



Vanasse Hangen Brustlin, Inc.

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Memorandum

To: Mr. Peter Lee
PSI, Inc.
477 Concord Avenue
Cambridge, Massachusetts 02138

Date: May 28, 2013

Project No.: 12335.00

From: Matt Kealey, P.E., PTOE
Project Manager

Re: Proposed Residential Redevelopment
Somerville, Massachusetts

INTRODUCTION

Vanasse Hangen Brustlin, Inc. (VHB), has conducted a traffic impact and access study for a proposed residential redevelopment to be located at the corner of Temple Street and Broadway in Somerville, Massachusetts. The proposed development involves the construction of a total of 50 apartment units and approximately 7,572 sf of retail space. As part of the project, approximately 9,660 sf of existing building area (4,788 sf of retail and 4,872 sf of office) will be demolished, resulting in a net reduction of 2,088 sf of commercial space. Figure 1 shows the site locus map.

Access to the site is proposed via two driveways; one on Temple Street on the north side of the existing parking area on the site, and a secondary driveway onto Langmaid Avenue. Under existing conditions, access to the site is provided by a single driveway on Temple Street opposite the driveway for Rite Aid. Under proposed conditions, the site driveway will be shifted slightly to the north. This study quantifies existing and projected future traffic conditions and identifies potential impacts within the study area.

