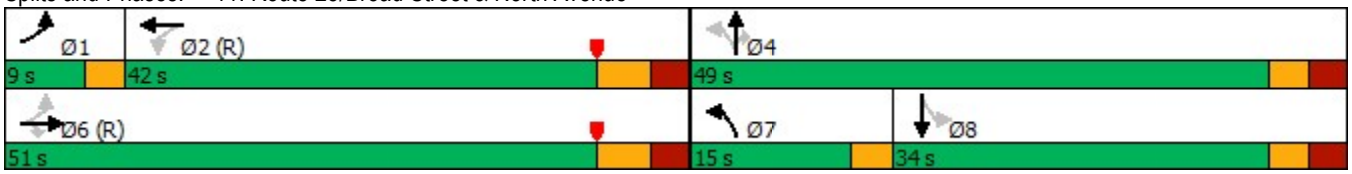


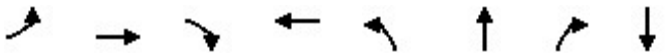
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	393	393	240	528	10	281	506	169	35	439	136
Future Volume (vph)	165	393	393	240	528	10	281	506	169	35	439	136
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		125	0		0	0		0	0		75
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.998				0.850		0.966	
Flt Protected	0.950				0.985		0.950				0.997	
Satd. Flow (prot)	1956	1538	1750	0	3809	0	1956	2059	1785	0	3721	0
Flt Permitted	0.214				0.716		0.193				0.883	
Satd. Flow (perm)	441	1538	1750	0	2769	0	397	2059	1785	0	3295	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			386		1						37	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		395			555			498			430	
Travel Time (s)		7.7			15.1			13.6			11.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	4%	2%	3%	3%	0%	2%	2%	0%	0%	3%	5%
Adj. Flow (vph)	172	409	409	250	550	10	293	527	176	36	457	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	409	409	0	810	0	293	527	176	0	635	0
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	9.0	51.0	51.0	42.0	42.0		15.0	49.0	49.0	34.0	34.0	
Total Split (%)	9.0%	51.0%	51.0%	42.0%	42.0%		15.0%	49.0%	49.0%	34.0%	34.0%	
Maximum Green (s)	6.0	44.0	44.0	35.0	35.0		12.0	43.0	43.0	28.0	28.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		20	20	20	20			20	20	20	20	
Act Effct Green (s)	52.0	48.0	48.0		37.4		42.0	39.0	39.0		24.0	
Actuated g/C Ratio	0.52	0.48	0.48		0.37		0.42	0.39	0.39		0.24	
v/c Ratio	0.50	0.55	0.39		0.78		0.83	0.66	0.25		0.77	
Control Delay	17.7	21.6	3.8		22.5		40.5	29.0	20.9		40.0	
Queue Delay	0.0	0.9	0.4		0.0		1.9	0.0	0.0		0.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	17.7	22.5	4.2		22.5		42.4	29.0	20.9		40.3	
LOS	B	C	A		C		D	C	C		D	
Approach Delay		14.1			22.5			31.5			40.3	
Approach LOS		B			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 26.0		Intersection LOS: C	
Intersection Capacity Utilization 106.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue

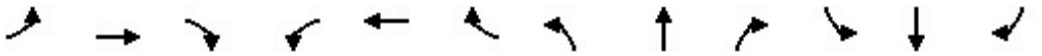




Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	172	409	409	810	293	527	176	635
v/c Ratio	0.50	0.55	0.39	0.78	0.83	0.66	0.25	0.77
Control Delay	17.7	21.6	3.8	22.5	40.5	29.0	20.9	40.0
Queue Delay	0.0	0.9	0.4	0.0	1.9	0.0	0.0	0.2
Total Delay	17.7	22.5	4.2	22.5	42.4	29.0	20.9	40.3
Queue Length 50th (ft)	53	214	26	274	122	266	73	186
Queue Length 95th (ft)	m88	325	54	#173	#216	359	116	240
Internal Link Dist (ft)		315		475		418		350
Turn Bay Length (ft)	185		125					
Base Capacity (vph)	343	737	1040	1036	354	885	767	949
Starvation Cap Reductn	0	129	242	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	14	0	0	42
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.67	0.51	0.78	0.86	0.60	0.23	0.70

Intersection Summary

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



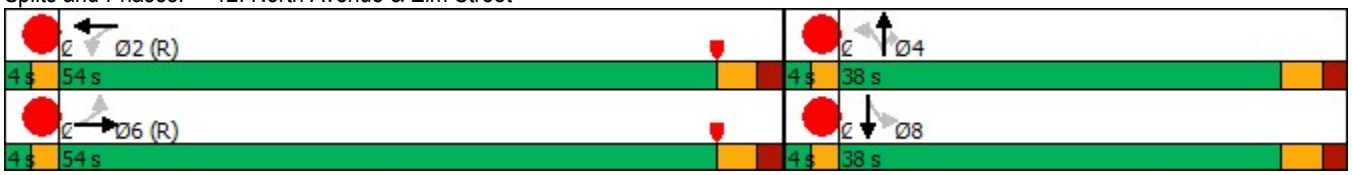
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	497	33	40	730	163	35	28	17	105	26	174
Future Volume (vph)	66	497	33	40	730	163	35	28	17	105	26	174
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.974				0.850		0.923	
Flt Protected		0.994			0.998			0.973			0.983	
Satd. Flow (prot)	0	3838	0	0	3790	0	0	2043	1785	0	1873	0
Flt Permitted		0.729			0.899			0.655			0.860	
Satd. Flow (perm)	0	2815	0	0	3414	0	0	1376	1785	0	1639	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			35				65		72	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			479			193			176	
Travel Time (s)		4.4			13.1			4.4			4.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	0%	0%	3%	0%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	69	518	34	42	760	170	36	29	18	109	27	181
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	621	0	0	972	0	0	65	18	0	317	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0	23.0	23.0	23.0	
Total Split (s)	54.0	54.0		54.0	54.0		38.0	38.0	38.0	38.0	38.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%		38.0%	38.0%	38.0%	38.0%	38.0%	
Maximum Green (s)	49.0	49.0		49.0	49.0		33.0	33.0	33.0	33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
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)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag	Lag	Lag	Lag	
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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	160	160		160	160		160	160	160	160	160	
Act Effct Green (s)		57.2			57.2			21.3	21.3		21.3	
Actuated g/C Ratio		0.57			0.57			0.21	0.21		0.21	
v/c Ratio		0.38			0.49			0.22	0.04		0.78	
Control Delay		9.8			16.8			32.1	0.2		41.7	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		9.8			16.8			32.1	0.2		41.7	
LOS		A			B			C	A		D	
Approach Delay		9.8			16.8			25.2			41.7	

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	4.0	4.0	4.0	4.0
Total Split (s)	4.0	4.0	4.0	4.0
Total Split (%)	4%	4%	4%	4%
Maximum Green (s)	2.0	2.0	2.0	2.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	160	160	160	160
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 99 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 12: North Avenue & Elm Street



Lane Group	Ø1	Ø3	Ø5	Ø7
Approach LOS				

Intersection Summary



Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	621	972	65	18	317
v/c Ratio	0.38	0.49	0.22	0.04	0.78
Control Delay	9.8	16.8	32.1	0.2	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	16.8	32.1	0.2	41.7
Queue Length 50th (ft)	72	250	35	0	150
Queue Length 95th (ft)	138	m287	65	0	225
Internal Link Dist (ft)	83	399	113		96
Turn Bay Length (ft)					
Base Capacity (vph)	1614	1969	454	632	589
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	0.49	0.14	0.03	0.54

Intersection Summary

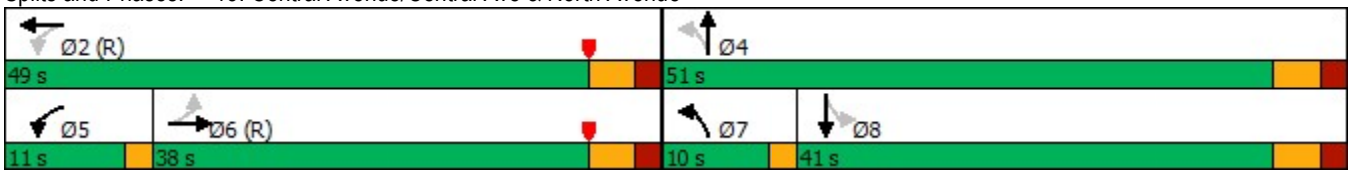
m Volume for 95th percentile queue is metered by upstream signal.

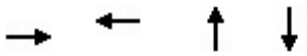
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	494	180	221	677	62	213	542	223	57	668	21
Future Volume (vph)	38	494	180	221	677	62	213	542	223	57	668	21
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			75			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.962			0.990			0.966			0.996	
Flt Protected		0.997			0.989			0.989			0.996	
Satd. Flow (prot)	0	3752	0	0	3830	0	0	3737	0	0	3881	0
Flt Permitted		0.830			0.546			0.550			0.735	
Satd. Flow (perm)	0	3123	0	0	2114	0	0	2078	0	0	2864	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					9			50				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		203			706			809			223	
Travel Time (s)		5.5			13.8			22.1			6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	40	520	189	233	713	65	224	571	235	60	703	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	749	0	0	1011	0	0	1030	0	0	785	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		2.6	7.0		7.0	7.0	
Minimum Split (s)	31.6	31.6		7.1	31.6		7.1	31.6		31.6	31.6	
Total Split (s)	38.0	38.0		11.0	49.0		10.0	51.0		41.0	41.0	
Total Split (%)	38.0%	38.0%		11.0%	49.0%		10.0%	51.0%		41.0%	41.0%	
Maximum Green (s)	32.4	32.4		8.9	43.4		7.9	45.4		35.4	35.4	
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	C-Max		Max	None		None	None	
Walk Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	21.0	21.0			21.0			21.0		21.0	21.0	
Pedestrian Calls (#/hr)	20	20			20			20		20	20	
Act Effct Green (s)		32.4			43.4			45.4			35.4	
Actuated g/C Ratio		0.32			0.43			0.45			0.35	
v/c Ratio		0.74			1.00			0.99			0.77	
Control Delay		36.5			54.7			45.6			35.1	
Queue Delay		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		36.5			54.7			45.6			35.1	
LOS		D			D			D			D	
Approach Delay		36.5			54.7			45.6			35.1	
Approach LOS		D			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 42 (42%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 44.0		Intersection LOS: D	
Intersection Capacity Utilization 106.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 13: Central Avenue/Central Ave & North Avenue





Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	749	1011	1030	785
v/c Ratio	0.74	1.00	0.99	0.77
Control Delay	36.5	54.7	45.6	35.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	36.5	54.7	45.6	35.1
Queue Length 50th (ft)	234	251	243	231
Queue Length 95th (ft)	307	#412	m#338	307
Internal Link Dist (ft)	123	626	729	143
Turn Bay Length (ft)				
Base Capacity (vph)	1011	1015	1043	1013
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	0.74	1.00	0.99	0.77

Intersection Summary

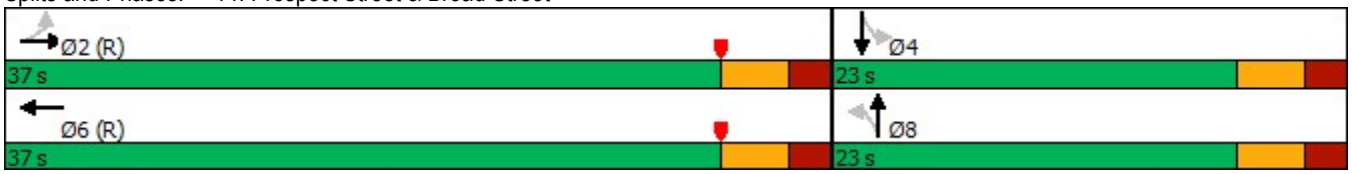
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

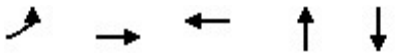
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	660	0	0	519	56	26	42	15	0	0	114
Future Volume (vph)	128	660	0	0	519	56	26	42	15	0	0	114
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.987			0.975			0.865	
Flt Protected	0.950							0.985				
Satd. Flow (prot)	1956	2059	0	0	2032	0	0	1977	0	0	1781	0
Flt Permitted	0.400							0.851				
Satd. Flow (perm)	824	2059	0	0	2032	0	0	1708	0	0	1781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					14			16			288	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	135	695	0	0	546	59	27	44	16	0	0	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	695	0	0	605	0	0	87	0	0	120	0
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2			6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0			23.0		23.0	23.0		23.0	23.0	
Total Split (s)	37.0	37.0			37.0		23.0	23.0		23.0	23.0	
Total Split (%)	61.7%	61.7%			61.7%		38.3%	38.3%		38.3%	38.3%	
Maximum Green (s)	32.0	32.0			32.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
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	
Recall Mode	C-Max	C-Max			C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	45.2	45.2			45.2			7.9			7.9	
Actuated g/C Ratio	0.75	0.75			0.75			0.13			0.13	
v/c Ratio	0.22	0.45			0.39			0.37			0.25	
Control Delay	4.7	5.3			3.6			23.9			1.2	
Queue Delay	0.0	0.3			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	4.7	5.6			3.6			23.9			1.2	
LOS	A	A			A			C			A	
Approach Delay		5.5			3.6			23.9			1.2	
Approach LOS		A			A			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 59.5 (99%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 5.5		Intersection LOS: A	
Intersection Capacity Utilization 57.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 14: Prospect Street & Broad Street





Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	135	695	605	87	120
v/c Ratio	0.22	0.45	0.39	0.37	0.25
Control Delay	4.7	5.3	3.6	23.9	1.2
Queue Delay	0.0	0.3	0.0	0.0	0.0
Total Delay	4.7	5.6	3.6	23.9	1.2
Queue Length 50th (ft)	13	86	37	24	0
Queue Length 95th (ft)	38	174	115	56	0
Internal Link Dist (ft)		350	402	144	229
Turn Bay Length (ft)	128				
Base Capacity (vph)	620	1551	1534	523	735
Starvation Cap Reductn	0	359	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	0.58	0.39	0.17	0.16

Intersection Summary

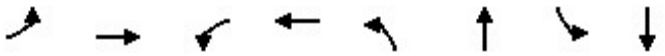
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	554	65	67	458	76	28	72	56	163	92	89
Future Volume (vph)	62	554	65	67	458	76	28	72	56	163	92	89
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.979			0.934			0.926	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1956	2026	0	1956	2016	0	1956	1923	0	1956	1906	0
Flt Permitted	0.392			0.329			0.609			0.671		
Satd. Flow (perm)	807	2026	0	677	2016	0	1254	1923	0	1381	1906	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			18			59			92	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	65	583	68	71	482	80	29	76	59	172	97	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	651	0	71	562	0	29	135	0	172	191	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	36.0	36.0		36.0	36.0		13.0	13.0		13.0	13.0	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.22	0.22		0.22	0.22	
v/c Ratio	0.13	0.53		0.18	0.46		0.11	0.29		0.57	0.39	
Control Delay	5.2	6.4		8.4	9.6		17.3	12.2		27.7	12.2	
Queue Delay	0.0	0.0		0.0	0.5		0.0	0.0		0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	5.2	6.4		8.4	10.1		17.3	12.2		27.7	12.2	
LOS	A	A		A	B		B	B		C	B	
Approach Delay		6.3			9.9			13.1			19.5	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 10.7		Intersection LOS: B	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	651	71	562	29	135	172	191
v/c Ratio	0.13	0.53	0.18	0.46	0.11	0.29	0.57	0.39
Control Delay	5.2	6.4	8.4	9.6	17.3	12.2	27.7	12.2
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	5.2	6.4	8.4	10.1	17.3	12.2	27.7	12.2
Queue Length 50th (ft)	6	59	13	124	9	23	56	30
Queue Length 95th (ft)	m14	81	40	217	23	53	95	66
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	483	1219	405	1215	459	742	506	757
Starvation Cap Reductn	0	21	0	281	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.54	0.18	0.60	0.06	0.18	0.34	0.25

Intersection Summary

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

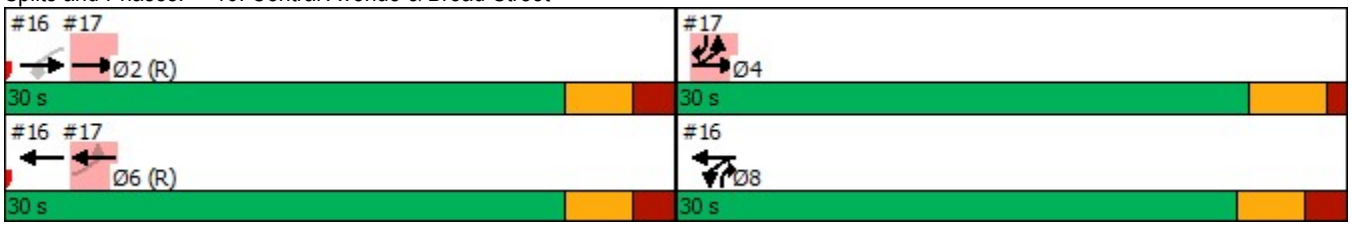
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	687	87	568	551	0	425		
Future Volume (vph)	687	87	568	551	0	425		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	3912	1750	1956	2059	0	1781		
Flt Permitted			0.325					
Satd. Flow (perm)	3912	1750	669	2059	0	1781		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		92				110		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	716			
Travel Time (s)	8.7			2.8	19.5			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%		
Adj. Flow (vph)	723	92	598	580	0	447		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	723	92	598	580	0	447		
Turn Type	NA	Perm	D.P+P	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2	2					
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0			7.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	23.5	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.5	25.0
Yellow Time (s)	3.0	3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	27.4	27.4	50.0	60.0		22.6		
Actuated g/C Ratio	0.46	0.46	0.83	1.00		0.38		
v/c Ratio	0.40	0.11	0.57	0.28		0.61		
Control Delay	12.8	4.6	7.6	0.3		14.4		
Queue Delay	0.2	0.0	0.8	0.0		0.0		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Total Delay	13.0	4.6	8.4	0.3		14.5		
LOS	B	A	A	A		B		
Approach Delay	12.0			4.4	14.5			
Approach LOS	B			A	B			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBWB and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 16: Central Avenue & Broad Street

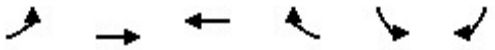




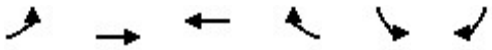
Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	723	92	598	580	447
v/c Ratio	0.40	0.11	0.57	0.28	0.61
Control Delay	12.8	4.6	7.6	0.3	14.4
Queue Delay	0.2	0.0	0.8	0.0	0.0
Total Delay	13.0	4.6	8.4	0.3	14.5
Queue Length 50th (ft)	104	3	23	0	85
Queue Length 95th (ft)	153	m24	109	0	161
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	1788	849	1108	2036	806
Starvation Cap Reductn	344	0	238	0	0
Spillback Cap Reductn	34	0	0	57	11
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.50	0.11	0.69	0.29	0.56

Intersection Summary

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



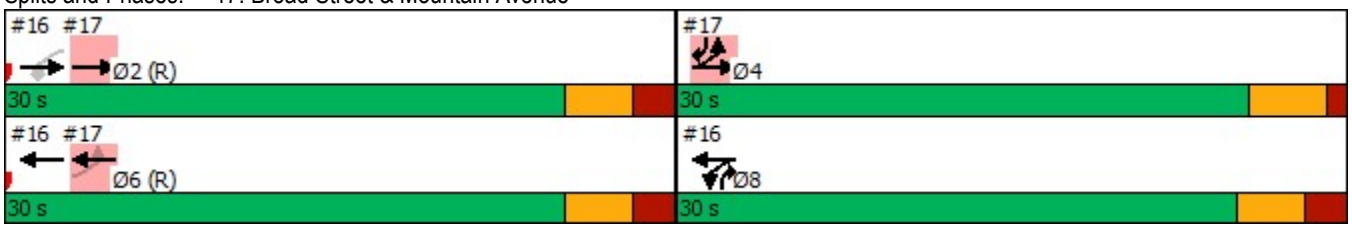
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	522	584	593	26	0	524		
Future Volume (vph)	522	584	593	26	0	524		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.994			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1956	2059	3888	0	0	3080		
Flt Permitted	0.365							
Satd. Flow (perm)	751	2059	3888	0	0	3080		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			9			268		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	398		1032			
Travel Time (s)		2.5	10.9		28.1			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%		
Adj. Flow (vph)	549	615	624	27	0	552		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	549	615	651	0	0	552		
Turn Type	D.P+P	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases	6							
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	7.0
Minimum Split (s)	23.5		30.0			23.5	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.5		25.0			25.5	25.0	25.0
Yellow Time (s)	3.5		3.0			3.5	3.0	3.0
All-Red Time (s)	1.0		2.0			1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	4.5		5.0			4.5		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	51.0	60.0	27.4			23.1		
Actuated g/C Ratio	0.85	1.00	0.46			0.38		
v/c Ratio	0.50	0.30	0.37			0.41		
Control Delay	5.8	0.3	12.0			7.0		
Queue Delay	0.9	0.0	0.0			0.0		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Total Delay	6.7	0.3	12.0			7.0		
LOS	A	A	B			A		
Approach Delay		3.4	12.0		7.0			
Approach LOS		A	B		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBWB and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 49.7%		ICU Level of Service A	
Analysis Period (min) 15			

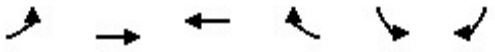
Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	549	615	651	552
v/c Ratio	0.50	0.30	0.37	0.41
Control Delay	5.8	0.3	12.0	7.0
Queue Delay	0.9	0.0	0.0	0.0
Total Delay	6.7	0.3	12.0	7.0
Queue Length 50th (ft)	33	0	81	35
Queue Length 95th (ft)	93	0	118	67
Internal Link Dist (ft)		13	318	
Turn Bay Length (ft)				150
Base Capacity (vph)	1165	2036	1781	1463
Starvation Cap Reductn	346	0	0	0
Spillback Cap Reductn	0	0	142	51
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.67	0.30	0.40	0.39

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	750	669	0	0	59
Future Volume (vph)	0	750	669	0	0	59
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	2059	2059	0	0	1781
Flt Permitted						
Satd. Flow (perm)	0	2059	2059	0	0	1781
Link Speed (mph)		30	30		30	
Link Distance (ft)		127	368		133	
Travel Time (s)		2.9	8.4		3.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	789	704	0	0	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	789	704	0	0	62
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↗
Traffic Vol, veh/h	0	750	669	0	0	59
Future Vol, veh/h	0	750	669	0	0	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	789	704	0	0	62

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	704
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	0	0	437
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	437
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	437
HCM Lane V/C Ratio	-	-	0.142
HCM Control Delay (s)	-	-	14.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.5



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	573	10	36	819	15	53
Future Volume (vph)	573	10	36	819	15	53
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.895	
Flt Protected				0.998	0.989	
Satd. Flow (prot)	2055	0	0	2055	1822	0
Flt Permitted				0.998	0.989	
Satd. Flow (perm)	2055	0	0	2055	1822	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	473			427	221	
Travel Time (s)	9.2			8.3	6.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	603	11	38	862	16	56
Shared Lane Traffic (%)						
Lane Group Flow (vph)	614	0	0	900	72	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	573	10	36	819	15	53
Future Vol, veh/h	573	10	36	819	15	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	603	11	38	862	16	56

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	614	0	1547	609
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	938	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	965	-	126	495
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	381	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	965	-	116	495
Mov Cap-2 Maneuver	-	-	-	-	116	-
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	352	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	21.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	288	-	-	965	-
HCM Lane V/C Ratio	0.249	-	-	0.039	-
HCM Control Delay (s)	21.6	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.1	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	603	18	43	846	24	61
Future Volume (vph)	603	18	43	846	24	61
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.903	
Flt Protected				0.998	0.986	
Satd. Flow (prot)	2051	0	0	2055	1833	0
Flt Permitted				0.998	0.986	
Satd. Flow (perm)	2051	0	0	2055	1833	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	427			175	238	
Travel Time (s)	8.3			3.4	6.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	635	19	45	891	25	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	654	0	0	936	89	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	603	18	43	846	24	61
Future Vol, veh/h	603	18	43	846	24	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	635	19	45	891	25	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	654	0	1626	645
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	981	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	933	-	112	472
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	363	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	933	-	101	472
Mov Cap-2 Maneuver	-	-	-	-	101	-
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	329	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	29.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	232	-	-	933	-
HCM Lane V/C Ratio	0.386	-	-	0.049	-
HCM Control Delay (s)	29.9	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.7	-	-	0.2	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	0	0	0	2	90
Future Volume (vph)	1	0	0	0	2	90
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					0.999
Satd. Flow (prot)	1956	0	0	0	0	2057
Flt Permitted	0.950					0.999
Satd. Flow (perm)	1956	0	0	0	0	2057
Link Speed (mph)	25		25			25
Link Distance (ft)	247		156			515
Travel Time (s)	6.7		4.3			14.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	0	0	2	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	0	0	100
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	0	0	0	2	90
Future Vol, veh/h	1	0	0	0	2	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	0	0	2	98

Major/Minor	Minor1		Major2	
Conflicting Flow All	102	-	0	0
Stage 1	0	-	-	-
Stage 2	102	-	-	-
Critical Hdwy	6.42	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	-	2.218	-
Pot Cap-1 Maneuver	896	0	-	-
Stage 1	-	0	-	-
Stage 2	922	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	896	-	-	-
Mov Cap-2 Maneuver	896	-	-	-
Stage 1	-	-	-	-
Stage 2	922	-	-	-

Approach	WB	SB
HCM Control Delay, s	9	
HCM LOS	A	

Minor Lane/Major Mvmt	WBLn1	SBL	SBT
Capacity (veh/h)	896	-	-
HCM Lane V/C Ratio	0.001	-	-
HCM Control Delay (s)	9	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	259	0	2	152	0	1
Future Volume (vph)	259	0	2	152	0	1
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.999		
Satd. Flow (prot)	2059	0	0	2057	1781	0
Flt Permitted				0.999		
Satd. Flow (perm)	2059	0	0	2057	1781	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	306			92	158	
Travel Time (s)	8.3			2.1	3.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	0	2	165	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	282	0	0	167	1	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 22.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	259	0	2	152	0	1
Future Vol, veh/h	259	0	2	152	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	0	2	165	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	282	0	451	282
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	169	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1280	-	566	757
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	565	757
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	859	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	757	-	-	1280	-
HCM Lane V/C Ratio	0.001	-	-	0.002	-
HCM Control Delay (s)	9.8	-	-	7.8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	578	0	0	834	0	16
Future Volume (vph)	578	0	0	834	0	16
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3912	0	0	3912	0	1781
Flt Permitted						
Satd. Flow (perm)	3912	0	0	3912	0	1781
Link Speed (mph)	25			25	30	
Link Distance (ft)	479			203	148	
Travel Time (s)	13.1			5.5	3.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	628	0	0	907	0	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	628	0	0	907	0	17
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	578	0	0	834	0	16
Future Vol, veh/h	578	0	0	834	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	628	0	0	907	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	314
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	682
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	682
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	682	-	-	-
HCM Lane V/C Ratio	0.026	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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2027 Build Conditions + Mitigation Saturday Midday Peak

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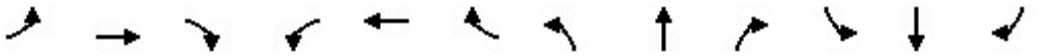
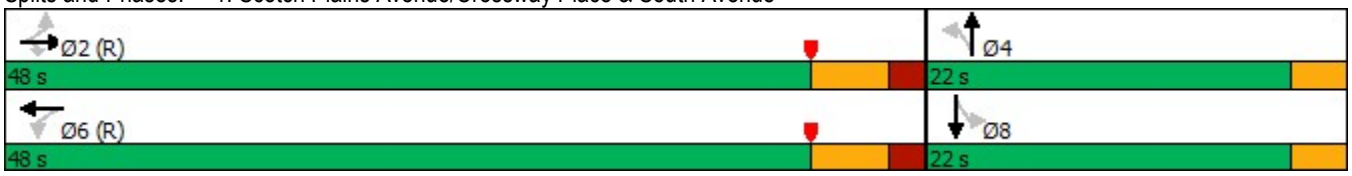


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	374	45	30	355	74	43	184	21	62	157	121
Future Volume (vph)	152	374	45	30	355	74	43	184	21	62	157	121
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	0		0	70		0	0		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.978			0.985			0.935	
Flt Protected		0.986			0.997		0.950			0.950		
Satd. Flow (prot)	0	2065	1785	0	2039	0	1995	2040	0	1975	1964	0
Flt Permitted		0.748			0.950		0.288			0.419		
Satd. Flow (perm)	0	1566	1785	0	1943	0	605	2040	0	871	1964	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47		25			8			54	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		137			639			608			265	
Travel Time (s)		2.7			12.4			16.6			7.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	0%	4%	0%	1%	0%	1%	5%	1%	0%	0%
Adj. Flow (vph)	158	390	47	31	370	77	45	192	22	65	164	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	548	47	0	478	0	45	214	0	65	290	0
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0		13.0	13.0		13.0	13.0	
Total Split (s)	48.0	48.0	48.0	48.0	48.0		22.0	22.0		22.0	22.0	
Total Split (%)	68.6%	68.6%	68.6%	68.6%	68.6%		31.4%	31.4%		31.4%	31.4%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		19.0	19.0		19.0	19.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		0.0	0.0		0.0	0.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0	6.0		6.0		3.0	3.0		3.0	3.0	
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	C-Max	C-Max	C-Max	C-Max	C-Max		None	None		None	None	
Walk Time (s)							0.0	0.0		0.0	0.0	
Flash Dont Walk (s)							10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		47.1	47.1		47.1		13.9	13.9		13.9	13.9	
Actuated g/C Ratio		0.67	0.67		0.67		0.20	0.20		0.20	0.20	
v/c Ratio		0.52	0.04		0.36		0.38	0.52		0.38	0.67	
Control Delay		13.1	4.7		6.3		31.9	27.8		29.2	28.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		13.1	4.7		6.3		31.9	27.8		29.2	28.2	
LOS		B	A		A		C	C		C	C	
Approach Delay		12.5			6.3			28.5			28.4	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 11 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 84.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Scotch Plains Avenue/Crossway Place & South Avenue





Lane Group	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	548	47	478	45	214	65	290
v/c Ratio	0.52	0.04	0.36	0.38	0.52	0.38	0.67
Control Delay	13.1	4.7	6.3	31.9	27.8	29.2	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	4.7	6.3	31.9	27.8	29.2	28.2
Queue Length 50th (ft)	155	1	69	17	80	25	94
Queue Length 95th (ft)	279	m22	146	43	128	54	154
Internal Link Dist (ft)	57		559		528		185
Turn Bay Length (ft)				70			
Base Capacity (vph)	1053	1216	1315	164	559	236	572
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.04	0.36	0.27	0.38	0.28	0.51

Intersection Summary

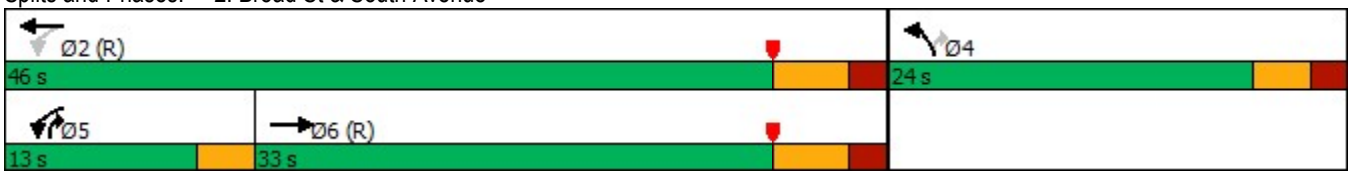
m Volume for 95th percentile queue is metered by upstream signal.

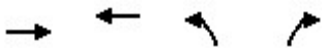
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	404	73	406	420	108	305
Future Volume (vph)	404	73	406	420	108	305
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	0.979					0.850
Flt Protected				0.976	0.950	
Satd. Flow (prot)	2019	0	0	3875	1995	1785
Flt Permitted				0.587	0.950	
Satd. Flow (perm)	2019	0	0	2331	1995	1785
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	25			25	35	
Link Distance (ft)	403			289	427	
Travel Time (s)	11.0			7.9	8.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	12%	1%	0%	0%	0%
Adj. Flow (vph)	412	74	414	429	110	311
Shared Lane Traffic (%)						
Lane Group Flow (vph)	486	0	0	843	110	311
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	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
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	6		5	2	4	5
Permitted Phases			2			4
Detector Phase	6		5	2	4	5
Switch Phase						
Minimum Initial (s)	7.0		10.0	9.0	7.0	10.0
Minimum Split (s)	33.0		13.0	35.0	22.0	13.0
Total Split (s)	33.0		13.0	46.0	24.0	13.0
Total Split (%)	47.1%		18.6%	65.7%	34.3%	18.6%
Maximum Green (s)	27.0		10.0	40.0	19.0	10.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Yellow Time (s)	4.0		3.0	4.0	3.0	3.0
All-Red Time (s)	2.0		0.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0			6.0	5.0	3.0
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Vehicle Extension (s)	3.0		3.0	3.0	2.0	3.0
Recall Mode	C-Max		None	C-Max	None	None
Walk Time (s)	7.0			9.0	7.0	
Flash Dont Walk (s)	20.0			20.0	10.0	
Pedestrian Calls (#/hr)	0			0	0	
Act Effct Green (s)	39.5			52.7	8.7	21.5
Actuated g/C Ratio	0.56			0.75	0.12	0.31
v/c Ratio	0.43			0.44	0.45	0.57
Control Delay	11.4			4.2	33.8	23.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	11.4			4.2	33.8	23.7
LOS	B			A	C	C
Approach Delay	11.4			4.2	26.3	
Approach LOS	B			A	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 34 (49%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Broad St & South Avenue





Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	486	843	110	311
v/c Ratio	0.43	0.44	0.45	0.57
Control Delay	11.4	4.2	33.8	23.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.4	4.2	33.8	23.7
Queue Length 50th (ft)	117	52	45	107
Queue Length 95th (ft)	207	89	86	164
Internal Link Dist (ft)	323	209	347	
Turn Bay Length (ft)				75
Base Capacity (vph)	1139	1914	541	548
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.43	0.44	0.20	0.57

Intersection Summary

MOVEMENT SUMMARY

Site: 101 [Westfield RAB_Existing_SAT (Site Folder: Build Peak Hour)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
East: WB - South Ave														
1u	U	14	0.0	15	0.0	0.657	14.8	LOS B	6.8	174.0	0.78	1.00	1.39	21.3
6	T1	348	0.0	378	0.0	0.657	14.8	LOS B	6.8	174.0	0.78	1.00	1.39	19.5
16	R2	370	7.0	402	7.0	0.657	10.7	LOS B	6.8	174.0	0.65	0.74	0.93	21.9
Approach		732	3.5	795	3.5	0.657	12.7	LOS B	6.8	174.0	0.71	0.87	1.16	20.7
North: SB - SR 28														
7	L2	365	0.0	397	0.0	0.443	8.6	LOS A	2.5	62.5	0.58	0.54	0.63	22.6
14	R2	356	0.0	387	0.0	0.443	7.2	LOS A	2.5	62.5	0.53	0.47	0.53	21.0
Approach		721	0.0	784	0.0	0.443	7.9	LOS A	2.5	62.5	0.55	0.50	0.58	22.0
West: EB - South Ave														
5	L2	482	0.0	524	0.0	0.755	17.4	LOS C	12.5	312.2	0.85	1.16	1.70	13.8
2	T1	389	1.0	423	1.0	0.755	12.2	LOS B	12.5	312.2	0.67	0.82	1.15	21.8
Approach		871	0.4	947	0.4	0.755	15.1	LOS C	12.5	312.2	0.77	1.01	1.45	16.8
All Vehicles		2324	1.3	2526	1.3	0.755	12.1	LOS B	12.5	312.2	0.68	0.81	1.09	19.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	618	43	28	560	15	97	14	41	34	3	38
Future Volume (vph)	17	618	43	28	560	15	97	14	41	34	3	38
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		100	0		0	0		70	0		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.996			0.889			0.860	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1995	2079	0	1995	2092	0	1995	1867	0	1995	1806	0
Flt Permitted	0.321			0.257			0.729			0.719		
Satd. Flow (perm)	674	2079	0	540	2092	0	1531	1867	0	1510	1806	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			2			43			40	
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		511			126			500			138	
Travel Time (s)		13.9			2.9			13.6			3.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	18	644	45	29	583	16	101	15	43	35	3	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	689	0	29	599	0	101	58	0	35	43	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	2		1	2			4			8	
Permitted Phases	2			2			4			8		
Detector Phase	1	2		1	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	8.0	21.0		8.0	21.0		19.0	19.0		19.0	19.0	
Total Split (s)	8.0	63.0		8.0	63.0		21.0	21.0		21.0	21.0	
Total Split (%)	8.0%	63.0%		8.0%	63.0%		21.0%	21.0%		21.0%	21.0%	
Maximum Green (s)	5.0	56.0		5.0	56.0		16.0	16.0		16.0	16.0	

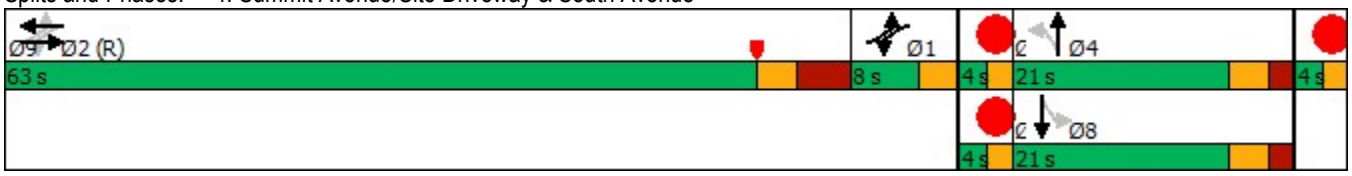
Lane Group	Ø3	Ø7	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			
Protected Phases	3	7	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	1.0	1.0	1.0
Minimum Split (s)	4.0	4.0	4.0
Total Split (s)	4.0	4.0	4.0
Total Split (%)	4%	4%	4%
Maximum Green (s)	2.0	2.0	2.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	4.0		0.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	7.0		3.0	7.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lag		Lag	Lag	
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	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		160			160		160	160		160	160	
Act Effct Green (s)	66.2	57.2		66.2	57.2		14.4	14.4		14.4	14.4	
Actuated g/C Ratio	0.66	0.57		0.66	0.57		0.14	0.14		0.14	0.14	
v/c Ratio	0.04	0.58		0.07	0.50		0.46	0.19		0.16	0.15	
Control Delay	5.5	16.2		5.0	20.6		46.5	17.7		39.3	14.3	
Queue Delay	0.0	2.2		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.5	18.5		5.0	20.6		46.5	17.7		39.3	14.3	
LOS	A	B		A	C		D	B		D	B	
Approach Delay		18.1			19.9			36.0			25.5	
Approach LOS		B			B			D			C	

Intersection Summary

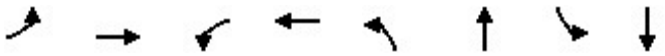
Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 53.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Summit Avenue/Site Driveway & South Avenue



Lane Group	Ø3	Ø7	Ø9
Yellow Time (s)	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	None	None	None
Walk Time (s)	2.0	2.0	2.0
Flash Dont Walk (s)	0.0	0.0	0.0
Pedestrian Calls (#/hr)	160	160	160
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	18	689	29	599	101	58	35	43
v/c Ratio	0.04	0.58	0.07	0.50	0.46	0.19	0.16	0.15
Control Delay	5.5	16.2	5.0	20.6	46.5	17.7	39.3	14.3
Queue Delay	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	18.5	5.0	20.6	46.5	17.7	39.3	14.3
Queue Length 50th (ft)	3	270	3	243	60	8	20	2
Queue Length 95th (ft)	10	379	m9	364	110	44	48	32
Internal Link Dist (ft)		431		46		420		58
Turn Bay Length (ft)								
Base Capacity (vph)	512	1191	429	1197	244	334	241	322
Starvation Cap Reductn	0	352	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.82	0.07	0.50	0.41	0.17	0.15	0.13

Intersection Summary

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



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	650	43	32	553	43	105
Future Volume (vph)	650	43	32	553	43	105
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.992				0.904	
Flt Protected				0.997	0.986	
Satd. Flow (prot)	2083	0	0	2094	1872	0
Flt Permitted				0.997	0.986	
Satd. Flow (perm)	2083	0	0	2094	1872	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	369			279	211	
Travel Time (s)	8.4			6.3	4.8	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	663	44	33	564	44	107
Shared Lane Traffic (%)						
Lane Group Flow (vph)	707	0	0	597	151	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			

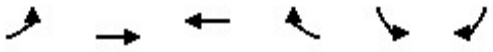
Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	650	43	32	553	43	105
Future Vol, veh/h	650	43	32	553	43	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	663	44	33	564	44	107

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	707	0	1315	685
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	630	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	901	-	176	452
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	901	-	167	452
Mov Cap-2 Maneuver	-	-	-	-	167	-
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	507	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	28.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	302	-	-	901	-
HCM Lane V/C Ratio	0.5	-	-	0.036	-
HCM Control Delay (s)	28.3	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	2.6	-	-	0.1	-

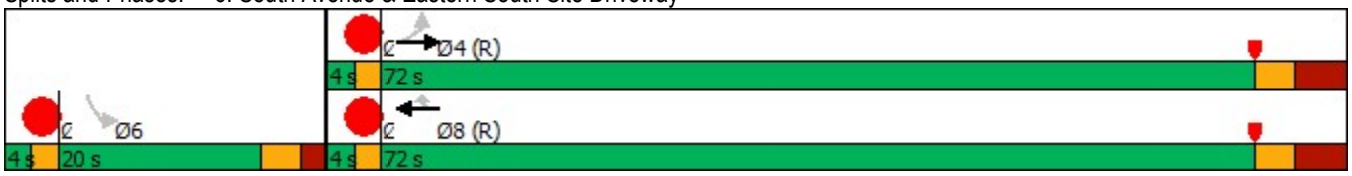


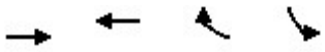
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Lane Configurations									
Traffic Volume (vph)	28	694	584	28	33	59			
Future Volume (vph)	28	694	584	28	33	59			
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100			
Storage Length (ft)	0			150	0	0			
Storage Lanes	0			1	1	0			
Taper Length (ft)	25				25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt				0.850	0.913				
Flt Protected		0.998			0.982				
Satd. Flow (prot)	0	2096	2100	1785	1883	0			
Flt Permitted		0.962			0.982				
Satd. Flow (perm)	0	2020	2100	1785	1883	0			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)				30	63				
Link Speed (mph)		30	30		25				
Link Distance (ft)		279	494		163				
Travel Time (s)		6.3	11.2		4.4				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%			
Adj. Flow (vph)	30	746	628	30	35	63			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	776	628	30	98	0			
Number of Detectors	1	2	2	1	1				
Detector Template	Left	Thru	Thru	Right	Left				
Leading Detector (ft)	20	100	100	20	20				
Trailing Detector (ft)	0	0	0	0	0				
Detector 1 Position(ft)	0	0	0	0	0				
Detector 1 Size(ft)	20	6	6	20	20				
Detector 1 Type	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				
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0				
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0				
Detector 2 Position(ft)		94	94						
Detector 2 Size(ft)		6	6						
Detector 2 Type		Cl+Ex	Cl+Ex						
Detector 2 Channel									
Detector 2 Extend (s)		0.0	0.0						
Turn Type	Perm	NA	NA	Perm	Perm				
Protected Phases		4	8				3	5	7
Permitted Phases	4			8	6				
Detector Phase	4	4	8	8	6				
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0	10.0	7.0		1.0	1.0	1.0
Minimum Split (s)	23.0	23.0	23.0	23.0	19.0		4.0	4.0	4.0
Total Split (s)	72.0	72.0	72.0	72.0	20.0		4.0	4.0	4.0
Total Split (%)	72.0%	72.0%	72.0%	72.0%	20.0%		4%	4%	4%
Maximum Green (s)	65.0	65.0	65.0	65.0	15.0		2.0	2.0	2.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		2.0	2.0	2.0
All-Red Time (s)	4.0	4.0	4.0	4.0	2.0		0.0	0.0	0.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0				
Total Lost Time (s)		7.0	7.0	7.0	5.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag		Lead	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
Recall Mode	C-Max	C-Max	C-Max	C-Max	Max		None	None	None
Walk Time (s)	3.0	3.0	3.0	3.0	3.0		2.0	2.0	2.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	11.0		0.0	0.0	0.0
Pedestrian Calls (#/hr)	50	50	50	50	50		50	50	50
Act Effct Green (s)		65.8	65.8	65.8	15.8				
Actuated g/C Ratio		0.66	0.66	0.66	0.16				
v/c Ratio		0.58	0.45	0.03	0.28				
Control Delay		7.6	8.2	2.8	18.7				
Queue Delay		0.0	0.5	0.0	0.0				
Total Delay		7.6	8.7	2.8	18.7				
LOS		A	A	A	B				
Approach Delay		7.6	8.4		18.7				
Approach LOS		A	A		B				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 69.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: South Avenue & Eastern South Site Driveway