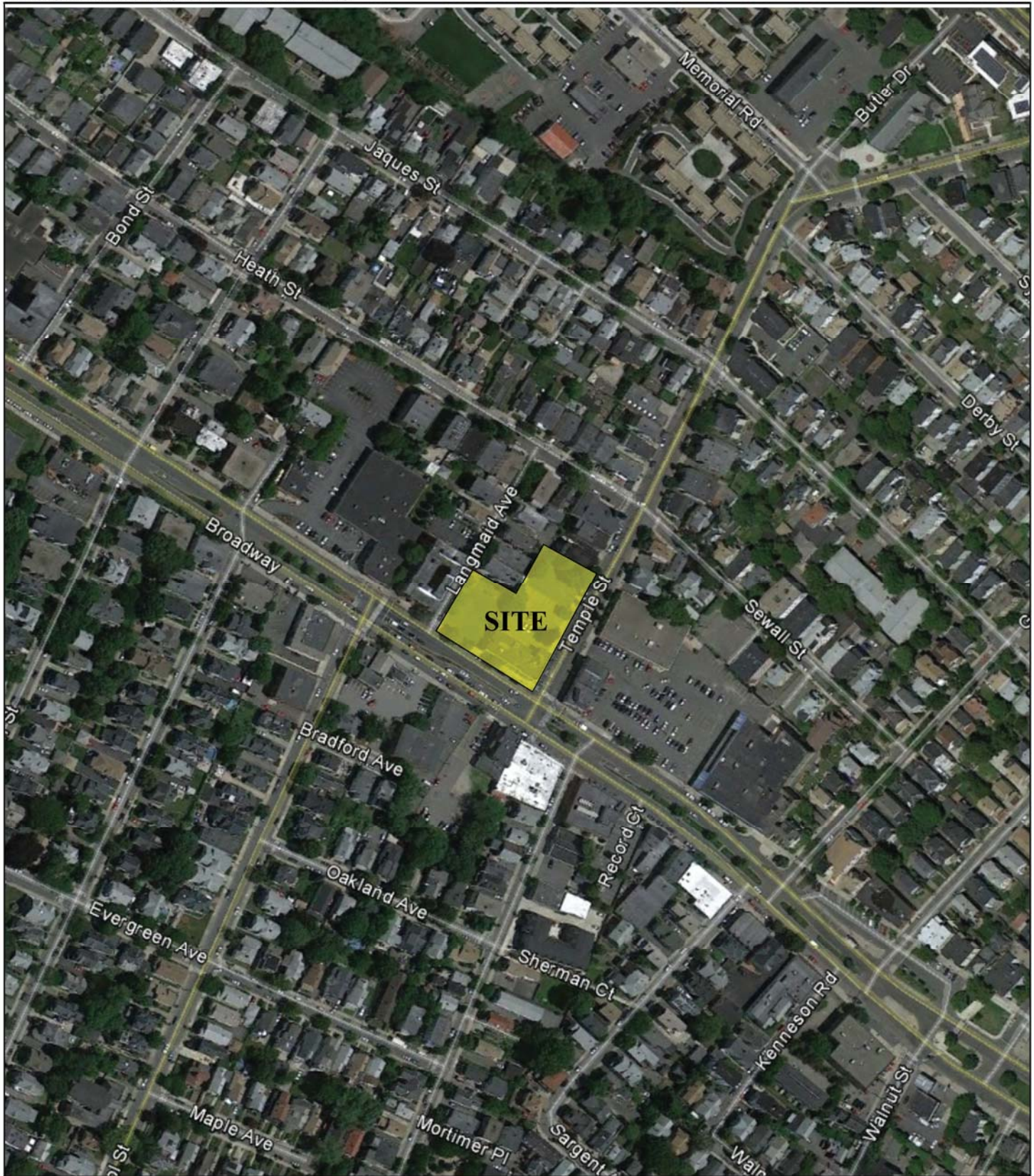
EXISTING CONDITIONS

Evaluation of the transportation impacts associated with the proposed project requires a thorough understanding of the existing transportation system in the project study area. A complete inventory and evaluation of the existing transportation system in the project study area was conducted. The analysis of existing transportation conditions is based on the existing roadway network, roadway/intersection geometry, traffic control, existing daily and peak hour traffic volumes, traffic safety conditions, and existing public transportation. A description of existing conditions within the study area is presented below.

Study Area Intersections

The key roadways in the study area include Broadway and Temple Street. The transportation study area is based on the expected level of traffic to be generated by the project and an understanding of the surrounding area roadways. The proposed study area includes the following intersections:

- Temple Street at Broadway
- Temple Street at Site Driveway/Rite Aid Driveway



Vanasse Hangen Brustlin, Inc.

Site Locus Map
Proposed Residential Development
Somerville, Massachusetts

Figure 1



0 250 500 Feet

The following description of the study area intersections includes the physical characteristics, geometric conditions, and traffic control.

Temple Street at Broadway

Temple Street intersects with Broadway to form a three-legged signalized intersection. The Broadway eastbound approach to this intersection provides an exclusive left-turn lane and two through lanes. The Broadway westbound approach provides an exclusive right-turn lane and two through lanes. The Temple Street southbound approach provides an exclusive left-turn lane and an exclusive right-turn lane. Sidewalks are provided on both sides of Temple Street and Broadway. Crosswalks are provided across Temple Street and across Broadway east of Temple Street. Concurrent pedestrian signal phasing is provided with push-button actuation. Land use in the vicinity of the intersection is a mix of commercial and residential uses.

Temple Street at Existing Site Driveway/Rite Aid Driveway

The existing site driveway currently provides access to a permit-only parking area. It intersects with Temple Street to form the eastbound approach to a four-way unsignalized intersection. The westbound approach to the intersection provides access to/from Rite Aid. Sidewalks are provided on both sides of Temple Street at this location. Land use in the vicinity of the intersection is a mix of commercial and residential uses.

Existing Traffic Volumes

Daily traffic volume data were collected on Temple Street north of the site driveway in March 2013 using automatic traffic recorders (ATR). The volumes are summarized in Table 1.

Table 1
Existing Traffic Volume Summary

Location	Direction	ADT ^a	Morning Peak Hour			Evening Peak Hour		
			Volume	K Factor ^b	Dir. Dist. ^c	Volume	K Factor	Dir. Dist.
Temple Street north of Broadway	Total	11,920	875	7.3%	65% SB	910	7.6%	64% SB

Source: VHB based on automatic traffic recorder counts conducted on March 21, 2013.

a. Average Daily Traffic volume expressed in vehicles per day.

b. Represents the percent of daily traffic that occurs during the peak hour.

c. Directional distribution of peak hour traffic.

Note: Peak hours do not necessarily coincide with the peak hours of turning movement counts.

As shown in Table 1, Temple Street, north of the Broadway, carries approximately 11,920 vehicles on a typical weekday with the peak hours accounting for 7.3 percent (morning peak hour) and 7.6 percent (evening peak hour) of the daily traffic flow.

Concurrent with the ATR counts, turning movements counts (TMCs) were conducted at each of the study area intersections in March 2013 during the weekday morning peak period from 7:00 AM to 9:00 AM and the evening peak period from 4:00 PM to 6:00 PM. Counts were conducted in May 2013 during the Saturday midday peak period from 11:00 AM to 1:00 PM. The TMC data indicates that, within the study area, the weekday morning peak hour generally occurs between 7:45 AM and 8:45 AM, the weekday evening peak hour occurs between 5:00 PM and 6:00 PM, and the Saturday midday peak period occurs between 11:15 AM and 12:15 PM. The TMC and ATR data are provided in the Attachments.