Lane Group	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	776	628	30	98
v/c Ratio	0.58	0.45	0.03	0.28
Control Delay	7.6	8.2	2.8	18.7
Queue Delay	0.0	0.5	0.0	0.0
Total Delay	7.6	8.7	2.8	18.7
Queue Length 50th (ft)	141	129	1	20
Queue Length 95th (ft)	180	233	m4	66
Internal Link Dist (ft)	199	414		83
Turn Bay Length (ft)			150	
Base Capacity (vph)	1329	1382	1184	350
Starvation Cap Reductn	24	356	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.61	0.03	0.28

Intersection Summary

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

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	134	398	196	11	94	26	378	253	4	152	466	65
Future Volume (vph)	134	398	196	11	94	26	378	253	4	152	466	65
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	90		0			0		115		100		0
Storage Lanes	1		0			1		1		1		0
Taper Length (ft)	25					25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949						0.850			0.982	
Flt Protected	0.950					0.950				0.950		
Satd. Flow (prot)	1995	3737	0	0	0	1995	2100	1767	0	1976	2017	0
Flt Permitted	0.348					0.301				0.364		
Satd. Flow (perm)	731	3737	0	0	0	632	2100	1767	0	757	2017	0
Right Turn on Red				Yes				No				Yes
Satd. Flow (RTOR)		2									7	
Link Speed (mph)		30					30				25	
Link Distance (ft)		494					926				398	
Travel Time (s)		11.2					21.0				10.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	1%	2%	4%
Adj. Flow (vph)	140	415	204	11	98	27	394	264	4	158	485	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	630	0	0	0	125	394	264	0	162	553	0
Number of Detectors	1	2			1	1	2	1	1	1	2	
Detector Template	Left	Thru			Left	Left	Thru	Right	Left	Left	Thru	
Leading Detector (ft)	20	100			20	20	100	20	20	20	100	
Trailing Detector (ft)	0	0			0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0			0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6			20	20	6	20	20	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	
Detector 2 Position(ft)		94					94				94	
Detector 2 Size(ft)		6					6				6	
Detector 2 Type		Cl+Ex					Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0					0.0				0.0	
Turn Type	pm+pt	NA			custom	pm+pt	NA	Perm	custom	pm+pt	NA	
Protected Phases	5	2				1	6			7	4	
Permitted Phases	2				1	6		6	7	4		
Detector Phase	5	2			1	1	6	6	7	7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0			5.0	5.0	10.0	10.0	5.0	5.0	7.0	
Minimum Split (s)	8.0	18.0			8.0	8.0	38.0	38.0	8.0	8.0	15.0	
Total Split (s)	8.0	37.0			9.0	9.0	38.0	38.0	11.0	11.0	39.0	
Total Split (%)	8.0%	37.0%			9.0%	9.0%	38.0%	38.0%	11.0%	11.0%	39.0%	
Maximum Green (s)	5.0	29.0			6.0	6.0	30.0	30.0	8.0	8.0	31.0	

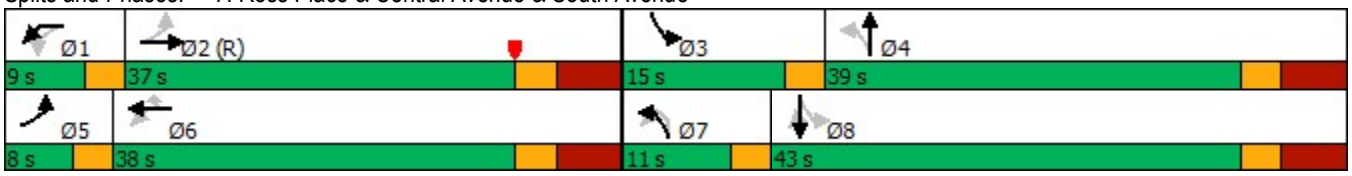


Lane Group	SBL	SBT	SBR	SBR2
Lane Configurations				
Traffic Volume (vph)	235	403	89	103
Future Volume (vph)	235	403	89	103
Ideal Flow (vphpl)	2100	2100	2100	2100
Storage Length (ft)	105		0	
Storage Lanes	1		1	
Taper Length (ft)	25			
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.850	
Flt Protected	0.950			
Satd. Flow (prot)	1995	2059	1777	0
Flt Permitted	0.122			
Satd. Flow (perm)	256	2059	1777	0
Right Turn on Red				Yes
Satd. Flow (RTOR)			120	
Link Speed (mph)		25		
Link Distance (ft)		809		
Travel Time (s)		22.1		
Peak Hour Factor	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	2%	1%	0%
Adj. Flow (vph)	245	420	93	107
Shared Lane Traffic (%)				
Lane Group Flow (vph)	245	420	200	0
Number of Detectors	1	2	1	
Detector Template	Left	Thru	Right	
Leading Detector (ft)	20	100	20	
Trailing Detector (ft)	0	0	0	
Detector 1 Position(ft)	0	0	0	
Detector 1 Size(ft)	20	6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel				
Detector 1 Extend (s)	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	
Detector 2 Position(ft)		94		
Detector 2 Size(ft)		6		
Detector 2 Type		Cl+Ex		
Detector 2 Channel				
Detector 2 Extend (s)		0.0		
Turn Type	pm+pt	NA	Perm	
Protected Phases	3	8		
Permitted Phases	8		8	
Detector Phase	3	8	8	
Switch Phase				
Minimum Initial (s)	5.0	7.0	7.0	
Minimum Split (s)	8.0	38.0	38.0	
Total Split (s)	15.0	43.0	43.0	
Total Split (%)	15.0%	43.0%	43.0%	
Maximum Green (s)	12.0	35.0	35.0	

Lane Group	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0			0.0	0.0	5.0	5.0	0.0	0.0	5.0	
Lost Time Adjust (s)	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	8.0				3.0	8.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag			Lead	Lead	Lag	Lag	Lead	Lead	Lag	
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	
Recall Mode	None	C-Max			None	None	None	None	None	None	None	
Walk Time (s)							7.0	7.0				
Flash Dont Walk (s)							23.0	23.0				
Pedestrian Calls (#/hr)							50	50				
Act Effct Green (s)	41.1	30.6				42.6	31.3	31.3		42.6	29.7	
Actuated g/C Ratio	0.41	0.31				0.43	0.31	0.31		0.43	0.30	
v/c Ratio	0.38	0.55				0.35	0.60	0.48		0.39	0.91	
Control Delay	9.8	18.2				20.1	34.2	31.8		16.7	54.8	
Queue Delay	0.0	0.0				0.0	0.0	0.0		0.0	0.0	
Total Delay	9.8	18.2				20.1	34.2	31.8		16.7	54.8	
LOS	A	B				C	C	C		B	D	
Approach Delay		16.7					31.1				46.2	
Approach LOS		B					C				D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 29.3		Intersection LOS: C	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: Ross Place & Central Avenue & South Avenue





Lane Group	SBL	SBT	SBR	SBR2
Yellow Time (s)	3.0	3.0	3.0	
All-Red Time (s)	0.0	5.0	5.0	
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	3.0	8.0	8.0	
Lead/Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	
Recall Mode	None	None	None	
Walk Time (s)		7.0	7.0	
Flash Dont Walk (s)		23.0	23.0	
Pedestrian Calls (#/hr)		50	50	
Act Effct Green (s)	49.0	33.3	33.3	
Actuated g/C Ratio	0.49	0.33	0.33	
v/c Ratio	0.76	0.61	0.30	
Control Delay	41.0	24.0	7.2	
Queue Delay	0.0	0.0	0.0	
Total Delay	41.0	24.0	7.2	
LOS	D	C	A	
Approach Delay		24.9		
Approach LOS		C		

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	140	630	125	394	264	162	553	245	420	200
v/c Ratio	0.38	0.55	0.35	0.60	0.48	0.39	0.91	0.76	0.61	0.30
Control Delay	9.8	18.2	20.1	34.2	31.8	16.7	54.8	41.0	24.0	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	18.2	20.1	34.2	31.8	16.7	54.8	41.0	24.0	7.2
Queue Length 50th (ft)	35	100	47	216	138	53	329	119	167	29
Queue Length 95th (ft)	60	166	84	316	217	89	#522	m#199	m245	m68
Internal Link Dist (ft)		414		846			318		729	
Turn Bay Length (ft)	90				115	100		105		
Base Capacity (vph)	370	1143	354	657	553	421	630	334	720	699
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	0.38	0.55	0.35	0.60	0.48	0.38	0.88	0.73	0.58	0.29

Intersection Summary

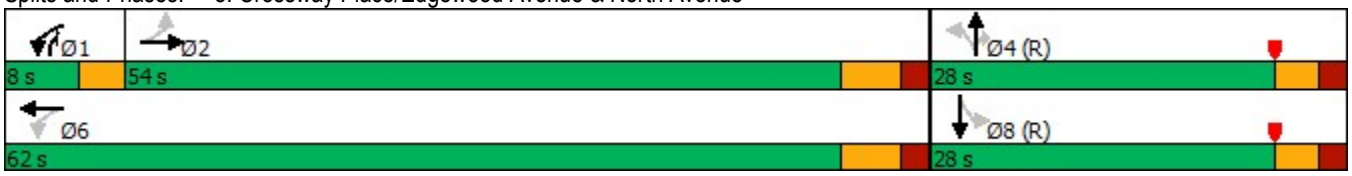
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

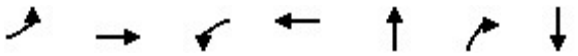
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	481	50	255	531	17	67	58	306	5	58	13
Future Volume (vph)	6	481	50	255	531	17	67	58	306	5	58	13
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	135		0	118		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.995				0.850		0.977	
Flt Protected	0.950			0.950				0.974			0.997	
Satd. Flow (prot)	1995	2052	0	1995	2050	0	0	2045	1750	0	2046	0
Flt Permitted	0.419			0.304				0.803			0.985	
Satd. Flow (perm)	880	2052	0	638	2050	0	0	1686	1750	0	2021	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			3				310		11	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		750			630			296			544	
Travel Time (s)		14.6			12.3			8.1			14.8	
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 (%)	0%	1%	0%	0%	2%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	6	517	54	274	571	18	72	62	329	5	62	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	571	0	274	589	0	0	134	329	0	81	0
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases		2		1	6			4	1		8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	1	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		7.0	7.0	5.0	7.0	7.0	
Minimum Split (s)	54.0	54.0		14.0	54.0		28.0	28.0	14.0	28.0	28.0	
Total Split (s)	54.0	54.0		8.0	62.0		28.0	28.0	8.0	28.0	28.0	
Total Split (%)	60.0%	60.0%		8.9%	68.9%		31.1%	31.1%	8.9%	31.1%	31.1%	
Maximum Green (s)	48.0	48.0		5.0	56.0		23.0	23.0	5.0	23.0	23.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		3.0	6.0			5.0	3.0		5.0	
Lead/Lag	Lag	Lag		Lead					Lead			
Lead-Lag Optimize?	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	
Recall Mode	Max	Max		None	Max		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	20.0	20.0			20.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	22.0	22.0			22.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	48.0	48.0		59.0	56.0			23.0	33.0		23.0	
Actuated g/C Ratio	0.53	0.53		0.66	0.62			0.26	0.37		0.26	
v/c Ratio	0.01	0.52		0.56	0.46			0.31	0.39		0.15	
Control Delay	10.0	15.5		11.2	10.4			29.5	4.6		23.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	10.0	15.5		11.2	10.4			29.5	4.6		23.6	
LOS	A	B		B	B			C	A		C	
Approach Delay		15.4			10.7			11.8			23.6	
Approach LOS		B			B			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 77 (86%), Referenced to phase 4:NBTL and 8:SBTL, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

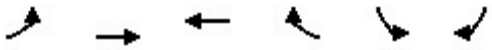
Splits and Phases: 8: Crossway Place/Edgewood Avenue & North Avenue



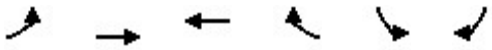


Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	6	571	274	589	134	329	81
v/c Ratio	0.01	0.52	0.56	0.46	0.31	0.39	0.15
Control Delay	10.0	15.5	11.2	10.4	29.5	4.6	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	15.5	11.2	10.4	29.5	4.6	23.6
Queue Length 50th (ft)	2	194	55	160	62	7	31
Queue Length 95th (ft)	7	285	87	232	112	61	67
Internal Link Dist (ft)		670		550	216		464
Turn Bay Length (ft)	135		118				
Base Capacity (vph)	469	1098	493	1276	430	838	524
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.52	0.56	0.46	0.31	0.39	0.15

Intersection Summary



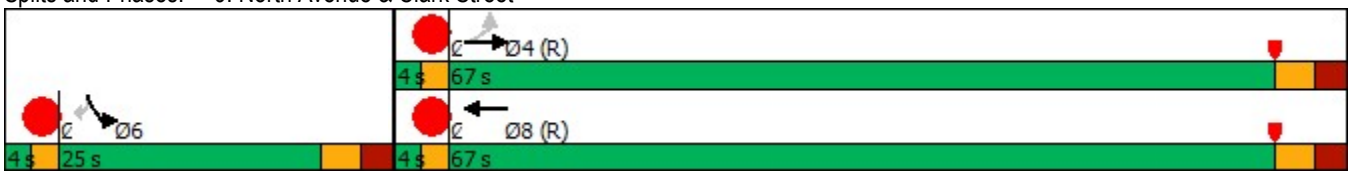
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Lane Configurations									
Traffic Volume (vph)	14	569	524	148	163	35			
Future Volume (vph)	14	569	524	148	163	35			
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100			
Storage Length (ft)	0			0	0	50			
Storage Lanes	0			0	1	1			
Taper Length (ft)	25				25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Frt			0.970			0.850			
Flt Protected		0.999			0.950				
Satd. Flow (prot)	0	2098	2033	0	1995	1785			
Flt Permitted		0.981			0.950				
Satd. Flow (perm)	0	2060	2033	0	1995	1785			
Right Turn on Red				No		Yes			
Satd. Flow (RTOR)						29			
Link Speed (mph)		35	35		25				
Link Distance (ft)		175	395		156				
Travel Time (s)		3.4	7.7		4.3				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%			
Adj. Flow (vph)	14	587	540	153	168	36			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	601	693	0	168	36			
Number of Detectors	1	2	2		1	1			
Detector Template	Left	Thru	Thru		Left	Right			
Leading Detector (ft)	20	100	100		20	20			
Trailing Detector (ft)	0	0	0		0	0			
Detector 1 Position(ft)	0	0	0		0	0			
Detector 1 Size(ft)	20	6	6		20	20			
Detector 1 Type	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			
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0			
Detector 2 Position(ft)		94	94						
Detector 2 Size(ft)		6	6						
Detector 2 Type		Cl+Ex	Cl+Ex						
Detector 2 Channel									
Detector 2 Extend (s)		0.0	0.0						
Turn Type	Perm	NA	NA		Prot	Perm			
Protected Phases		4	8		6		3	5	7
Permitted Phases	4					6			
Detector Phase	4	4	8		6	6			
Switch Phase									
Minimum Initial (s)	10.0	10.0	10.0		5.0	5.0	1.0	1.0	1.0
Minimum Split (s)	19.5	19.5	19.5		19.5	19.5	4.0	4.0	4.0
Total Split (s)	67.0	67.0	67.0		25.0	25.0	4.0	4.0	4.0
Total Split (%)	67.0%	67.0%	67.0%		25.0%	25.0%	4%	4%	4%
Maximum Green (s)	61.5	61.5	61.5		19.5	19.5	2.0	2.0	2.0

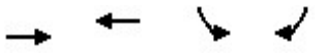


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3	Ø5	Ø7
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5	0.0	0.0	0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0			
Total Lost Time (s)		5.5	5.5		5.5	5.5			
Lead/Lag	Lag	Lag	Lag		Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	C-Max	C-Max	C-Max		Max	Max	None	None	None
Walk Time (s)	3.0	3.0	3.0		3.0	3.0	2.0	2.0	2.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	20	20	20		20	20	20	20	20
Act Effct Green (s)		63.9	63.9		21.9	21.9			
Actuated g/C Ratio		0.64	0.64		0.22	0.22			
v/c Ratio		0.46	0.53		0.39	0.09			
Control Delay		10.9	12.5		37.1	15.3			
Queue Delay		0.0	1.0		0.0	0.0			
Total Delay		10.9	13.4		37.1	15.3			
LOS		B	B		D	B			
Approach Delay		10.9	13.4		33.2				
Approach LOS		B	B		C				

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

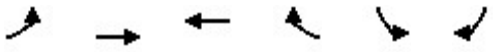
Splits and Phases: 9: North Avenue & Clark Street





Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	601	693	168	36
v/c Ratio	0.46	0.53	0.39	0.09
Control Delay	10.9	12.5	37.1	15.3
Queue Delay	0.0	1.0	0.0	0.0
Total Delay	10.9	13.4	37.1	15.3
Queue Length 50th (ft)	168	253	90	4
Queue Length 95th (ft)	272	297	159	31
Internal Link Dist (ft)	95	315	76	
Turn Bay Length (ft)				50
Base Capacity (vph)	1316	1299	436	413
Starvation Cap Reductn	0	338	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	0.72	0.39	0.09

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	168	163	0	51	17
Future Volume (vph)	0	168	163	0	51	17
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.966	
Flt Protected					0.964	
Satd. Flow (prot)	0	2079	2100	0	1956	0
Flt Permitted					0.964	
Satd. Flow (perm)	0	2079	2100	0	1956	0
Link Speed (mph)		25	25		25	
Link Distance (ft)		92	156		161	
Travel Time (s)		2.5	4.3		4.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	0	187	181	0	57	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	187	181	0	76	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.2%		ICU Level of Service A	
Analysis Period (min) 15			

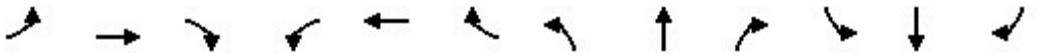
Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	168	163	0	51	17
Future Vol, veh/h	0	168	163	0	51	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	0	187	181	0	57	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	368	181
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	636	867
Stage 1	0	-	-	0	855	-
Stage 2	0	-	-	0	850	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	636	867
Mov Cap-2 Maneuver	-	-	-	-	636	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	850	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	681
HCM Lane V/C Ratio	-	-	0.111
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

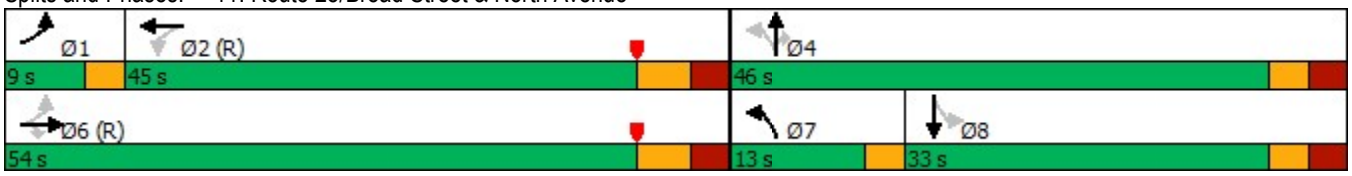


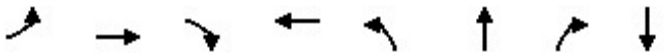
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	331	338	189	447	12	244	417	160	47	378	108
Future Volume (vph)	126	331	338	189	447	12	244	417	160	47	378	108
Ideal Flow (vphpl)	2100	1600	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	185		125	0		0	0		0	0		75
Storage Lanes	1		1	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850		0.997				0.850		0.970	
Flt Protected	0.950				0.986		0.950				0.996	
Satd. Flow (prot)	1975	1600	1767	0	3795	0	1995	2100	1785	0	3820	0
Flt Permitted	0.309				0.742		0.230				0.860	
Satd. Flow (perm)	642	1600	1767	0	2856	0	483	2100	1785	0	3298	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			348		2						31	
Link Speed (mph)		35			25			25			25	
Link Distance (ft)		395			555			498			430	
Travel Time (s)		7.7			15.1			13.6			11.7	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	2%	4%	0%	0%	0%	0%	0%	1%	1%
Adj. Flow (vph)	130	341	348	195	461	12	252	430	165	48	390	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	341	348	0	668	0	252	430	165	0	549	0
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6			2		7	4			8	
Permitted Phases	6		6	2			4		4	8		
Detector Phase	1	6	6	2	2		7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0		5.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	8.0	30.0	30.0	30.0	30.0		8.0	24.0	24.0	24.0	24.0	
Total Split (s)	9.0	54.0	54.0	45.0	45.0		13.0	46.0	46.0	33.0	33.0	
Total Split (%)	9.0%	54.0%	54.0%	45.0%	45.0%		13.0%	46.0%	46.0%	33.0%	33.0%	
Maximum Green (s)	6.0	47.0	47.0	38.0	38.0		10.0	40.0	40.0	27.0	27.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	3.0	3.0	3.0	3.0		0.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.0	7.0	7.0		7.0		3.0	6.0	6.0		6.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	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	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		16.0	16.0	16.0	16.0			11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		20	20	20	20			20	20	20	20	
Act Effct Green (s)	56.3	52.3	52.3		42.0		37.7	34.7	34.7		21.7	
Actuated g/C Ratio	0.56	0.52	0.52		0.42		0.38	0.35	0.35		0.22	
v/c Ratio	0.28	0.41	0.32		0.56		0.76	0.59	0.27		0.74	
Control Delay	10.2	14.8	2.5		20.3		37.4	29.9	23.8		40.6	
Queue Delay	0.0	0.5	0.3		0.0		0.9	0.0	0.0		0.1	
Total Delay	10.2	15.3	2.7		20.3		38.3	29.9	23.8		40.6	
LOS	B	B	A		C		D	C	C		D	
Approach Delay		9.2			20.3			31.2			40.6	
Approach LOS		A			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 24.2		Intersection LOS: C	
Intersection Capacity Utilization 92.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 11: Route 28/Broad Street & North Avenue





Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	130	341	348	668	252	430	165	549
v/c Ratio	0.28	0.41	0.32	0.56	0.76	0.59	0.27	0.74
Control Delay	10.2	14.8	2.5	20.3	37.4	29.9	23.8	40.6
Queue Delay	0.0	0.5	0.3	0.0	0.9	0.0	0.0	0.1
Total Delay	10.2	15.3	2.7	20.3	38.3	29.9	23.8	40.6
Queue Length 50th (ft)	27	146	5	152	113	223	75	163
Queue Length 95th (ft)	55	241	25	125	#167	295	116	207
Internal Link Dist (ft)		315		475		418		350
Turn Bay Length (ft)	185		125					
Base Capacity (vph)	459	837	1090	1200	333	840	714	913
Starvation Cap Reductn	0	186	289	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	11	0	0	21
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.52	0.43	0.56	0.78	0.51	0.23	0.62

Intersection Summary

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

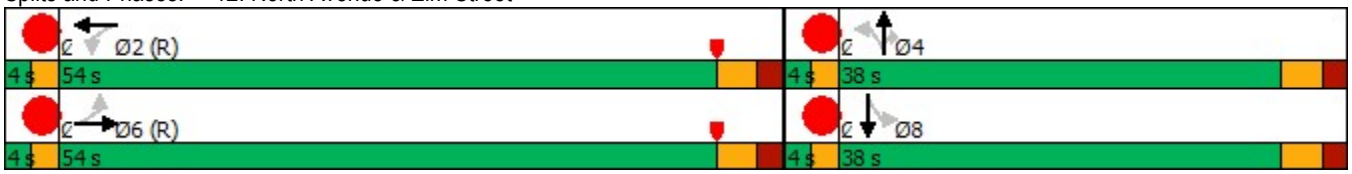
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	480	48	46	632	132	2	2	68	128	28	92
Future Volume (vph)	24	480	48	46	632	132	2	2	68	128	28	92
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.976				0.850		0.950	
Flt Protected		0.998			0.997			0.976			0.975	
Satd. Flow (prot)	0	3930	0	0	3883	0	0	2050	1785	0	1945	0
Flt Permitted		0.900			0.889			0.912			0.836	
Satd. Flow (perm)	0	3544	0	0	3462	0	0	1915	1785	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			32				69		32	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		163			479			193			176	
Travel Time (s)		4.4			13.1			4.4			4.0	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	24	485	48	46	638	133	2	2	69	129	28	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	557	0	0	817	0	0	4	69	0	250	0
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		6			2			4			8	
Permitted Phases	6			2			4		4	8		
Detector Phase	6	6		2	2		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	19.0	19.0		19.0	19.0		19.0	19.0	19.0	19.0	19.0	
Total Split (s)	54.0	54.0		54.0	54.0		38.0	38.0	38.0	38.0	38.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%		38.0%	38.0%	38.0%	38.0%	38.0%	
Maximum Green (s)	49.0	49.0		49.0	49.0		33.0	33.0	33.0	33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
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)		0.0			0.0			0.0	0.0		0.0	

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Util. Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	1.0	1.0	1.0	1.0
Minimum Split (s)	4.0	4.0	4.0	4.0
Total Split (s)	4.0	4.0	4.0	4.0
Total Split (%)	4%	4%	4%	4%
Maximum Green (s)	2.0	2.0	2.0	2.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	
Lead/Lag	Lag	Lag		Lag	Lag		Lag	Lag	Lag	Lag	Lag	
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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	160	160		160	160		160	160	160	160	160	
Act Effct Green (s)		59.3			59.3			19.2	19.2		19.2	
Actuated g/C Ratio		0.59			0.59			0.19	0.19		0.19	
v/c Ratio		0.26			0.40			0.01	0.17		0.72	
Control Delay		7.8			8.6			29.2	8.5		44.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		7.8			8.6			29.2	8.5		44.5	
LOS		A			A			C	A		D	
Approach Delay		7.8			8.6			9.7			44.5	
Approach LOS		A			A			A			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 3 (3%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 12: North Avenue & Elm Street

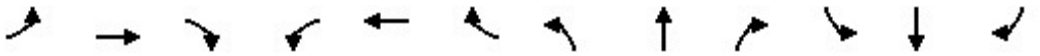


Lane Group	Ø1	Ø3	Ø5	Ø7
Total Lost Time (s)				
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)	2.0	2.0	2.0	2.0
Flash Dont Walk (s)	0.0	0.0	0.0	0.0
Pedestrian Calls (#/hr)	160	160	160	160
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				

Intersection Summary

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	557	817	4	69	250
v/c Ratio	0.26	0.40	0.01	0.17	0.72
Control Delay	7.8	8.6	29.2	8.5	44.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	8.6	29.2	8.5	44.5
Queue Length 50th (ft)	68	85	2	0	133
Queue Length 95th (ft)	100	156	10	33	199
Internal Link Dist (ft)	83	399	113		96
Turn Bay Length (ft)					
Base Capacity (vph)	2105	2064	631	635	571
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	0.26	0.40	0.01	0.11	0.44

Intersection Summary

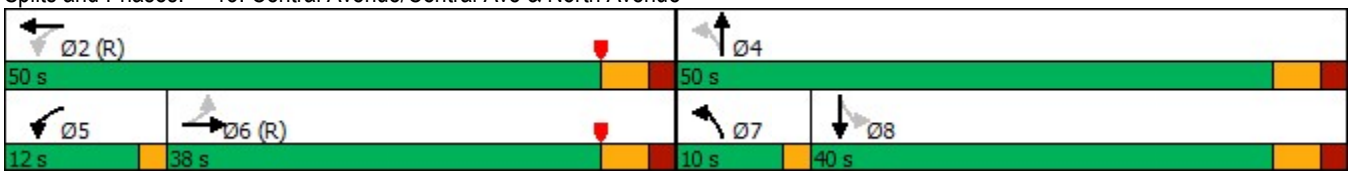


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	388	211	218	537	59	219	494	171	44	457	31
Future Volume (vph)	76	388	211	218	537	59	219	494	171	44	457	31
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			75			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.953			0.989			0.971			0.991	
Flt Protected		0.994			0.987			0.988			0.996	
Satd. Flow (prot)	0	3780	0	0	3895	0	0	3828	0	0	3938	0
Flt Permitted		0.739			0.557			0.615			0.800	
Satd. Flow (perm)	0	2810	0	0	2198	0	0	2383	0	0	3163	0
Right Turn on Red			No			Yes			Yes			No
Satd. Flow (RTOR)					10			38				
Link Speed (mph)		25			35			25			25	
Link Distance (ft)		203			706			809			223	
Travel Time (s)		5.5			13.8			22.1			6.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	78	396	215	222	548	60	223	504	174	45	466	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	689	0	0	830	0	0	901	0	0	543	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		Perm	NA	
Protected Phases		6		5	2		7	4			8	
Permitted Phases	6			2			4			8		
Detector Phase	6	6		5	2		7	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		5.0	7.0		7.0	7.0	
Minimum Split (s)	31.6	31.6		7.1	31.6		7.1	31.6		31.6	31.6	
Total Split (s)	38.0	38.0		12.0	50.0		10.0	50.0		40.0	40.0	
Total Split (%)	38.0%	38.0%		12.0%	50.0%		10.0%	50.0%		40.0%	40.0%	
Maximum Green (s)	32.4	32.4		9.9	44.4		7.9	44.4		34.4	34.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.5	3.5		2.1	3.5		2.1	3.5		3.5	3.5	
All-Red Time (s)	2.1	2.1		0.0	2.1		0.0	2.1		2.1	2.1	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.6			5.6			5.6			5.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		Max	C-Max		Max	None		None	None	
Walk Time (s)	5.0	5.0			5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	21.0	21.0			21.0			21.0		21.0	21.0	
Pedestrian Calls (#/hr)	20	20			20			20		20	20	
Act Effct Green (s)		32.4			47.5			41.3			31.3	
Actuated g/C Ratio		0.32			0.48			0.41			0.31	
v/c Ratio		0.76			0.69			0.84			0.55	
Control Delay		29.2			23.0			43.6			30.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.2			23.0			43.6			30.3	
LOS		C			C			D			C	
Approach Delay		29.2			23.0			43.6			30.3	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 32.1		Intersection LOS: C	
Intersection Capacity Utilization 93.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 13: Central Avenue/Central Ave & North Avenue



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	689	830	901	543
v/c Ratio	0.76	0.69	0.84	0.55
Control Delay	29.2	23.0	43.6	30.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.2	23.0	43.6	30.3
Queue Length 50th (ft)	168	185	208	144
Queue Length 95th (ft)	258	242	m338	194
Internal Link Dist (ft)	123	626	729	143
Turn Bay Length (ft)				
Base Capacity (vph)	910	1210	1142	1088
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	0.69	0.79	0.50

Intersection Summary

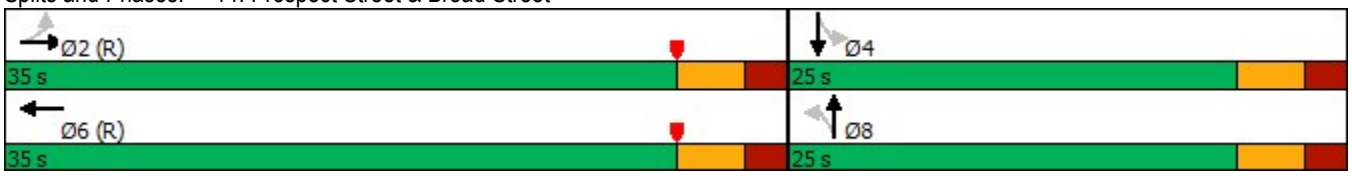
m Volume for 95th percentile queue is metered by upstream signal.

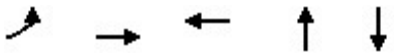
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	453	1	0	370	72	17	47	76	0	0	166
Future Volume (vph)	143	453	1	0	370	72	17	47	76	0	0	166
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	128		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.978			0.927			0.865	
Flt Protected	0.950							0.994				
Satd. Flow (prot)	1995	2079	0	0	2044	0	0	1935	0	0	1799	0
Flt Permitted	0.474							0.898				
Satd. Flow (perm)	995	2079	0	0	2044	0	0	1748	0	0	1799	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					23			82			390	
Link Speed (mph)		25			25			25			30	
Link Distance (ft)		430			482			224			309	
Travel Time (s)		11.7			13.1			6.1			7.0	
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 (%)	0%	1%	0%	0%	0%	3%	0%	0%	0%	0%	0%	1%
Adj. Flow (vph)	154	487	1	0	398	77	18	51	82	0	0	178
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	488	0	0	475	0	0	151	0	0	178	0
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100			100		20	100		20	100	
Trailing Detector (ft)	0	0			0		0	0		0	0	
Detector 1 Position(ft)	0	0			0		0	0		0	0	
Detector 1 Size(ft)	20	6			6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA			NA	
Protected Phases		2			6			8			4	
Permitted Phases	2						8			4		
Detector Phase	2	2			6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0			23.0		23.0	23.0		23.0	23.0	
Total Split (s)	35.0	35.0			35.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%			58.3%		41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0			30.0		20.0	20.0		20.0	20.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0			2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
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	
Recall Mode	C-Max	C-Max			C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	41.9	41.9			41.9			8.1			8.1	
Actuated g/C Ratio	0.70	0.70			0.70			0.14			0.14	
v/c Ratio	0.22	0.34			0.33			0.50			0.31	
Control Delay	4.7	4.7			2.4			17.6			1.4	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	4.7	4.7			2.4			17.6			1.4	
LOS	A	A			A			B			A	
Approach Delay		4.7			2.4			17.6			1.4	
Approach LOS		A			A			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 59.5 (99%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 4.9		Intersection LOS: A	
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			

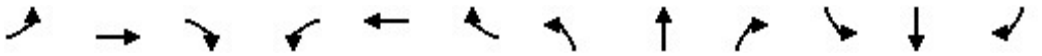
Splits and Phases: 14: Prospect Street & Broad Street





Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	154	488	475	151	178
v/c Ratio	0.22	0.34	0.33	0.50	0.31
Control Delay	4.7	4.7	2.4	17.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	4.7	2.4	17.6	1.4
Queue Length 50th (ft)	15	52	19	23	0
Queue Length 95th (ft)	43	113	33	65	0
Internal Link Dist (ft)		350	402	144	229
Turn Bay Length (ft)	128				
Base Capacity (vph)	695	1453	1435	637	859
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	0.22	0.34	0.33	0.24	0.21

Intersection Summary



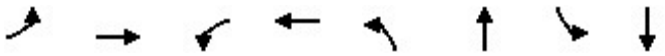
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	362	73	33	303	79	51	149	87	124	115	81
Future Volume (vph)	75	362	73	33	303	79	51	149	87	124	115	81
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Storage Length (ft)	105		0	60		0	0		80	0		115
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.969			0.945			0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1995	2048	0	1995	2035	0	1995	1985	0	1995	1970	0
Flt Permitted	0.520			0.478			0.570			0.475		
Satd. Flow (perm)	1092	2048	0	1004	2035	0	1197	1985	0	998	1970	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			28			56			66	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		482			318			290			825	
Travel Time (s)		13.1			8.7			6.6			18.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	78	377	76	34	316	82	53	155	91	129	120	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	453	0	34	398	0	53	246	0	129	204	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (s)	33.0	33.0		33.0	33.0		27.0	27.0		27.0	27.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	27.0	27.0		27.0	27.0		22.0	22.0		22.0	22.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		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	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		15.0	15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	37.0	37.0		37.0	37.0		12.0	12.0		12.0	12.0	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.20	0.20		0.20	0.20	
v/c Ratio	0.12	0.36		0.05	0.31		0.22	0.56		0.65	0.46	
Control Delay	4.9	5.0		7.0	8.2		20.5	20.6		36.4	16.5	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay	4.9	5.0		7.0	8.6		20.5	20.6		36.4	16.5	
LOS	A	A		A	A		C	C		D	B	
Approach Delay		5.0			8.4			20.6			24.2	
Approach LOS		A			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 12.9		Intersection LOS: B	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 15: Broad Street & Elm Street





Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	78	453	34	398	53	246	129	204
v/c Ratio	0.12	0.36	0.05	0.31	0.22	0.56	0.65	0.46
Control Delay	4.9	5.0	7.0	8.2	20.5	20.6	36.4	16.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	4.9	5.0	7.0	8.6	20.5	20.6	36.4	16.5
Queue Length 50th (ft)	7	47	6	81	16	62	44	44
Queue Length 95th (ft)	21	77	22	154	37	106	82	82
Internal Link Dist (ft)		402		238		210		745
Turn Bay Length (ft)	105		60					
Base Capacity (vph)	673	1272	619	1266	438	763	365	764
Starvation Cap Reductn	0	0	0	398	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.36	0.05	0.46	0.12	0.32	0.35	0.27

Intersection Summary

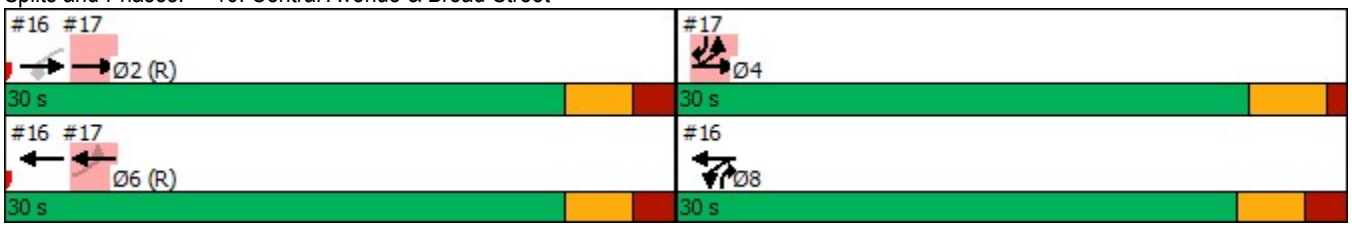


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Lane Configurations								
Traffic Volume (vph)	429	159	480	421	0	383		
Future Volume (vph)	429	159	480	421	0	383		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)		0	130		0	0		
Storage Lanes		1	1		0	1		
Taper Length (ft)			25		25			
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00		
Frt		0.850				0.865		
Flt Protected			0.950					
Satd. Flow (prot)	3990	1785	1995	2100	0	1817		
Flt Permitted			0.493					
Satd. Flow (perm)	3990	1785	1035	2100	0	1817		
Right Turn on Red		Yes				Yes		
Satd. Flow (RTOR)		166				270		
Link Speed (mph)	25			25	25			
Link Distance (ft)	318			103	716			
Travel Time (s)	8.7			2.8	19.5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	447	166	500	439	0	399		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	447	166	500	439	0	399		
Number of Detectors	2	1	1	2		1		
Detector Template	Thru	Right	Left	Thru		Right		
Leading Detector (ft)	100	20	20	100		20		
Trailing Detector (ft)	0	0	0	0		0		
Detector 1 Position(ft)	0	0	0	0		0		
Detector 1 Size(ft)	6	20	20	6		20		
Detector 1 Type	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		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0		
Detector 2 Position(ft)	94			94				
Detector 2 Size(ft)	6			6				
Detector 2 Type	Cl+Ex			Cl+Ex				
Detector 2 Channel								
Detector 2 Extend (s)	0.0			0.0				
Turn Type	NA	Perm	D.P+P	NA		Over		
Protected Phases	2		8	6 8		8	4	6
Permitted Phases		2	2					
Detector Phase	2	2	8	6 8		8		
Switch Phase								
Minimum Initial (s)	10.0	10.0	7.0			7.0	5.0	10.0
Minimum Split (s)	30.0	30.0	30.0			30.0	23.5	30.0
Total Split (s)	30.0	30.0	30.0			30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	50.0%			50.0%	50%	50%
Maximum Green (s)	25.0	25.0	25.0			25.0	25.5	25.0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø4	Ø6
Yellow Time (s)	3.0	3.0	3.0			3.0	3.5	3.0
All-Red Time (s)	2.0	2.0	2.0			2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		
Total Lost Time (s)	5.0	5.0	5.0			5.0		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0	3.0
Recall Mode	C-Max	C-Max	None			None	None	C-Max
Walk Time (s)	9.0	9.0	5.0			5.0	5.0	9.0
Flash Dont Walk (s)	16.0	16.0	14.0			14.0	14.0	16.0
Pedestrian Calls (#/hr)	0	0	0			0	0	0
Act Effct Green (s)	31.7	31.7	50.0	60.0		18.3		
Actuated g/C Ratio	0.53	0.53	0.83	1.00		0.30		
v/c Ratio	0.21	0.16	0.43	0.21		0.54		
Control Delay	9.5	4.1	2.8	0.2		7.5		
Queue Delay	0.0	0.0	0.2	0.0		0.0		
Total Delay	9.5	4.1	3.0	0.2		7.5		
LOS	A	A	A	A		A		
Approach Delay	8.0			1.7	7.5			
Approach LOS	A			A	A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBWB and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 4.9		Intersection LOS: A	
Intersection Capacity Utilization 43.1%		ICU Level of Service A	
Analysis Period (min) 15			

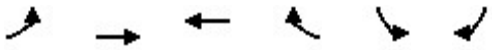
Splits and Phases: 16: Central Avenue & Broad Street





Lane Group	EBT	EBR	WBL	WBT	NBR
Lane Group Flow (vph)	447	166	500	439	399
v/c Ratio	0.21	0.16	0.43	0.21	0.54
Control Delay	9.5	4.1	2.8	0.2	7.5
Queue Delay	0.0	0.0	0.2	0.0	0.0
Total Delay	9.5	4.1	3.0	0.2	7.5
Queue Length 50th (ft)	47	0	0	0	33
Queue Length 95th (ft)	89	41	22	0	79
Internal Link Dist (ft)	238			23	
Turn Bay Length (ft)			130		
Base Capacity (vph)	2106	1020	1313	2098	914
Starvation Cap Reductn	0	0	244	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.16	0.47	0.21	0.44

Intersection Summary

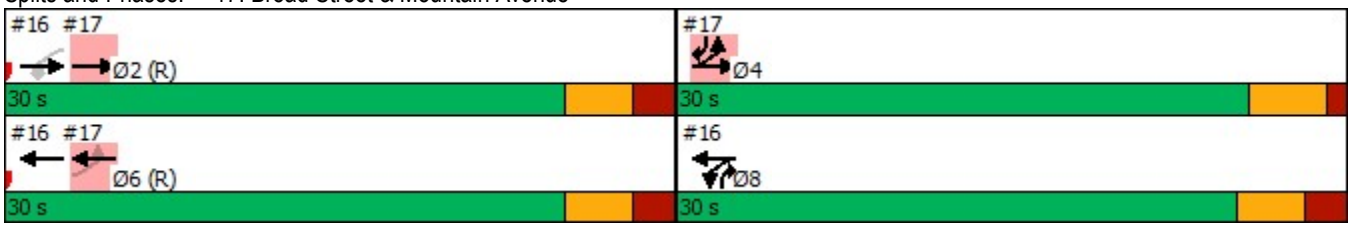


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Lane Configurations								
Traffic Volume (vph)	424	386	458	40	0	445		
Future Volume (vph)	424	386	458	40	0	445		
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100		
Storage Length (ft)	0			0	0	150		
Storage Lanes	1			0	0	1		
Taper Length (ft)	25				25			
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.88		
Frt			0.988			0.850		
Flt Protected	0.950							
Satd. Flow (prot)	1995	2100	3942	0	0	3142		
Flt Permitted	0.463							
Satd. Flow (perm)	972	2100	3942	0	0	3142		
Right Turn on Red				Yes		Yes		
Satd. Flow (RTOR)			18			439		
Link Speed (mph)		25	25		25			
Link Distance (ft)		93	398		1032			
Travel Time (s)		2.5	10.9		28.1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%		
Adj. Flow (vph)	437	398	472	41	0	459		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	437	398	513	0	0	459		
Number of Detectors	1	2	2			1		
Detector Template	Left	Thru	Thru			Right		
Leading Detector (ft)	20	100	100			20		
Trailing Detector (ft)	0	0	0			0		
Detector 1 Position(ft)	0	0	0			0		
Detector 1 Size(ft)	20	6	6			20		
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	0.0			0.0		
Detector 2 Position(ft)		94	94					
Detector 2 Size(ft)		6	6					
Detector 2 Type		Cl+Ex	Cl+Ex					
Detector 2 Channel								
Detector 2 Extend (s)		0.0	0.0					
Turn Type	D.P+P	NA	NA			Over		
Protected Phases	4	2 4	6			4	2	8
Permitted Phases	6							
Detector Phase	4	2 4	6			4		
Switch Phase								
Minimum Initial (s)	5.0		10.0			5.0	10.0	7.0
Minimum Split (s)	23.5		30.0			23.5	30.0	30.0
Total Split (s)	30.0		30.0			30.0	30.0	30.0
Total Split (%)	50.0%		50.0%			50.0%	50%	50%
Maximum Green (s)	25.5		25.0			25.5	25.0	25.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø8
Yellow Time (s)	3.5		3.0			3.5	3.0	3.0
All-Red Time (s)	1.0		2.0			1.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0			0.0		
Total Lost Time (s)	4.5		5.0			4.5		
Lead/Lag								
Lead-Lag Optimize?								
Vehicle Extension (s)	3.0		3.0			3.0	3.0	3.0
Recall Mode	None		C-Max			None	C-Max	None
Walk Time (s)	5.0		9.0			5.0	9.0	5.0
Flash Dont Walk (s)	14.0		16.0			14.0	16.0	14.0
Pedestrian Calls (#/hr)	0		0			0	0	0
Act Effct Green (s)	51.0	60.0	31.7			18.8		
Actuated g/C Ratio	0.85	1.00	0.53			0.31		
v/c Ratio	0.38	0.19	0.25			0.36		
Control Delay	2.1	0.2	9.3			2.5		
Queue Delay	0.2	0.0	0.0			0.0		
Total Delay	2.3	0.2	9.3			2.5		
LOS	A	A	A			A		
Approach Delay		1.3	9.3		2.5			
Approach LOS		A	A		A			

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:EBWB and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 3.9		Intersection LOS: A	
Intersection Capacity Utilization 41.8%		ICU Level of Service A	
Analysis Period (min) 15			

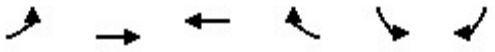
Splits and Phases: 17: Broad Street & Mountain Avenue





Lane Group	EBL	EBT	WBT	SBR
Lane Group Flow (vph)	437	398	513	459
v/c Ratio	0.38	0.19	0.25	0.36
Control Delay	2.1	0.2	9.3	2.5
Queue Delay	0.2	0.0	0.0	0.0
Total Delay	2.3	0.2	9.3	2.5
Queue Length 50th (ft)	0	0	50	2
Queue Length 95th (ft)	11	0	91	26
Internal Link Dist (ft)		13	318	
Turn Bay Length (ft)				150
Base Capacity (vph)	1304	2098	2090	1587
Starvation Cap Reductn	302	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.44	0.19	0.25	0.29

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↱
Traffic Volume (vph)	0	670	605	0	0	12
Future Volume (vph)	0	670	605	0	0	12
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	0	2100	2100	0	0	1817
Flt Permitted						
Satd. Flow (perm)	0	2100	2100	0	0	1817
Link Speed (mph)		30	30		30	
Link Distance (ft)		126	369		134	
Travel Time (s)		2.9	8.4		3.0	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	684	617	0	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	684	617	0	0	12
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	670	605	0	0	12
Future Vol, veh/h	0	670	605	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	684	617	0	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	617
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	494
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	494
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	494
HCM Lane V/C Ratio	-	-	0.025
HCM Control Delay (s)	-	-	12.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	558	10	35	600	8	28
Future Volume (vph)	558	10	35	600	8	28
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.894	
Flt Protected				0.997	0.989	
Satd. Flow (prot)	2075	0	0	2055	1857	0
Flt Permitted				0.997	0.989	
Satd. Flow (perm)	2075	0	0	2055	1857	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	473			427	221	
Travel Time (s)	9.2			8.3	6.0	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	575	10	36	619	8	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	585	0	0	655	37	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	558	10	35	600	8	28
Future Vol, veh/h	558	10	35	600	8	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	575	10	36	619	8	29

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	585	0	1271	580
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	691	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1000	-	187	518
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	501	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1000	-	177	518
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	473	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	363	-	-	1000	-
HCM Lane V/C Ratio	0.102	-	-	0.036	-
HCM Control Delay (s)	16	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	567	16	41	625	13	33
Future Volume (vph)	567	16	41	625	13	33
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.902	
Flt Protected				0.997	0.986	
Satd. Flow (prot)	2071	0	0	2055	1868	0
Flt Permitted				0.997	0.986	
Satd. Flow (perm)	2071	0	0	2055	1868	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	427			175	238	
Travel Time (s)	8.3			3.4	6.5	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	0%	0%	2%	0%	0%
Adj. Flow (vph)	579	16	42	638	13	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	595	0	0	680	47	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	567	16	41	625	13	33
Future Vol, veh/h	567	16	41	625	13	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	579	16	42	638	13	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	595	0	1309	587
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	722	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	991	-	177	513
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	485	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	991	-	165	513
Mov Cap-2 Maneuver	-	-	-	-	165	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	453	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	991	-
HCM Lane V/C Ratio	0.146	-	-	0.042	-
HCM Control Delay (s)	18.1	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	0	0	0	2	53
Future Volume (vph)	2	0	0	0	2	53
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					0.998
Satd. Flow (prot)	1956	0	0	0	0	2055
Flt Permitted	0.950					0.998
Satd. Flow (perm)	1956	0	0	0	0	2055
Link Speed (mph)	25		25			25
Link Distance (ft)	211		161			396
Travel Time (s)	5.8		4.4			10.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	0	0	0	2	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	0	0	0	60
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		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	2	0	0	0	2	53
Future Vol, veh/h	2	0	0	0	2	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	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	0	2	58

Major/Minor	Minor1		Major2	
Conflicting Flow All	62	-	0	0
Stage 1	0	-	-	-
Stage 2	62	-	-	-
Critical Hdwy	6.42	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	-	2.218	-
Pot Cap-1 Maneuver	944	0	-	-
Stage 1	-	0	-	-
Stage 2	961	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	944	-	-	-
Mov Cap-2 Maneuver	944	-	-	-
Stage 1	-	-	-	-
Stage 2	961	-	-	-

Approach	WB	SB
HCM Control Delay, s	8.8	
HCM LOS	A	

Minor Lane/Major Mvmt	WBLn1	SBL	SBT
Capacity (veh/h)	944	-	-
HCM Lane V/C Ratio	0.002	-	-
HCM Control Delay (s)	8.8	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	167	0	2	168	0	2
Future Volume (vph)	167	0	2	168	0	2
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.999		
Satd. Flow (prot)	2079	0	0	2098	1817	0
Flt Permitted				0.999		
Satd. Flow (perm)	2079	0	0	2098	1817	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	306			92	158	
Travel Time (s)	8.3			2.1	3.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%
Adj. Flow (vph)	186	0	2	187	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	0	0	189	2	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	0	2	168	0	2
Future Vol, veh/h	167	0	2	168	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	0	0	0	0	0
Mvmt Flow	186	0	2	187	0	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	186	0	377	186
Stage 1	-	-	-	-	186	-
Stage 2	-	-	-	-	191	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1401	-	629	861
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1401	-	628	861
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	861	-	-	1401	-
HCM Lane V/C Ratio	0.003	-	-	0.002	-
HCM Control Delay (s)	9.2	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	613	0	0	803	0	4
Future Volume (vph)	613	0	0	803	0	4
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3990	0	0	3990	0	1817
Flt Permitted						
Satd. Flow (perm)	3990	0	0	3990	0	1817
Link Speed (mph)	25			25	30	
Link Distance (ft)	479			203	148	
Travel Time (s)	13.1			5.5	3.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	639	0	0	836	0	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	639	0	0	836	0	4
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	613	0	0	803	0	4
Future Vol, veh/h	613	0	0	803	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	639	0	0	836	0	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	320
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	-	0	-	0	682
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	682
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

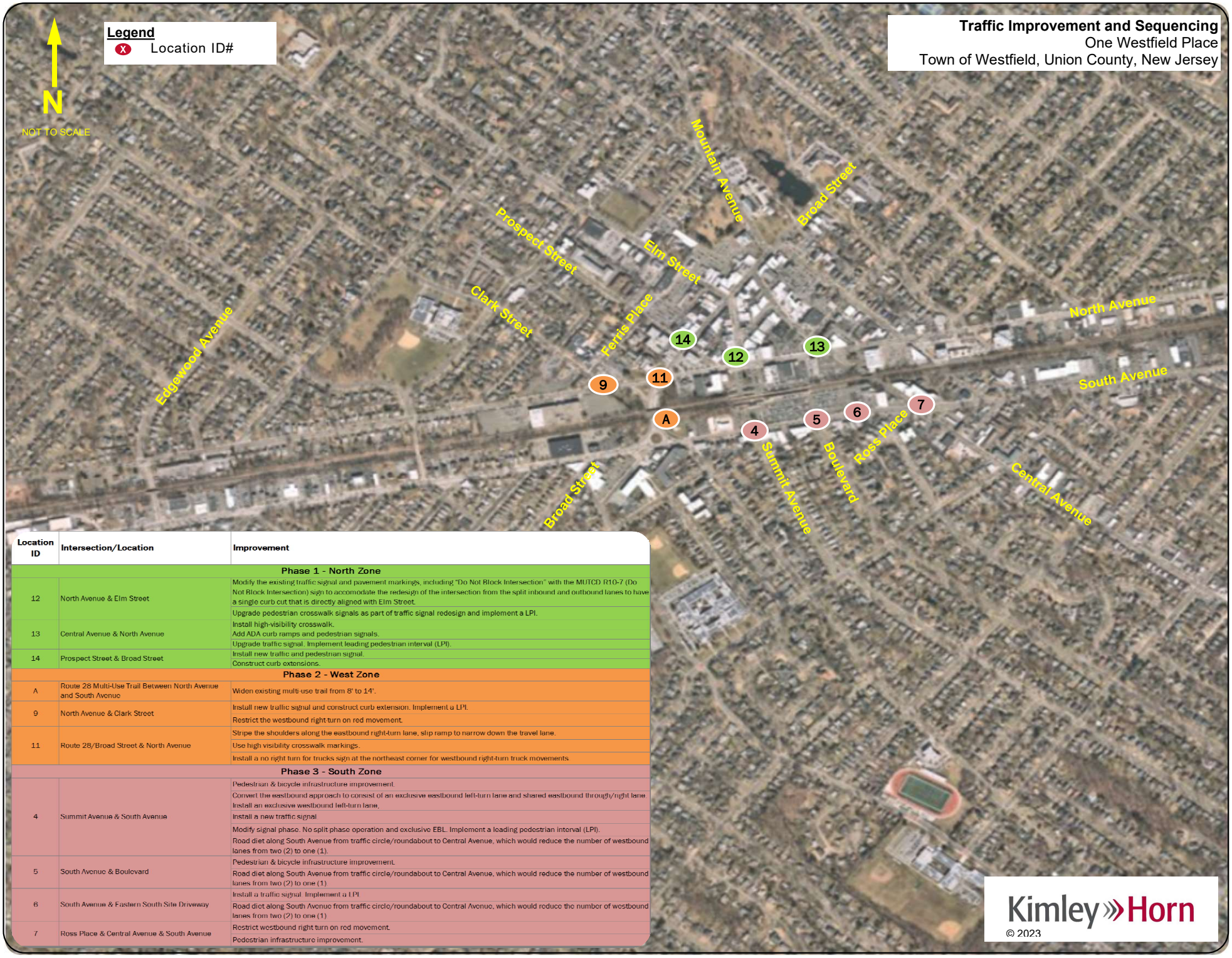
Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	682	-	-	-
HCM Lane V/C Ratio	0.006	-	-	-
HCM Control Delay (s)	10.3	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

APPENDIX G

Intersection/Location Improvement Concepts

Traffic Improvement and Sequencing
One Westfield Place
Town of Westfield, Union County, New Jersey



Location ID	Intersection/Location	Improvement
		Phase 1 - North Zone
12	North Avenue & Elm Street	Modify the existing traffic signal and pavement markings, including "Do Not Block Intersection" with the MUTCD R10-7 (Do Not Block Intersection) sign to accomodate the redesign of the intersection from the split inbound and outbound lanes to have a single curb cut that is directly aligned with Elm Street.
		Upgrade pedestrian crosswalk signals as part of traffic signal redesign and implement a LPI.
13	Central Avenue & North Avenue	Install high-visibility crosswalk.
		Add ADA curb ramps and pedestrian signals.
		Upgrade traffic signal. Implement leading pedestrian interval (LPI).
14	Prospect Street & Broad Street	Install new traffic and pedestrian signal.
		Construct curb extensions.
		Phase 2 - West Zone
A	Route 28 Multi-Use Trail Between North Avenue and South Avenue	Widen existing multi-use trail from 8' to 14'.
9	North Avenue & Clark Street	Install new traffic signal and construct curb extension. Implement a LPI.
		Restrict the westbound right-turn on red movement.
11	Route 28/Broad Street & North Avenue	Stripe the shoulders along the eastbound right-turn lane, slip ramp to narrow down the travel lane.
		Use high visibility crosswalk markings.
		Install a no right turn for trucks sign at the northeast corner for westbound right-turn truck movements.
		Phase 3 - South Zone
4	Summit Avenue & South Avenue	Pedestrian & bicycle infrastructure improvement.
		Convert the eastbound approach to consist of an exclusive eastbound left-turn lane and shared eastbound through/right lane. Install an exclusive westbound left-turn lane.
		Install a new traffic signal
		Modify signal phase. No split phase operation and exclusive EBL. Implement a loading pedestrian interval (LPI).
		Road diet along South Avenue from traffic circle/roundabout to Central Avenue, which would reduce the number of westbound lanes from two (2) to one (1).
5	South Avenue & Boulevard	Pedestrian & bicycle infrastructure improvement.
		Road diet along South Avenue from traffic circle/roundabout to Central Avenue, which would reduce the number of westbound lanes from two (2) to one (1)
6	South Avenue & Eastern South Site Driveway	Install a traffic signal. Implement a LPI.
		Road diet along South Avenue from traffic circle/roundabout to Central Avenue, which would reduce the number of westbound lanes from two (2) to one (1)
7	Ross Place & Central Avenue & South Avenue	Restrict westbound right turn on red movement.
		Pedestrian infrastructure improvement.

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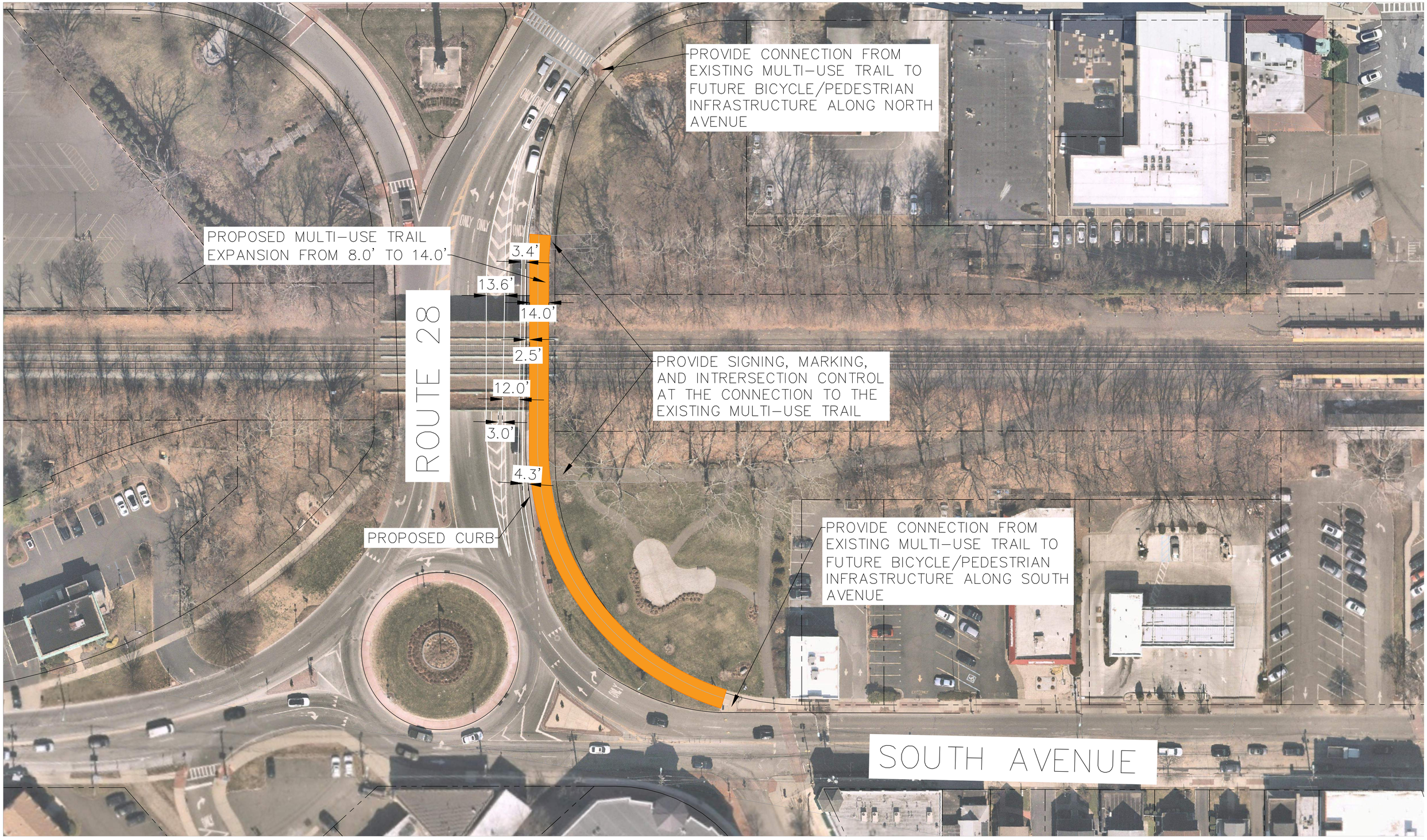

PROPOSED EXPANDED MULTI-USE TRAIL ALONG ROUTE 28

ONE WESTFIELD PLACE

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

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2/2/2023

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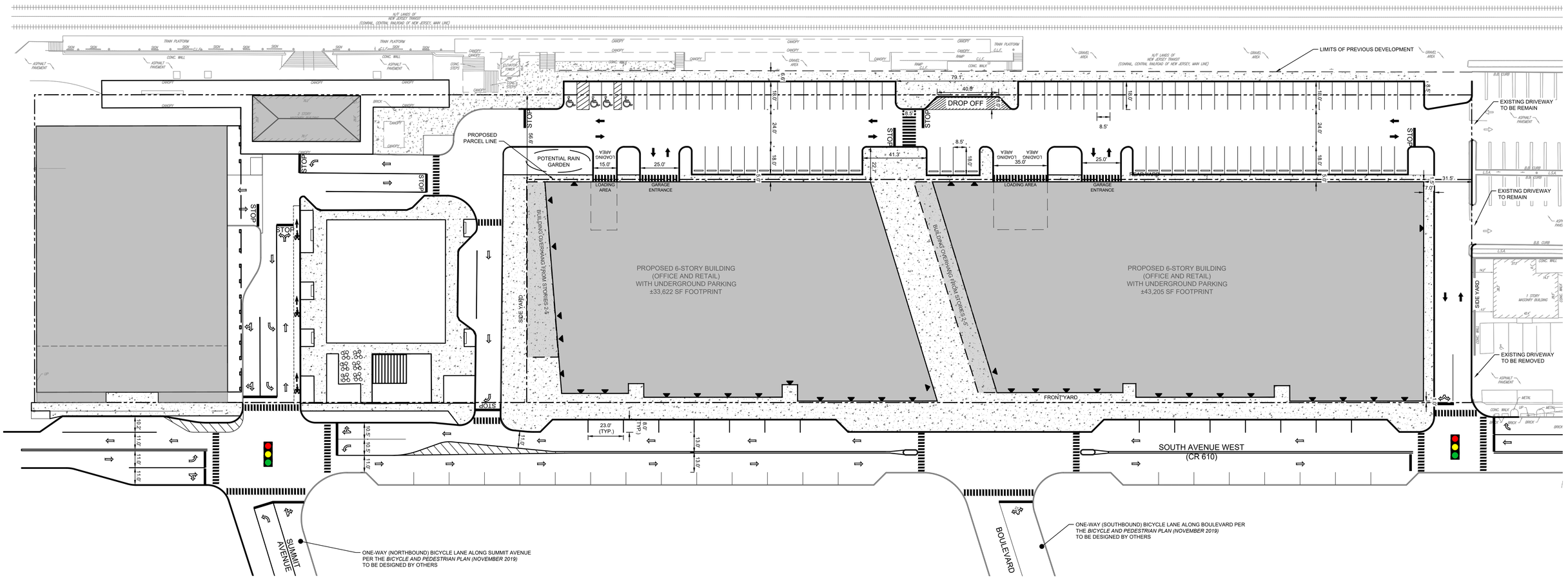

LEGEND

- PROPOSED BUILDING
- PROPOSED STANDARD PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPERTY LINE

REFERENCES

1. PLAT ENTITLED "BOUNDARY AND TOPOGRAPHIC SURVEY , BLOCK 3101, LOT 5, TOWN OF WESTFIELD, UNION COUNTY, NJ" PREPARED BY CONTROL POINT, AND DATED 04/27/2022.
2. DEVELOPMENT ARCHITECTURAL PACKAGE ENTITLED STREETWORK WESTFILED C+S PREPARED BY MGA AND DATED 5/17/2022.
3. PROPOSED PROPERTY LINES ARE APPROXIMATE AND BASED UPON DRAWING TITLED "20221219_Lot05_BoundaryLines" PROVIDED BY BEYER BLINDER BELLE DATED 12/19/2022.