Seasonal Variation

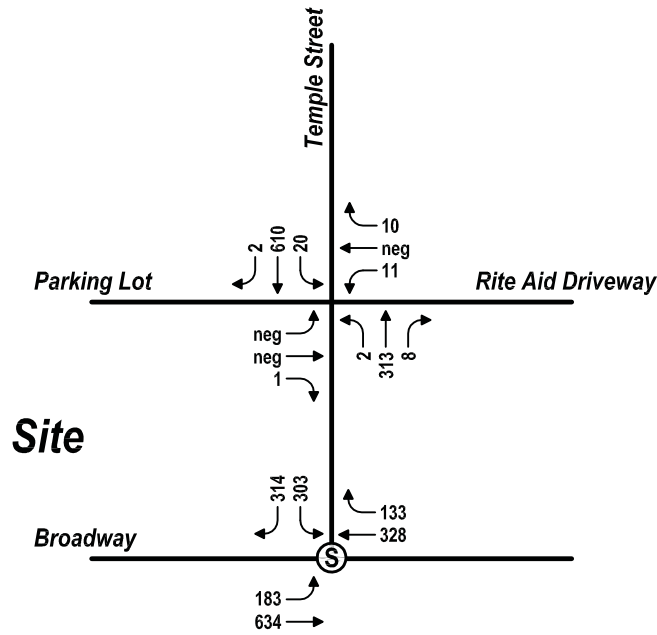
MassDOT historical traffic counts were reviewed to understand the seasonality of traffic count data collected in the month of March. The statewide data for seasonal variation of traffic volumes on urban arterials, collectors and rural arterials indicated that traffic counts in March and May are generally higher than the average month. In addition, specific traffic data from MassDOT Permanent Count Station 8098 (I-93 north of McGrath Highway) were reviewed. This data showed that historic volumes in March and May were also higher than average conditions. Since the counts were found to be higher than annual average conditions, no further seasonal adjustment factors were applied to the data. Figures 2 and 3 illustrate the resulting 2013 Existing Conditions weekday morning, weekday evening, and Saturday midday peak hour traffic volumes.

Crash History

To identify motor vehicle crash trends in the project study area, crash data for the study area intersections was obtained from MassDOT for the most recent three years available (2008 through 2010). A summary of the vehicle crash data is presented in Table 2.