NOTES

1. APPROXIMATE BIKE LANES ARE CONCEPTUAL AND HAVE NOT BEEN FULLY DESIGNED.

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LOT 5 - SOUTH AVENUE IMPROVEMENTS

ONE WESTFIELD PLACE

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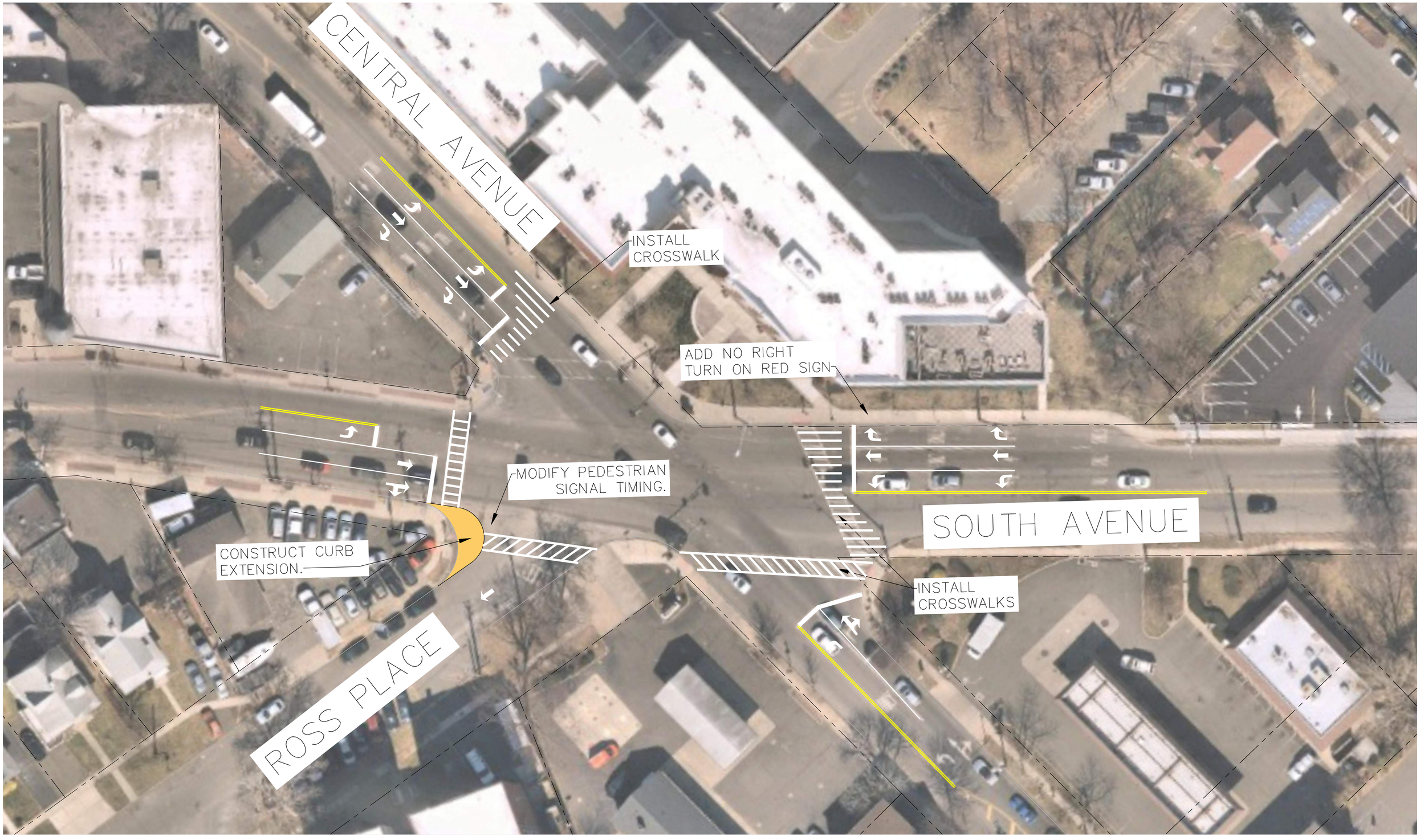

PROPOSED ROSS PLACE AND CENTRAL AVENUE AND SOUTH AVENUE

2/2/2023

ONE WESTFIELD PLACE

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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PROPOSED CLARK STREET AND NORTH AVENUE

ONE WESTFIELD PLACE

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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NORTH AVENUE

E BROAD STREET

INSTALL A NO RIGHT TURN FOR TRUCKS SIGN

ADDITIONAL TRAFFIC CALMING MEASURES TO BE EVALUATED

ROUTE 28

PROPOSED ROUTE 28/E BROAD STREET AND NORTH AVENUE

2/2/2023

ONE WESTFIELD PLACE

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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PROSPECT STREET

ELM STREET

NORTH AVENUE

CONVERT TO A TYPICAL FOUR-LEG INTERSECTION AND UPGRADE TRAFFIC SIGNAL

20.0'

11.0'

11.0'

16.0'

PROPOSED CAFE/PLAZA

10.5'

10.7'

PROPOSED LAWN

11.0'

PROPOSED CAFE/PLAZA

THROUGH LANE

DROP OFF LANE

10.8'

11.0'

10.5'

10.8'

OFF DROP

OFF DROP

9.0' TYP.

6.0'

20.0' TYP.

11.0'

WESTFIELD TRAIN STATION

15.6'

STANDARD TYP. PARKING STALL

ADA VAN ACCESSIBLE PARKING STALL

*THE MEDIAN WIDTH AND EXIT ALIGNMENTS ARE SUBJECT TO REVIEW

PROPOSED NORTH AVENUE AND ELM STREET PARKING LOT CHANGES

2/2/2023

ONE WESTFIELD PLACE

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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STREET WORKS DEVELOPMENT

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PROPOSED CENTRAL AVENUE AND NORTH AVENUE

2/2/2023

ONE WESTFIELD PLACE

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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PROPOSED PROSPECT STREET AND E BROAD STREET

ONE WESTFIELD PLACE

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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2/2/2023

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APPENDIX H

Westfield Roundabout Memo

MEMORANDUM

To: Justin Poulos, Street-Works Development

From: Adam Gibson, PE

Kimley-Horn

Date: August 19th, 2021

Subject: Westfield Roundabout Analysis

The purpose of this memo is to document the analysis of the existing roundabout in Westfield, NJ at the intersection of South Avenue & NJ Route 28. The existing roundabout is currently experiencing operational issues and delay which will only be exacerbated with additional traffic generated from nearby development. Kimley-Horn was asked to analyze the roundabout and look for opportunities to improve operations at the intersection through modifying the geometry and/or lane assignments of the existing roundabout.

EXISTING CONDITIONS

The existing roundabout consists of three legs with multilane approaches and only a single circulating lane (see **Exhibit 1**)**.** The roundabout was re-striped within the past 5 years which modified lane assignments on the east leg and confusing lane usage in the circulating lane of the roundabout. While the roundabout is striped for a single circulating lane, it does have space available for multiple circulating lanes on each leg of the roundabout. There is an existing signal approximately 370 feet to the north of the roundabout and a railroad bridge whose piers fall within the existing roadway, dividing northbound lanes.

Two items noteworthy of the existing conditions are that the westbound approach traffic is split between thru and right turn movements and the eastbound to northbound movement is the highest movement of the intersection in the PM peak hour. The existing lane configuration does not balance these volumes on the approaches.

ANALYSIS METHODOLOGY

The 2030 future build traffic volumes used for the analysis were provided by WSP. Kimley-Horn analyzed the roundabout for multiple lane configurations based on the peak hour turning movement counts provided. SIDRA roundabout analysis software was used for the roundabout analysis to measure specific lane usage that is influenced by the signal 370 feet to the north of the roundabout.

Since the signal is close to the roundabout, it influences lane usage of the roundabout and can potentially have queues spill back into the roundabout impacting operations. Therefore, the signal was analyzed for operations and intersection turning movements at the signalized intersection were used to develop volume distributions for vehicles on the roundabout approaches.

The analysis looked to use the capacity within the existing roundabout by using multiple circulating lanes and also looked to balance lane usage on the approaches to determine if a solution exists to improve operations. The northbound roundabout exit poses an issue as it contains three lanes exiting the roundabout. There is little to no

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time nor space for traffic to change lanes due to the railroad bridge piers and the close proximity of the downstream signalized intersection.

ROUNDABOUT ANALYSIS

The roundabout was analyzed for the following scenarios:

No-Build – this alternative analyzed the current configuration but with future volumes (see **Exhibit 1**). The results indicate LOS C in the AM peak hour and LOS F in the PM peak hour (see **Table 1** for results). As mentioned in the above, the lane assignments lead to unbalanced lane use. The westbound approach right-turn only lane serves roughly 1/8th of the traffic volumes. The outside eastbound approach lane serves 1/8th of the traffic, much like the westbound approach. When traffic volumes return to "normal", it is recommended to observe the operating conditions to verify the actual conditions versus the theoretical conditions.

Alternative 1 – This alternative maintained the same EB to NB configuration as in Alternative 1 but modified the westbound approach to a single right-turn lane and a thru/U-turn lane. This was done because the thru and right-turn volumes are almost evenly split in the PM peak hour. This alternative also looked at eliminating one of the exit lanes by shortening the right-turn lane at the downstream signalized intersection (see **Exhibit 2**). The results of this configuration are LOS B in the AM peak hour and LOS C in the PM peak hour (see **Table 2** for results).

Alternative 2 – This alternative evaluated adding an additional circulating lane on the eastbound approach to the northbound exit, which is the highest volume movement of the intersection. The westbound approach kept the existing lane configuration of an exclusive right and a combined thru/right/U-turn. This alternative also looked at eliminating one of the exit lanes by shortening the right turn lane at the downstream signalized intersection (see **Exhibit 3**). The results of this configuration are LOS B in the AM peak hour and LOS C in the PM peak hour (see **Table 3** for results). This alternative had the same LOS as Alternative 1 but performed slightly better with two seconds less average delay.

Alternative 3 – This alternative maintained the same EB to NB configuration as in Alternatives 1 and 2, maintains the existing three exit lanes for northbound Route 28, and adds a thru/right to the northbound signalized intersection approach. The westbound approach maintains the same geometry and lane assignments as existing conditions as well (**See Exhibit 4**). The results of this configuration are LOS B in the AM peak hour and LOS C in the PM peak hour (see **Table 4** for results).

Table 1 – No-Build Future (2030) Conditions Intersection Operations Analysis Results

Intersection Control	Peak Hour	Approach	APPROACH		Overall	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Roundabout	AM	EB	40.8	E	22.2	C
		WB	9.8	A		
		SB	12.7	B		
	PM	EB	141.2	F	61.6	F
		WB	14.2	B		
		SB	21.4	C		

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Table 2 – Alternative 1: Future (2030) Conditions Intersection Operations Analysis Results

Intersection Control	Peak Hour	Approach	APPROACH		Overall	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Roundabout	AM	EB	15.3	C	12.8	B
		WB	9.3	A		
		SB	12.6	B		
	PM	EB	20.8	C	22.3	C
		WB	25.5	D		
		SB	21.5	C		

Table 3 – Alternative 2: Future (2030) Conditions Intersection Operations Analysis Results

Intersection Control	Peak Hour	Approach	APPROACH		Overall	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Roundabout	AM	EB	15.3	C	12.5	B
		WB	8.1	A		
		SB	12.5	B		
	PM	EB	20.6	C	20.1	C
		WB	18.3	C		
		SB	20.8	C		

Table 4 – Alternative 3: Future (2030) Conditions Intersection Operations Analysis Results

Intersection Control	Peak Hour	Approach	APPROACH		Overall	
			Average Delay (sec)	LOS	Delay (sec/veh)	LOS
Roundabout	AM	EB	17.6	C	13.6	B
		WB	9.3	A		
		SB	12.6	B		
	PM	EB	18.8	C	21.2	C
		WB	24.2	C		
		SB	21.2	C		

The supporting information for the roundabout analysis is provided in **Appendix A**.

SIGNAL ANALYSIS

The signal at N Avenue W / Route 28 was analyzed to determine if the queues on the northbound approach spilled back into the roundabout. Both the 50th percentile (average queue) and the 95th percentile queue in the peak hour were analyzed for the intersection. The results in **Table 5** show that the average queue length in the PM peak hour was 288 feet and the 95th percentile queue was over 500 feet long. These results show that queues will likely extend

back into the roundabout only during the peak times of the peak hour but on average will be short enough to avoid interfering with roundabout operations.

We examined a scenario that adjusted the signalized intersection approach geometry on the south leg to add an extra thru movement in order to minimize the 95th percentile queue length. The proposed geometry would keep the left and thru lanes as they are today but would change the right turn lane into a thru/right movement. **Table 5** shows the results which reduces the 95th percentile queue to 250 feet, thus avoiding the roundabout.

While this scenario reduces the queue length, it does have a fatal flaw that should eliminate it from consideration. The receiving lane on the north side of the intersection would have to be striped for two lanes and would require a lane drop in approximately 200 feet. The lane drop area also contains a left-turn lane which would add to vehicle conflicts and potentially confusing drivers. We feel the better balance between safety and operations would be to allow the queue to spill back into the roundabout at the peak operations during the peak hour.

Table 5 – Route 28/Broad Ave & North Ave Intersection NB Build Alternatives

Intersection Control	Peak Hour	Approach	Storage Length (ft)	50% Queue (ft)	95% Queue (ft)	Exceeds Capacity?
Existing NB Lane Configuration	AM	NBL	370	57	134	No
		NBT	370	132	211	No
		NBR	150	53	97	No
	PM	NBL	370	67	171	No
		NBT	370	288	499	Yes
		NBR	150	68	121	No
Alternate NB Lane Configuration	AM	NBL	370	57	134	No
		NBT/NBR	370	95	136	No
	PM	NBL	370	67	171	No
		NBT/NBR	370	173	135	No

The supporting information for the signal analysis is provided in **Appendix B**.

RECOMMENDATION

Kimley-Horn recommends **Alternative 2** (see **Exhibit 3**) for the following reasons:

- Balances lane usage and provides the best possible level of service with minimal changes to lane configurations.
- Contains the fewest conflict points than any of the proposed alternatives, thus is the potentially safest of the proposed alternatives.
- Eliminates the three-lane exit on the north side of the roundabout while maintaining the same approach geometry at the signal.
- Traffic is anticipated to spill back into the roundabout from the signal at North Avenue W & Route 28 during the peak of the PM peak hour. The roundabout is anticipated to operate freely for the remainder of the day, assuming the non-peak hours have fewer trips than the current data set.

EXHIBITS

Exhibit 1: Existing Conditions

Exhibit 2: Alternative 1

Exhibit 3: Alternative 2

Exhibit 4: Alternative 3

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NJ 28 ROUNDABOUT - WESTFIELD, NEW JERSEY
EXHIBIT 1 - EXISTING CONDITIONS



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NJ 28 ROUNDABOUT - WESTFIELD, NEW JERSEY
EXHIBIT 2 - ALTERNATIVE 1

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EXHIBIT 3 - ALTERNATIVE 2

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NJ 28 ROUNDABOUT - WESTFIELD, NEW JERSEY
EXHIBIT 4 - ALTERNATIVE 3

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APPENDIX

Appendix A: Roundabout Analysis Sidra Output

Appendix B: Signal Analysis Synchro Output

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Appendix A: Roundabout Analysis Sidra Output

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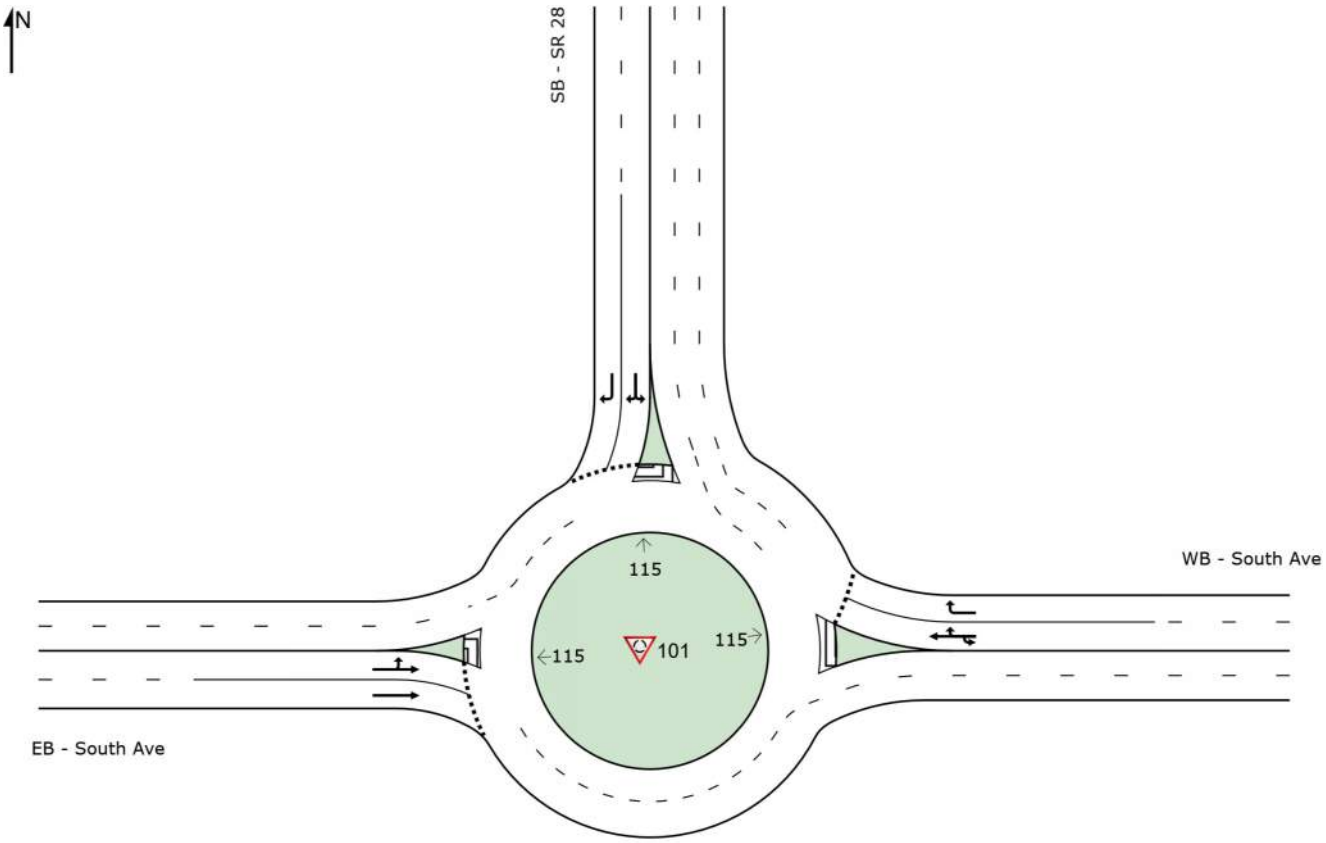
SITE LAYOUT

Site: 101 [Westfield RAB_Existing_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 101 [Westfield RAB_Existing_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: WB - South Ave													
Lane 1[d]	458	4.5	877	0.522	100	11.1	LOS B	3.8	97.9	Full	625	0.0	0.0
Lane 2	178	5.0	873	0.204	39[5]	6.2	LOS A	0.8	21.2	Full	625	0.0	0.0
Approach	636	4.7		0.522		9.8	LOS A	3.8	97.9				
North: SB - SR 28													
Lane 1[d]	673	5.0	980	0.686	100	14.7	LOS B	8.7	226.7	Full	375	0.0	0.0
Lane 2	499	5.0	980	0.509	74[5]	10.0	LOS A	3.4	89.5	Full	375	0.0	0.0
Approach	1172	5.0		0.686		12.7	LOS B	8.7	226.7				
West: EB - South Ave													
Lane 1[d]	815	5.0	830	0.982	100	49.1	LOS E	29.9	777.3	Full	375	0.0	34.6
Lane 2	199	5.0	830	0.239	24[5]	6.9	LOS A	0.9	23.9	Full	375	0.0	0.0
Approach	1014	5.0		0.982		40.8	LOS E	29.9	777.3				
Intersection	2822	4.9		0.982		22.2	LOS C	29.9	777.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

LANE SUMMARY

Site: 101 [Westfield RAB_Existing_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: WB - South Ave													
Lane 1[d]	488	4.8	760	0.642	100	16.0	LOS C	5.6	145.6	Full	625	0.0	0.0
Lane 2	376	5.0	759	0.495	77[5]	11.8	LOS B	3.1	79.6	Full	625	0.0	0.0
Approach	864	4.9		0.642		14.2	LOS B	5.6	145.6				
North: SB - SR 28													
Lane 1	542	5.0	872	0.622	73[5]	13.8	LOS B	5.7	148.9	Full	375	0.0	0.0
Lane 2[d]	742	5.0	872	0.851	100	26.9	LOS D	16.5	427.8	Full	375	0.0	9.0
Approach	1284	5.0		0.851		21.4	LOS C	16.5	427.8				
West: EB - South Ave													
Lane 1[d]	1059	5.0	825	1.284	100	154.5	LOS F	94.9	2468.1	Full	375	0.0	100.0
Lane 2	103	5.0	825	0.125	10[5]	5.6	LOS A	0.4	11.6	Full	375	0.0	0.0
Approach	1162	5.0		1.284		141.2	LOS F	94.9	2468.1				
Intersection	3310	5.0		1.284		61.6	LOS F	94.9	2468.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

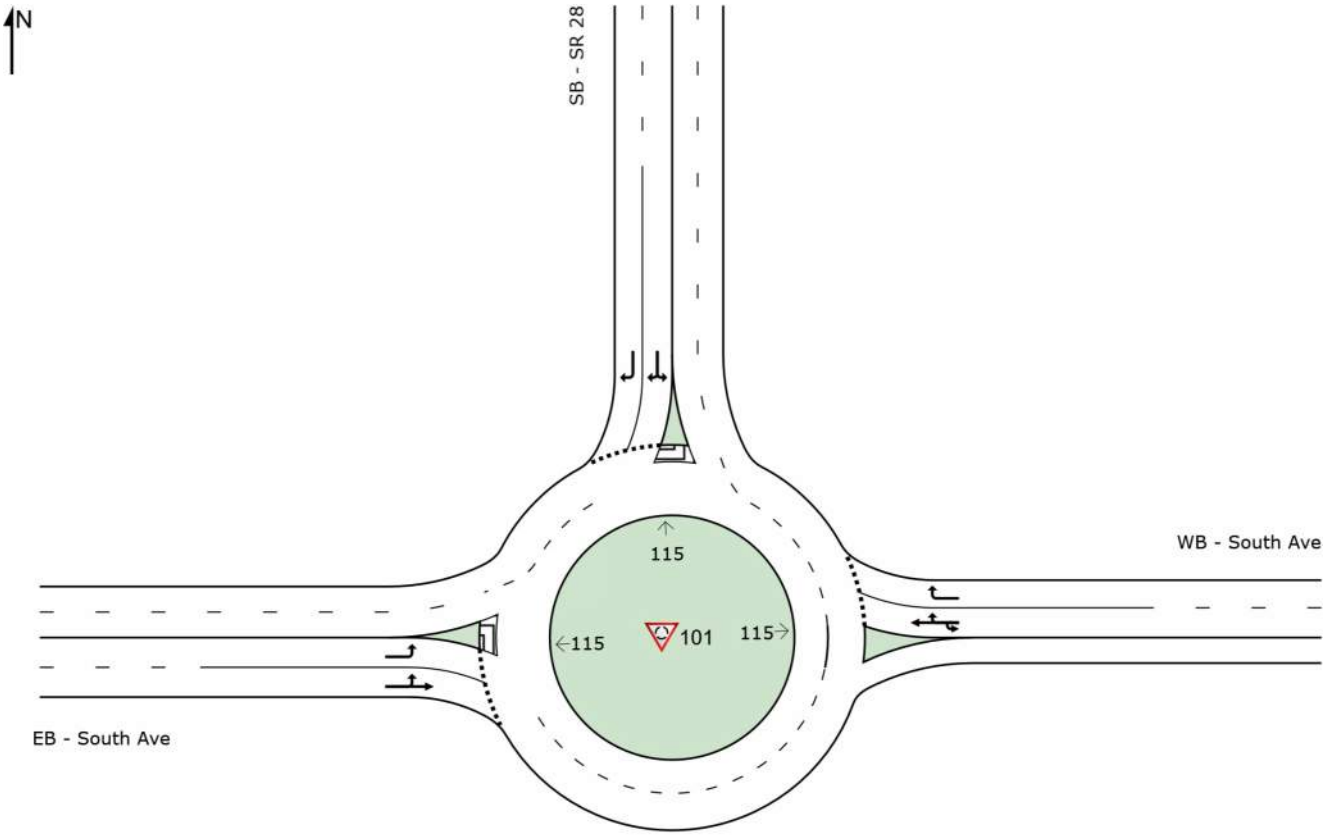
5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

SITE LAYOUT

Site: 101 [Westfield RAB_Proposed_01_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 101 [Westfield RAB_Proposed_01_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: WB - South Ave													
Lane 1[d]	468	4.5	927	0.505	100	10.3	LOS B	3.3	85.0	Full	625	0.0	0.0
Lane 2	168	5.0	850	0.197	39[5]	6.3	LOS A	0.7	18.7	Full	625	0.0	0.0
Approach	636	4.7		0.505		9.3	LOS A	3.3	85.0				
North: SB - SR 28													
Lane 1[d]	673	5.0	984	0.683	100	14.6	LOS B	8.6	222.5	Full	375	0.0	0.0
Lane 2	499	5.0	984	0.507	74[5]	9.9	LOS A	3.4	87.7	Full	375	0.0	0.0
Approach	1172	5.0		0.683		12.6	LOS B	8.6	222.5				
West: EB - South Ave													
Lane 1	415	5.0	832	0.499	69[5]	11.1	LOS B	3.2	82.4	Full	375	0.0	0.0
Lane 2[d]	599	5.0	832	0.721	100	18.3	LOS C	8.2	213.9	Full	375	0.0	0.0
Approach	1014	5.0		0.721		15.3	LOS C	8.2	213.9				
Intersection	2822	4.9		0.721		12.8	LOS B	8.6	222.5				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

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LANE SUMMARY

Site: 101 [Westfield RAB_Proposed_01_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: WB - South Ave													
Lane 1[d]	597	4.9	701	0.852	100	31.6	LOS D	11.6	300.1	Full	625	0.0	0.0
Lane 2	267	5.0	630	0.423	50[5]	12.0	LOS B	2.1	53.5	Full	625	0.0	0.0
Approach	864	4.9		0.852		25.5	LOS D	11.6	300.1				
North: SB - SR 28													
Lane 1[d]	728	5.0	860	0.847	100	26.7	LOS D	16.0	417.1	Full	375	0.0	8.2
Lane 2	556	5.0	860	0.647	76[5]	14.8	LOS B	6.4	166.7	Full	375	0.0	0.0
Approach	1284	5.0		0.847		21.5	LOS C	16.0	417.1				
West: EB - South Ave													
Lane 1[d]	657	5.0	803	0.817	100	25.2	LOS D	12.6	326.6	Full	375	0.0	1.1
Lane 2	505	5.0	803	0.629	77[5]	14.9	LOS B	5.6	145.0	Full	375	0.0	0.0
Approach	1162	5.0		0.817		20.8	LOS C	12.6	326.6				
Intersection	3310	5.0		0.852		22.3	LOS C	16.0	417.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

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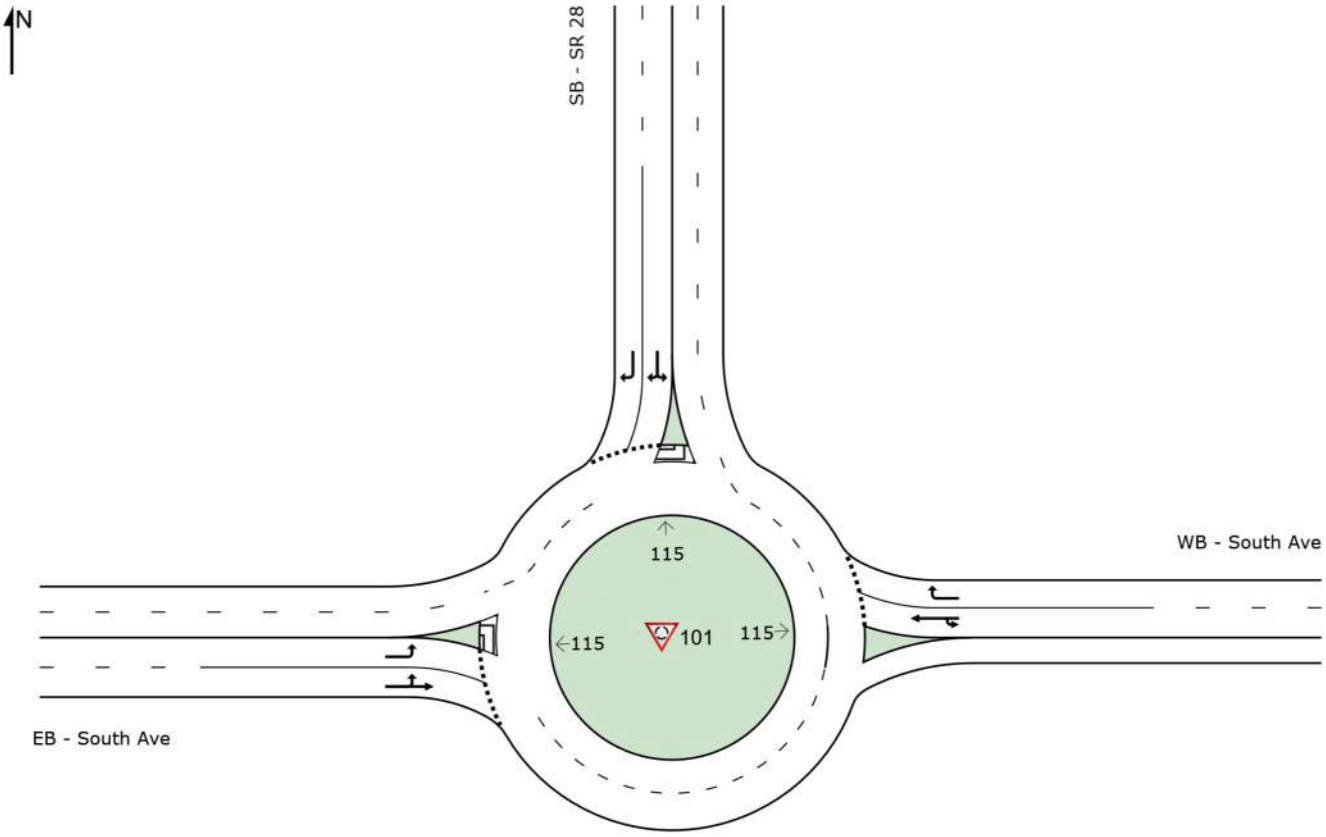
SITE LAYOUT

Site: 101 [Westfield RAB_Proposed_02_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 101 [Westfield RAB_Proposed_02_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: WB - South Ave													
Lane 1[d]	368	4.4	928	0.396	100	8.4	LOS A	1.8	46.2	Full	625	0.0	0.0
Lane 2	268	5.0	850	0.315	100	7.8	LOS A	1.3	32.6	Full	625	0.0	0.0
Approach	636	4.7		0.396		8.1	LOS A	1.8	46.2				
North: SB - SR 28													
Lane 1[d]	673	5.0	988	0.681	100	14.4	LOS B	8.4	218.9	Full	375	0.0	0.0
Lane 2	499	5.0	988	0.505	74[5]	9.8	LOS A	3.3	86.1	Full	375	0.0	0.0
Approach	1172	5.0		0.681		12.5	LOS B	8.4	218.9				
West: EB - South Ave													
Lane 1	415	5.0	833	0.498	69[5]	11.1	LOS B	3.2	82.1	Full	375	0.0	0.0
Lane 2[d]	599	5.0	833	0.720	100	18.2	LOS C	8.2	213.0	Full	375	0.0	0.0
Approach	1014	5.0		0.720		15.3	LOS C	8.2	213.0				
Intersection	2822	4.9		0.720		12.5	LOS B	8.4	218.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

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LANE SUMMARY

Site: 101 [Westfield RAB_Proposed_02_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: WB - South Ave													
Lane 1[d]	488	4.8	701	0.696	100	19.5	LOS C	6.0	154.7	Full	625	0.0	0.0
Lane 2	376	5.0	631	0.596	100	16.8	LOS C	4.0	103.8	Full	625	0.0	0.0
Approach	864	4.9		0.696		18.3	LOS C	6.0	154.7				
North: SB - SR 28													
Lane 1[d]	728	5.0	868	0.838	100	25.7	LOS D	15.4	399.8	Full	375	0.0	6.9
Lane 2	556	5.0	868	0.640	76[5]	14.4	LOS B	6.2	161.2	Full	375	0.0	0.0
Approach	1284	5.0		0.838		20.8	LOS C	15.4	399.8				
West: EB - South Ave													
Lane 1[d]	657	5.0	805	0.815	100	25.1	LOS D	12.5	324.0	Full	375	0.0	0.8
Lane 2	505	5.0	805	0.628	77[5]	14.9	LOS B	5.5	144.1	Full	375	0.0	0.0
Approach	1162	5.0		0.815		20.6	LOS C	12.5	324.0				
Intersection	3310	5.0		0.838		20.1	LOS C	15.4	399.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

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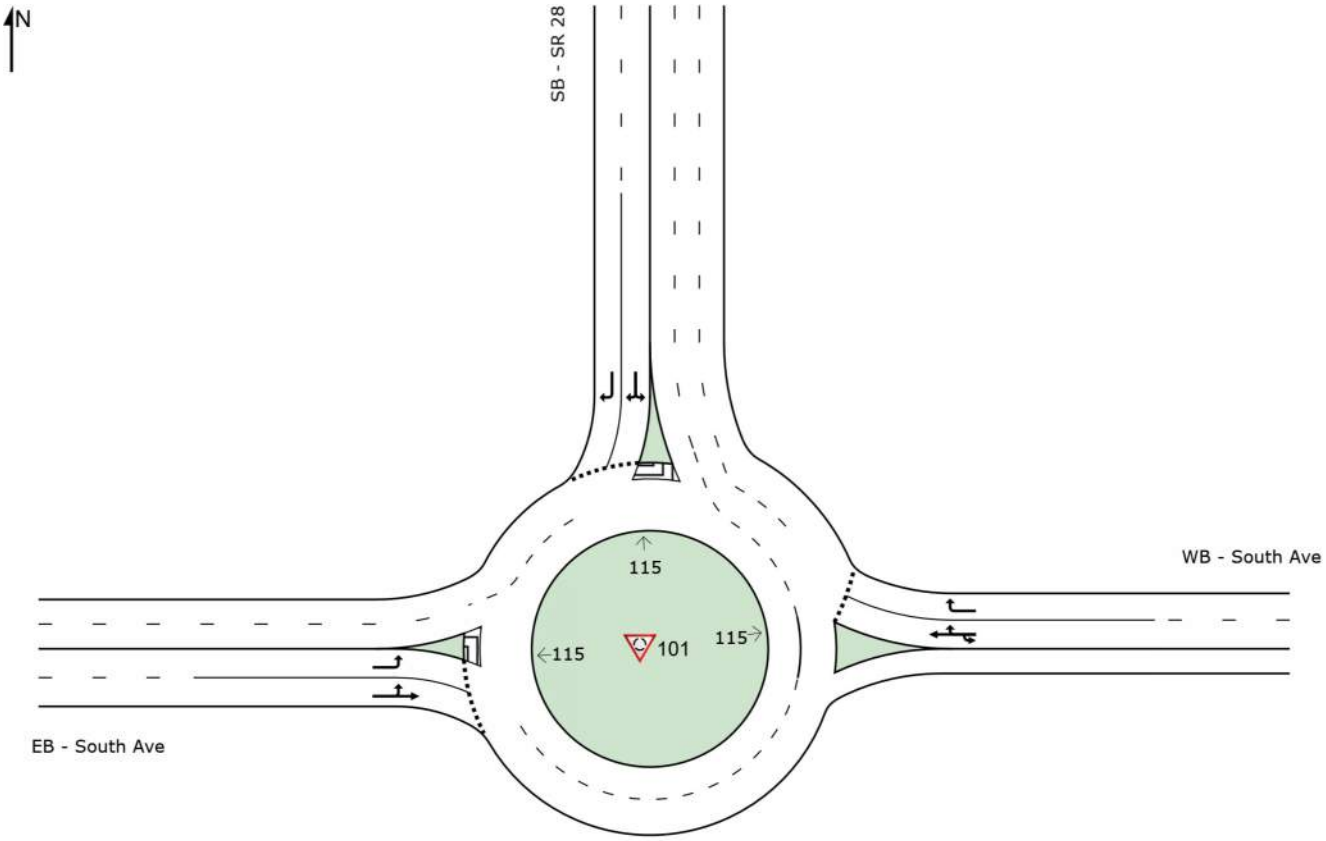
SITE LAYOUT

Site: 101 [Westfield RAB_Proposed_03_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 101 [Westfield RAB_Proposed_03_AM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: WB - South Ave													
Lane 1[d]	468	4.5	927	0.505	100	10.3	LOS B	3.3	85.1	Full	625	0.0	0.0
Lane 2	168	5.0	850	0.197	39[5]	6.3	LOS A	0.7	18.7	Full	625	0.0	0.0
Approach	636	4.7		0.505		9.3	LOS A	3.3	85.1				
North: SB - SR 28													
Lane 1[d]	673	5.0	984	0.683	100	14.6	LOS B	8.6	222.6	Full	375	0.0	0.0
Lane 2	499	5.0	984	0.507	74[5]	9.9	LOS A	3.4	87.7	Full	375	0.0	0.0
Approach	1172	5.0		0.683		12.6	LOS B	8.6	222.6				
West: EB - South Ave													
Lane 1	363	5.0	832	0.437	56[5]	9.8	LOS A	2.4	61.3	Full	375	0.0	0.0
Lane 2[d]	651	5.0	832	0.783	100	22.0	LOS C	10.9	282.1	Full	375	0.0	0.0
Approach	1014	5.0		0.783		17.6	LOS C	10.9	282.1				
Intersection	2822	4.9		0.783		13.6	LOS B	10.9	282.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

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LANE SUMMARY

Site: 101 [Westfield RAB_Proposed_03_PM (Site Folder: General)]

New Site
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: WB - South Ave													
Lane 1[d]	597	4.9	711	0.839	100	29.9	LOS D	11.0	284.6	Full	625	0.0	0.0
Lane 2	267	5.0	641	0.417	50[5]	11.7	LOS B	2.0	52.0	Full	625	0.0	0.0
Approach	864	4.9		0.839		24.2	LOS C	11.0	284.6				
North: SB - SR 28													
Lane 1[d]	728	5.0	864	0.843	100	26.3	LOS D	15.8	411.7	Full	375	0.0	7.8
Lane 2	556	5.0	864	0.644	76[5]	14.6	LOS B	6.4	165.4	Full	375	0.0	0.0
Approach	1284	5.0		0.843		21.2	LOS C	15.8	411.7				
West: EB - South Ave													
Lane 1	561	5.0	807	0.695	93[5]	17.5	LOS C	7.4	192.2	Full	375	0.0	0.0
Lane 2[d]	601	5.0	807	0.744	100	20.0	LOS C	9.1	236.8	Full	375	0.0	0.0
Approach	1162	5.0		0.744		18.8	LOS C	9.1	236.8				
Intersection	3310	5.0		0.843		21.2	LOS C	15.8	411.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

5 Lane under-utilisation found by the program
d Dominant lane on roundabout approach

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Appendix B: Signal Analysis Synchro Output

DRAFT

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	217	861	777	209	402	180	743
v/c Ratio	0.62	0.95	2.74dl	0.76	0.54	0.28	0.83
Control Delay	19.6	40.1	63.2	35.3	20.6	17.0	32.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	40.1	63.2	35.3	20.6	17.0	32.9
Queue Length 50th (ft)	49	322	~199	57	132	53	149
Queue Length 95th (ft)	#94	#573	#311	#134	211	97	#233
Internal Link Dist (ft)		329	324		418		350
Turn Bay Length (ft)	185						
Base Capacity (vph)	348	904	768	274	764	650	920
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.95	1.01	0.76	0.53	0.28	0.81

Intersection Summary

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	445	347	297	408	10	192	370	166	32	523	129
Future Volume (veh/h)	200	445	347	297	408	10	192	370	166	32	523	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067
Adj Flow Rate, veh/h	217	484	0	323	443	11	209	402	180	35	568	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	955		374	636	16	278	728	617	80	685	166
Arrive On Green	0.07	0.46	0.00	0.35	0.35	0.35	0.07	0.35	0.35	0.24	0.24	0.24
Sat Flow, veh/h	1969	2067	0	780	1828	45	1969	2067	1752	100	2879	697
Grp Volume(v), veh/h	217	484	0	323	0	454	209	402	180	390	0	353
Grp Sat Flow(s),veh/h/ln	1969	2067	0	780	0	1873	1969	2067	1752	1920	0	1756
Q Serve(g_s), s	4.8	11.5	0.0	20.8	0.0	14.6	5.0	10.9	5.2	6.9	0.0	13.4
Cycle Q Clear(g_c), s	4.8	11.5	0.0	24.3	0.0	14.6	5.0	10.9	5.2	13.4	0.0	13.4
Prop In Lane	1.00		0.00	1.00		0.02	1.00		1.00	0.09		0.40
Lane Grp Cap(c), veh/h	374	955		374	0	651	278	728	617	513	0	418
V/C Ratio(X)	0.58	0.51		0.86	0.00	0.70	0.75	0.55	0.29	0.76	0.00	0.84
Avail Cap(c_a), veh/h	374	955		374	0	651	278	768	651	548	0	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	13.2	0.0	26.3	0.0	19.7	20.5	18.2	16.4	25.2	0.0	25.4
Incr Delay (d2), s/veh	2.3	1.9	0.0	22.3	0.0	6.1	11.0	0.8	0.3	5.8	0.0	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.7	8.9	0.0	12.3	0.0	11.5	5.8	8.8	3.7	11.0	0.0	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	15.1	0.0	48.6	0.0	25.7	31.5	19.0	16.6	31.0	0.0	38.4
LnGrp LOS	B	B		D	A	C	C	B	B	C	A	D
Approach Vol, veh/h		701	A		777			791			743	
Approach Delay, s/veh		15.7			35.2			21.8			34.6	
Approach LOS		B			D			C			C	

Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	8.0	31.3		30.7		39.3	8.0	22.7				
Change Period (Y+Rc), s	3.0	7.0		6.0		7.0	3.0	6.0				
Max Green Setting (Gmax), s	5.0	23.0		26.0		31.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	6.8	26.3		12.9		13.5	7.0	15.4				
Green Ext Time (p_c), s	0.0	0.0		2.7		2.8	0.0	1.2				

Intersection Summary			
HCM 6th Ctrl Delay		27.0	
HCM 6th LOS		C	

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	162	859	1093	241	714	225	756
v/c Ratio	0.59	0.95	2.53dl	0.88	0.93	0.35	1.30
Control Delay	19.3	37.5	258.3	50.9	43.5	17.8	174.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	37.5	258.3	50.9	43.5	17.8	174.1
Queue Length 50th (ft)	36	294	~371	67	288	68	~219
Queue Length 95th (ft)	#69	#546	#494	#171	#499	121	#326
Internal Link Dist (ft)		319	324		418		350
Turn Bay Length (ft)	185						
Base Capacity (vph)	275	907	725	273	764	650	580
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.95	1.51	0.88	0.93	0.35	1.30

Intersection Summary

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	316	475	275	720	10	222	657	207	45	511	140
Future Volume (veh/h)	149	316	475	275	720	10	222	657	207	45	511	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067
Adj Flow Rate, veh/h	162	343	0	299	783	11	241	714	225	49	555	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	915		347	760	11	281	768	651	66	494	180
Arrive On Green	0.07	0.44	0.00	0.33	0.33	0.33	0.07	0.37	0.37	0.26	0.26	0.26
Sat Flow, veh/h	1969	2067	0	801	2313	33	1969	2067	1752	32	1920	698
Grp Volume(v), veh/h	162	343	0	475	0	618	241	714	225	374	0	382
Grp Sat Flow(s),veh/h/ln	1969	2067	0	1272	0	1875	1969	2067	1752	894	0	1756
Q Serve(g_s), s	3.6	7.8	0.0	23.0	0.0	23.0	5.0	23.2	6.5	2.8	0.0	14.5
Cycle Q Clear(g_c), s	3.6	7.8	0.0	23.0	0.0	23.0	5.0	23.2	6.5	18.0	0.0	14.5
Prop In Lane	1.00		0.00	0.63		0.02	1.00		1.00	0.13		0.40
Lane Grp Cap(c), veh/h	243	915		502	0	616	281	768	651	288	0	451
V/C Ratio(X)	0.67	0.37		0.95	0.00	1.00	0.86	0.93	0.35	1.30	0.00	0.85
Avail Cap(c_a), veh/h	243	915		502	0	616	281	768	651	288	0	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	13.0	0.0	24.9	0.0	23.5	21.6	21.1	15.9	25.9	0.0	24.7
Incr Delay (d2), s/veh	6.7	1.2	0.0	28.8	0.0	37.1	22.3	17.7	0.3	157.3	0.0	13.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	6.2	0.0	17.5	0.0	22.5	7.9	20.4	4.5	27.6	0.0	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	14.2	0.0	53.7	0.0	60.6	43.9	38.8	16.2	183.1	0.0	38.6
LnGrp LOS	C	B		D	A	F	D	D	B	F	A	D
Approach Vol, veh/h		505	A		1093			1180			756	
Approach Delay, s/veh		17.2			57.6			35.6			110.1	
Approach LOS		B			E			D			F	

Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	8.0	30.0		32.0		38.0	8.0	24.0				
Change Period (Y+Rc), s	3.0	7.0		6.0		7.0	3.0	6.0				
Max Green Setting (Gmax), s	5.0	23.0		26.0		31.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	5.6	25.0		25.2		9.8	7.0	20.0				
Green Ext Time (p_c), s	0.0	0.0		0.5		1.9	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			55.7									
HCM 6th LOS			E									