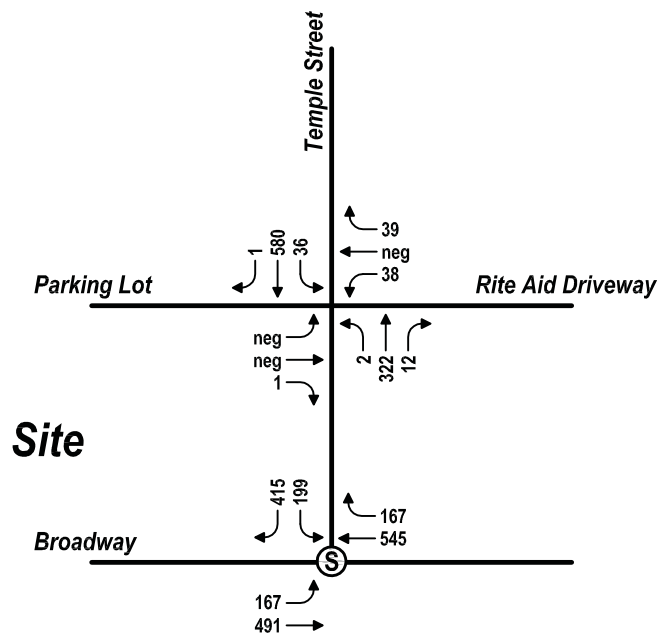
Weekday Morning Peak Hour

Ⓢ Signalized Intersection
neg Negligible



Weekday Evening Peak Hour

Ⓢ Signalized Intersection
neg Negligible



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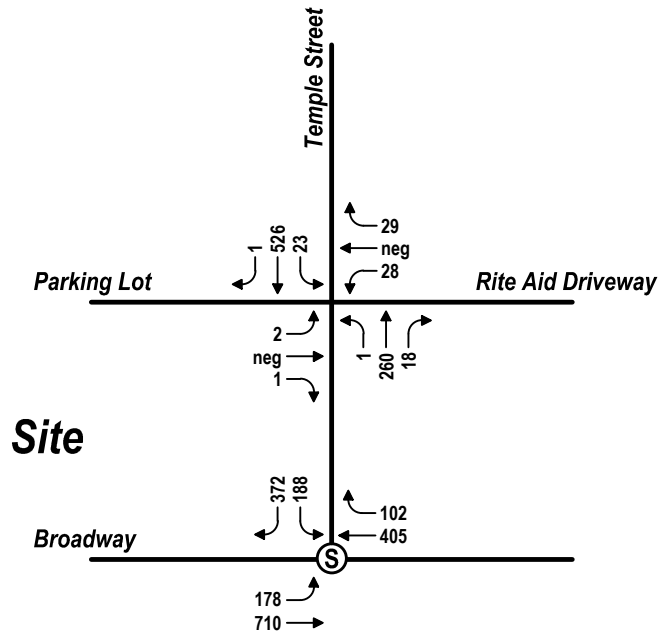
2013 Existing Conditions
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

Figure 2



Not to Scale

Saturday Midday Peak Hour
Ⓢ Signalized Intersection
neg Negligible



Vanasse Hangen Brustlin, Inc.

2013 Existing Conditions
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

Figure 3



Not to Scale

Table 2: Study Area Intersection Crash Summary - 2008 through 2010

	Broadway at Temple Street	Temple Street at Rite Aid Driveway/Parking Lot
Year		
2008	6	0
2009	5	1
<u>2010</u>	<u>3</u>	<u>0</u>
Total	14	1
Average	4.67	0.33
Calculated Crash Rate	0.58	0.08
MassDOT Average Crash Rate	0.76	0.58
Exceeds ACR?	No	No
Collision Type		
Angle	0	0
Head-on	0	0
Rear-end	8	1
Sideswipe, opposite direction	0	0
Sideswipe, same direction	3	0
Single vehicle crash	3	0
Crash Severity		
Fatal injury	0	0
Non-fatal injury	8	0
Property damage only (none injured)	4	1
Not Reported/Unknown	2	0
Time of Day		
Weekday, 7:00 AM - 9:00 AM	3	1
Weekday, 4:00 PM - 6:00 PM	2	0
Saturday, 11:00 AM - 2:00 PM	0	0
Weekday, other time	9	0
Weekend, other time	0	0
Pavement Conditions		
Dry	9	1
Wet	5	0
Snow	0	0
Ice	0	0
Other/Not Reported/Unknown	0	0
Lighting Conditions		
Daylight	9	1
Dawn/Dusk	0	0
Dark-Lighted Roadway	4	0
Dark-Unknown Roadway Lighting	1	0
No Reported/Unknown	0	0
Non Motorist (Bike, Pedestrian)	1	0

Source: MassDOT database records, compiled by VHB

As shown in Table 2, the crash rates for both intersections are well below the MassDOT District average.

Public Transportation

Public transportation in the study area is provided by the Massachusetts Bay Transportation Authority (MBTA) via four bus routes that run near the site. The bus routes and the stops closest to the site are summarized below:

- Bus 80 – Arlington Center Lechmere Station via Medford Hillside
 - o Medford at School Street
 - o Pearl Street at Skilton Avenue
- Bus 89 – Clarendon Hill of Davis Square Sullivan Square Station via Broadway
 - o Broadway opposite Temple Street
 - o Broadway at Langmaid Avenue
- Bus 95 – West Medford Sullivan Square Station via Mystic Avenue
 - o Mystic Avenue at Temple Road
 - o Mystic Avenue opposite Thurston Street
- Bus 101 – Malden Center Station Sullivan Square Station via Salem St., Main St., and Broadway
 - o Broadway opposite Temple Street
 - o Broadway at Langmaid Avenue

Within a half mile of the site, these four bus routes provide 27 bus stops. Collectively, the bus routes mentioned above provide riders with the ability to connect to the MBTA Green Line, Orange Line, and Red Line.

FUTURE CONDITIONS

To determine future roadway operations, traffic volumes in the study area were projected to the year 2018 to reflect a five-year planning horizon from the existing conditions. The year 2018 was selected as the horizon year for the preparation of this study in conformance with EEA/EOTPW and MassDOT guidelines.

Traffic volumes on the roadway network under future conditions without the project (No-Build) are assumed to include all existing traffic, any new traffic due to regional and area background traffic growth, and traffic related to any specific nearby development projects expected to be completed by the 2018 horizon year. Anticipated traffic volumes from the proposed development were added to the No-Build traffic volumes to reflect future conditions with the project (Build).