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	162	859	1093	241	939	756
v/c Ratio	0.59	0.95	2.53dl	0.88	0.67	0.94
Control Delay	19.3	37.5	258.3	50.9	21.3	46.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	37.5	258.3	50.9	21.3	46.9
Queue Length 50th (ft)	36	294	~371	67	173	158
Queue Length 95th (ft)	#69	#546	#494	#171	235	#270
Internal Link Dist (ft)		319	324		418	350
Turn Bay Length (ft)	185					
Base Capacity (vph)	275	907	725	273	1400	801
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.95	1.51	0.88	0.67	0.94

Intersection Summary

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	316	475	275	720	10	222	657	207	45	511	140
Future Volume (veh/h)	149	316	475	275	720	10	222	657	207	45	511	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067
Adj Flow Rate, veh/h	162	343	0	299	783	11	241	714	225	49	555	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	926		351	771	11	278	1077	339	91	650	178
Arrive On Green	0.07	0.45	0.00	0.33	0.33	0.33	0.07	0.37	0.37	0.25	0.25	0.25
Sat Flow, veh/h	1969	2067	0	802	2312	33	1969	2939	926	131	2578	706
Grp Volume(v), veh/h	162	343	0	474	0	619	241	477	462	378	0	378
Grp Sat Flow(s),veh/h/ln	1969	2067	0	1272	0	1875	1969	1964	1901	1662	0	1754
Q Serve(g_s), s	3.6	7.7	0.0	23.3	0.0	23.0	5.0	14.2	14.2	9.0	0.0	14.4
Cycle Q Clear(g_c), s	3.6	7.7	0.0	23.3	0.0	23.0	5.0	14.2	14.2	15.3	0.0	14.4
Prop In Lane	1.00		0.00	0.63		0.02	1.00		0.49	0.13		0.40
Lane Grp Cap(c), veh/h	247	926		508	0	625	278	720	697	477	0	442
V/C Ratio(X)	0.66	0.37		0.93	0.00	0.99	0.87	0.66	0.66	0.79	0.00	0.85
Avail Cap(c_a), veh/h	247	926		508	0	625	278	729	706	485	0	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	12.8	0.0	24.6	0.0	23.2	21.8	18.6	18.6	24.8	0.0	24.9
Incr Delay (d2), s/veh	6.1	1.1	0.0	26.5	0.0	33.5	23.6	2.2	2.3	8.7	0.0	14.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	6.2	0.0	17.1	0.0	21.7	8.0	10.7	10.5	11.2	0.0	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	13.9	0.0	51.0	0.0	56.7	45.5	20.8	20.8	33.5	0.0	39.4
LnGrp LOS	C	B		D	A	E	D	C	C	C	A	D
Approach Vol, veh/h		505	A		1093			1180			756	
Approach Delay, s/veh		16.8			54.2			25.8			36.4	
Approach LOS		B			D			C			D	

Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	8.0	30.3		31.7		38.3	8.0	23.7				
Change Period (Y+Rc), s	3.0	7.0		6.0		7.0	3.0	6.0				
Max Green Setting (Gmax), s	5.0	23.0		26.0		31.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	5.6	25.3		16.2		9.7	7.0	17.3				
Green Ext Time (p_c), s	0.0	0.0		4.4		1.9	0.0	0.4				

Intersection Summary			
HCM 6th Ctrl Delay		35.6	
HCM 6th LOS		D	

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	217	861	777	209	582	743
v/c Ratio	0.63	0.95	2.74dl	0.76	0.43	0.84
Control Delay	19.7	40.4	63.2	35.5	17.8	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	40.4	63.2	35.5	17.8	34.1
Queue Length 50th (ft)	49	322	~199	57	95	150
Queue Length 95th (ft)	#95	#573	#310	#134	136	#238
Internal Link Dist (ft)		329	324		418	350
Turn Bay Length (ft)	185					
Base Capacity (vph)	346	902	768	274	1386	901
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.95	1.01	0.76	0.42	0.82

Intersection Summary

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	445	347	297	408	10	192	370	166	32	523	129
Future Volume (veh/h)	200	445	347	297	408	10	192	370	166	32	523	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067	2067
Adj Flow Rate, veh/h	217	484	0	323	443	11	209	402	180	35	568	140
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	374	955		374	636	16	278	933	413	80	685	166
Arrive On Green	0.07	0.46	0.00	0.35	0.35	0.35	0.07	0.35	0.35	0.24	0.24	0.24
Sat Flow, veh/h	1969	2067	0	780	1828	45	1969	2649	1172	100	2879	697
Grp Volume(v), veh/h	217	484	0	323	0	454	209	297	285	390	0	353
Grp Sat Flow(s),veh/h/ln	1969	2067	0	780	0	1873	1969	1964	1856	1920	0	1756
Q Serve(g_s), s	4.8	11.5	0.0	20.8	0.0	14.6	5.0	8.1	8.2	6.9	0.0	13.4
Cycle Q Clear(g_c), s	4.8	11.5	0.0	24.3	0.0	14.6	5.0	8.1	8.2	13.4	0.0	13.4
Prop In Lane	1.00		0.00	1.00		0.02	1.00		0.63	0.09		0.40
Lane Grp Cap(c), veh/h	374	955		374	0	651	278	692	654	513	0	418
V/C Ratio(X)	0.58	0.51		0.86	0.00	0.70	0.75	0.43	0.44	0.76	0.00	0.84
Avail Cap(c_a), veh/h	374	955		374	0	651	278	729	690	548	0	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.6	13.2	0.0	26.3	0.0	19.7	20.5	17.3	17.4	25.2	0.0	25.4
Incr Delay (d2), s/veh	2.3	1.9	0.0	22.3	0.0	6.1	11.0	0.4	0.5	5.8	0.0	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.7	8.9	0.0	12.3	0.0	11.5	5.8	6.4	6.2	11.0	0.0	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	15.1	0.0	48.6	0.0	25.7	31.5	17.7	17.8	31.0	0.0	38.4
LnGrp LOS	B	B		D	A	C	C	B	B	C	A	D
Approach Vol, veh/h		701	A		777			791			743	
Approach Delay, s/veh		15.7			35.2			21.4			34.6	
Approach LOS		B			D			C			C	

Timer - Assigned Phs	1	2		4		6	7	8				
Phs Duration (G+Y+Rc), s	8.0	31.3		30.7		39.3	8.0	22.7				
Change Period (Y+Rc), s	3.0	7.0		6.0		7.0	3.0	6.0				
Max Green Setting (Gmax), s	5.0	23.0		26.0		31.0	5.0	18.0				
Max Q Clear Time (g_c+I1), s	6.8	26.3		10.2		13.5	7.0	15.4				
Green Ext Time (p_c), s	0.0	0.0		3.4		2.8	0.0	1.2				

Intersection Summary			
HCM 6th Ctrl Delay		26.9	
HCM 6th LOS		C	

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX I

Signal Warrant Analysis

Westfield TOD

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: South Avenue at Eastern Site Driveway

COUNT DATE: SLD & Saturday Count Data

INTERSECTION CONDITION: Future 2027 Full Build

MAJOR STREET: South Avenue

OF APPROACH LANES: 1

MINOR STREET: Eastern Site 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): N

	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 →			500	150		750	75		400	120		600	60			
06:00 AM TO 07:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
07:00 AM TO 08:00 AM	1,387	44	Y			Y			Y			Y				
08:00 AM TO 09:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
09:00 AM TO 10:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
10:00 AM TO 11:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
11:00 AM TO 12:00 PM	#VALUE!	92	#VALUE!		######	#VALUE!	Y	######	#VALUE!		######	#VALUE!	Y	######	#VALUE!	#VALUE!
12:00 PM TO 01:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
01:00 PM TO 02:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
02:00 PM TO 03:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
03:00 PM TO 04:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
04:00 PM TO 05:00 PM	1,352	117	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
05:00 PM TO 06:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
06:00 PM TO 07:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
07:00 PM TO 08:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
08:00 PM TO 09:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
09:00 PM TO 10:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
	#VALUE!	253			######			######			######			######	#VALUE!	#VALUE!
			8 HOURS NEEDED **#VALUE!**			8 HOURS NEEDED **#VALUE!**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **#VALUE!**						4 HRS NEEDED **#VALUE!**	1 HR NEEDED **#VALUE!**

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

Westfield TOD

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: North Avenue at Clark Street

COUNT DATE: Weekday and Saturday Count Data

INTERSECTION CONDITION: Future 2027 Full Build

MAJOR STREET: North Avenue — # OF APPROACH LANES: 1

MINOR STREET: Clark Street — # 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): N

			MAJOR ST BOTH APPROACHES	HIGHEST HOUR MINOR ST HIGHEST APPROACH	WARRANT 1, Condition A			WARRANT 1, Condition B			WARRANT 1, Combination Warrant						WARRANT 2	WARRANT 3
											CONDITION A			CONDITION B				
					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 →					500	150		750	75		400	120		600	60			
06:00 AM	TO	07:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
07:00 AM	TO	08:00 AM	1,395	216	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
08:00 AM	TO	09:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
09:00 AM	TO	10:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
10:00 AM	TO	11:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
11:00 AM	TO	12:00 PM	#VALUE!	198	#VALUE!	Y	######	#VALUE!	Y	######	#VALUE!	Y	######	#VALUE!	Y	######	**#VALUE!**	**#VALUE!**
12:00 PM	TO	01:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
01:00 PM	TO	02:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
02:00 PM	TO	03:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
03:00 PM	TO	04:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
04:00 PM	TO	05:00 PM	1,382	267	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
05:00 PM	TO	06:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
06:00 PM	TO	07:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
07:00 PM	TO	08:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
08:00 PM	TO	09:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
09:00 PM	TO	10:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	**#VALUE!**	**#VALUE!**
			#VALUE!	681			######			######			######			######	**#VALUE!**	**#VALUE!**
					8 HOURS NEEDED **#VALUE!**			8 HOURS NEEDED **#VALUE!**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **#VALUE!**						4 HRS NEEDED **#VALUE!**	1 HR NEEDED **#VALUE!**

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

Westfield TOD

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: Broad Street at Prospect Street

COUNT DATE: StreetLight data & Saturday Count Data

INTERSECTION CONDITION: Future 2027 Full Build

MAJOR STREET: Broad Street # OF APPROACH LANES: 1

MINOR STREET: Prospect Street # 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): N

	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 →			500	150		750	75		400	120		600	60			
06:00 AM TO 07:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
07:00 AM TO 08:00 AM	1,220	118	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
08:00 AM TO 09:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
09:00 AM TO 10:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
10:00 AM TO 11:00 AM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
11:00 AM TO 12:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
12:00 PM TO 01:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
01:00 PM TO 02:00 PM	#VALUE!	166	#VALUE!	Y	######	#VALUE!	Y	######	#VALUE!	Y	######	#VALUE!	Y	######	#VALUE!	#VALUE!
02:00 PM TO 03:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
03:00 PM TO 04:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
04:00 PM TO 05:00 PM	1,363	114	Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
05:00 PM TO 06:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
06:00 PM TO 07:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
07:00 PM TO 08:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
08:00 PM TO 09:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
09:00 PM TO 10:00 PM	#VALUE!	0	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!		######	#VALUE!	#VALUE!
	#VALUE!	398			######			######			######			######	#VALUE!	#VALUE!
			8 HOURS NEEDED **#VALUE!**			8 HOURS NEEDED **#VALUE!**			8 HOURS OF BOTH COND. A AND COND. B NEEDED **#VALUE!**						4 HRS NEEDED **#VALUE!**	1 HR NEEDED **#VALUE!**

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

STONEFIELD

Intersection of Prospect Street
& Broad Street
Westfield, New Jersey

Exhibit A2: Count Adjustment for Warrant Analysis

		October TMCs AM Peak								
		EBL	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**SBT**	**SBR**
Time	**Percentage**	26	83	8	36	19	122	566	371	46
12:00 AM	3%	1	2	0	1	1	4	17	11	1
1:00 AM	1%	0	1	0	0	0	2	7	5	1
2:00 AM	1%	0	1	0	0	0	1	5	3	0
3:00 AM	2%	0	1	0	1	0	2	9	6	1
4:00 AM	3%	1	3	0	1	1	4	18	12	1
5:00 AM	12%	3	10	1	4	2	14	65	43	5
6:00 AM	49%	13	40	4	18	9	59	276	181	22
7:00 AM	101%	**0**	**84**	**8**	**36**	**19**	**123**	**571**	**374**	**46**
8:00 AM	100%	**0**	**83**	**8**	**36**	**19**	**122**	**566**	**371**	**46**
9:00 AM	88%	**0**	**73**	**7**	**32**	**17**	**107**	**496**	**325**	**40**
10:00 AM	85%	**22**	**71**	**7**	**31**	**16**	**104**	**482**	**316**	**39**
11:00 AM	86%	**22**	**71**	**7**	**31**	**16**	**105**	**486**	**319**	**39**
12:00 PM	85%	**21**	**99**	**14**	**33**	**44**	**102**	**383**	**360**	**41**
1:00 PM	78%	**19**	**91**	**12**	**30**	**40**	**94**	**352**	**331**	**38**
2:00 PM	88%	**22**	**103**	**14**	**34**	**46**	**107**	**399**	**376**	**43**
3:00 PM	90%	**22**	**105**	**14**	**35**	**47**	**109**	**407**	**383**	**44**
4:00 PM	96%	**24**	**113**	**15**	**38**	**50**	**116**	**436**	**410**	**47**
5:00 PM	100%	**25**	**117**	**16**	**39**	**52**	**121**	**453**	**426**	**49**
6:00 PM	90%	**22**	**105**	**14**	**35**	**47**	**109**	**406**	**382**	**44**
7:00 PM	67%	17	78	11	26	35	81	303	285	33
8:00 PM	46%	11	53	7	18	24	55	207	194	22
9:00 PM	32%	8	38	5	13	17	39	146	138	16
10:00 PM	16%	4	18	3	6	8	19	71	67	8
11:00 PM	6%	2	7	1	2	3	7	27	26	3
		25	117	16	39	52	121	453	426	49
		EBL	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**SBT**	**SBR**
		October TMCs PM Peak								

Warrants Volume

Information

Analyst		Intersection	Broad Street & Prospect Street
Agency/Co	SE&D	Jurisdiction	Union County
Date Performed	4/13/2022	Units	U.S. Customary
Project ID		Time Period Analyzed	PRI-210151
East/West Street	Prospect Street	North/South Street	Broad Street
File Name	Warrants-Existing	Major Street	North-South

Project Description

Warrant 1

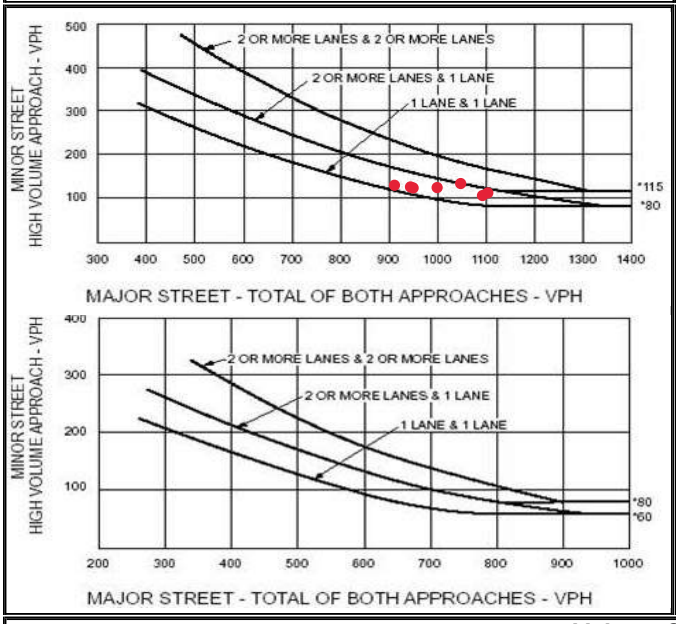
Condition A - Minimum Vehicular Volume

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

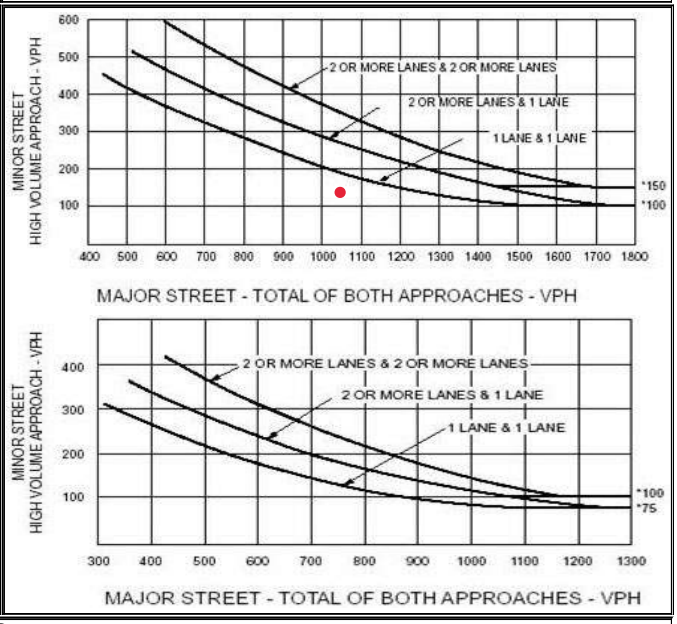
Condition B - Interruption of Continuous Traffic

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

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 1 **Minor Street Lanes** 1 **Speed** 25 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)
07-08	1114	110	1287	No	No	Yes	Yes	Yes	No	No
08-09	1105	109	1277	No	No	Yes	Yes	Yes	No	No
09-10	968	96	1120	No	No	Yes	Yes	No	No	No
10-11	941	93	1088	No	No	Yes	Yes	No	No	No
11-12	949	93	1096	No	No	Yes	Yes	No	No	No
12-13	886	120	1097	No	Yes	Yes	Yes	No	No	No
13-14	815	110	1007	No	No	Yes	Yes	No	No	No
14-15	925	125	1144	No	Yes	Yes	Yes	Yes	No	No
15-16	943	127	1166	No	Yes	Yes	Yes	Yes	No	No
16-17	1009	137	1249	No	Yes	Yes	Yes	Yes	No	No
17-18	1049	142	1298	No	Yes	Yes	Yes	Yes	No	No
18-19	941	127	1164	No	Yes	Yes	Yes	Yes	No	No
Totals	11645	1389	13993	0	6	12	12	7	0	0

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HCS+: MUTCD Signal Warrants Release 5.5

Analyst:
Date: 4/13/2022
Project ID:
EW Street: Prospect Street

Intersection: Broad Street & Prospect StreeAgency: SE&D
Units: U.S. Customary
Analysis Year: 2022
NS Street: Broad Street

Jurisdiction: Union County

General Information

Major St. Speed (mph): 25
Nearest Signal (ft): 285
Crashes per Yr: 3

Population: Not less than 10000
Coordinated Signal System: N

School Crossing

Students in Highest Hour: 0
Adequate Gaps in Period: 0
Minutes in Period: 0

Roadway Network

Two Major Routes: 0
Weekend Count: 0
5-yr Growth Factor: 0

Geometry and Traffic

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LaneUsage		LTR			LTR			LT			TR	

Results

Warrant 1: Eight-Hour Vehicular Volume	[X]
1 A. Minimum Vehicular Volumes	[ ]
1 B. Interruption of Continuous Traffic	[X]
1 80% Vehicular --and-- Interruption Volumes	[ ]
Warrant 2: Four-Hour Vehicular Volume	
2 A. Four-Hour Vehicular Volumes	[X]
Warrant 3: Peak Hour	[ ]
3 A. Peak-Hour Conditions	[ ]
3 B. Peak-Hour Vehicular Volume Hours Met	[ ]
Warrant 4: Pedestrian Volume	[ ]
4 A. Pedestrian Volumes	[ ]
4 B. Gaps Same Period	[ ]
Warrant 5: School Crossing	[ ]
5 A. Student Volumes	[ ]
5 B. Gaps Same Period	[ ]
Warrant 6: Coordinated Signal System	
6 Degree of Platooning	[ ]
Warrant 7: Crash Experience	[ ]
7 A. Adequate trials of alternatives	[ ]
7 B. Reported crashes	[ ]

7 80% Volumes for Warrants 1A, 1B --or-- 4 [X]

Warrant 8: Roadway Network [ ]
8 A. Weekday Volume [ ]
8 B. Weekend Volume [ ]

Summary

Hours	Major Volume	Minor Volume	Total Volume	Delay (Veh-hr)	1A 100%	1A 80%	1B 100%	1B 80%	2 100%	3A 100%	3B 100%
07-08	1114	110	1287	0.0	No	No	Yes	Yes	Yes	No	No
08-09	1105	109	1277	0.0	No	No	Yes	Yes	Yes	No	No
09-10	968	96	1120	0.0	No	No	Yes	Yes	No	No	No
10-11	941	93	1088	0.0	No	No	Yes	Yes	No	No	No
11-12	949	93	1096	0.0	No	No	Yes	Yes	No	No	No
12-13	886	120	1097	0.0	No	Yes	Yes	Yes	No	No	No
13-14	815	110	1007	0.0	No	No	Yes	Yes	No	No	No
14-15	925	125	1144	0.0	No	Yes	Yes	Yes	Yes	No	No
15-16	943	127	1166	0.0	No	Yes	Yes	Yes	Yes	No	No
16-17	1009	137	1249	0.0	No	Yes	Yes	Yes	Yes	No	No
17-18	1049	142	1298	0.0	No	Yes	Yes	Yes	Yes	No	No
18-19	941	127	1164	0.0	No	Yes	Yes	Yes	Yes	No	No
Total	11645	1389	13993		0	6	12	12	7	0	0

Traffic Volumes (vph)

Eastbound			Westbound			Northbound			Southbound		
L	T	R	L	T	R	L	T	R	L	T	R
26	0	84	8	36	19	123	571	0	0	374	46
26	0	83	8	36	19	122	566	0	0	371	46
23	0	73	7	32	17	107	496	0	0	325	40
22	0	71	7	31	16	104	482	0	0	316	39
22	0	71	7	31	16	105	486	0	0	319	39
21	0	99	14	33	44	102	383	0	0	360	41
19	0	91	12	30	40	94	352	0	0	331	38
22	0	103	14	34	46	107	399	0	0	376	43
22	0	105	14	35	47	109	407	0	0	383	44
24	0	113	15	38	50	116	436	0	0	410	47
25	0	117	16	39	52	121	453	0	0	426	49
22	0	105	14	35	47	109	406	0	0	382	44

Pedestrian Volumes and Gaps (Per Hour)

Volume	Gap	Volume	Gap	Volume	Gap	Volume	Gap
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	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	0	0	0	0
0	0	0	0	0	0	0	0
3	0	1	0	1	0	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	0

!

Delay	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs
	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	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	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	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	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	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	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	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