No-Build Conditions

No-Build traffic volumes were determined by considering existing traffic volumes and adding regional traffic growth and traffic from other nearby developments. Traffic growth is a function of expected new development, changes in demographics, and changes in auto usage and ownership in the region. Regional traffic growth is projected by examining historic traffic growth trends.

Regional Traffic Growth

To determine trends in traffic growth in this area, VHB reviewed traffic data available from MassDOT for the City of Somerville. Generally speaking, traffic volumes in the surrounding area have remained level or have decreased in recent years. However, in order to present a conservative analysis, a growth rate of one percent per year was applied to the traffic volumes within the study area.

Planned/Approved Developments

In addition to accounting for background growth, the traffic associated with other planned/approved developments near the site was also considered. Based on information provided by the Somerville Planning Department, it was determined that five projects are planned and were considered as background development projects:

- Assembly Square: Approximately 5 million sf mixed-use redevelopment
- 625 McGrath Highway: 34 residential units
- 100 Fellsway West: 54 residential units
- Saint Polycarps Phase 3 (Mystic Ave./Butler Dr./Temple St.): 30 residential units
- Cross Street East residential development: 120 units

Given the limited amount of traffic generated by the 625 McGrath Highway residential project and the limited study area for the Proponent's proposed development, no specific volumes from this project was added to the study area intersections. Regarding the Assembly Square project, site-generated traffic volumes were collected from the Traffic Impact and Access Study that was originally prepared in conjunction with the permitting of the Planned Unit Development (PUD) Preliminary Master Plan, which was approved by the Somerville Planning Board on December 14, 2006 and subsequently amended on August 5, 2010. Traffic volumes associated with the 100 Fellsway West and Saint Polycarps projects were projected based on the Institute of Transportation Engineers *Trip Generation*¹, 9th Edition. Traffic volumes associated with the Cross Street East development were taken from the traffic study that was prepared for that project, dated January 31, 2013. The year 2018 No-Build traffic volume networks were developed by applying the one percent annual growth rate over the five-year study horizon to the existing volume networks and adding the Assembly Square site generated traffic volumes. Figures 4 and 5 show the resulting 2018 No-Build peak hour traffic volume networks. Background traffic volumes associated with the other projects are provided in the Attachments.

Build Conditions

Build traffic volumes were determined by estimating site-generated traffic volumes and distributing these volumes over the study area roadways. The site generated volumes include new trips due to the proposed residential development.

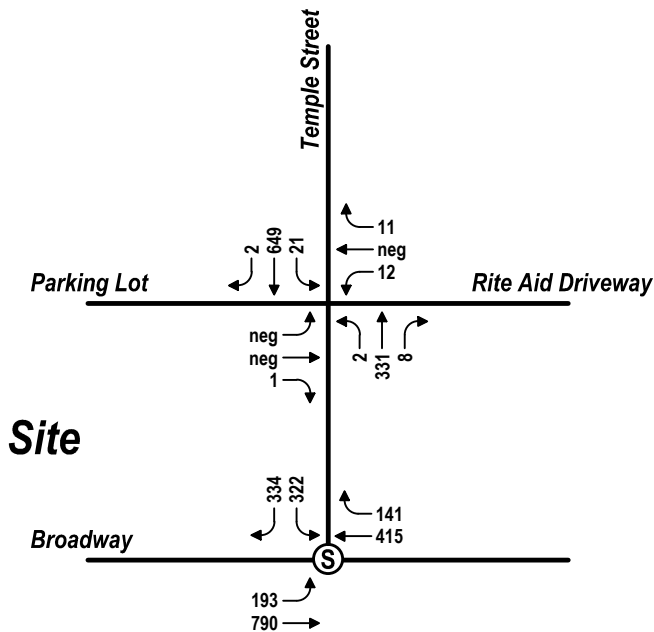
Site-Generated Traffic Volumes

The rate at which any development generates traffic is dependent upon a number of factors such as size, location and concentration of surrounding developments. The number of vehicle-trips estimated to be generated by proposed project was estimated based on trip generation rates published in the Institute of Transportation Engineers *Trip Generation*, 9th Edition. ITE land use code 220, Apartments, was determined to be the most appropriate land use code for this development. As mentioned previously, the proposed project involves the construction of 50 residential units, approximately 7,572 sf of retail space, and the demolition of 4,788 sf of existing retail space and 4,872 sf of office space for a net reduction of 2,088 sf of commercial area. Table 3 summarizes the projected trip generation associated with the proposed residential development. The trip generation calculations are provided in the Attachments.

¹ Institute of Transportation Engineers, *Trip Generation*, Ninth Edition, Washington, D.C., 2013.

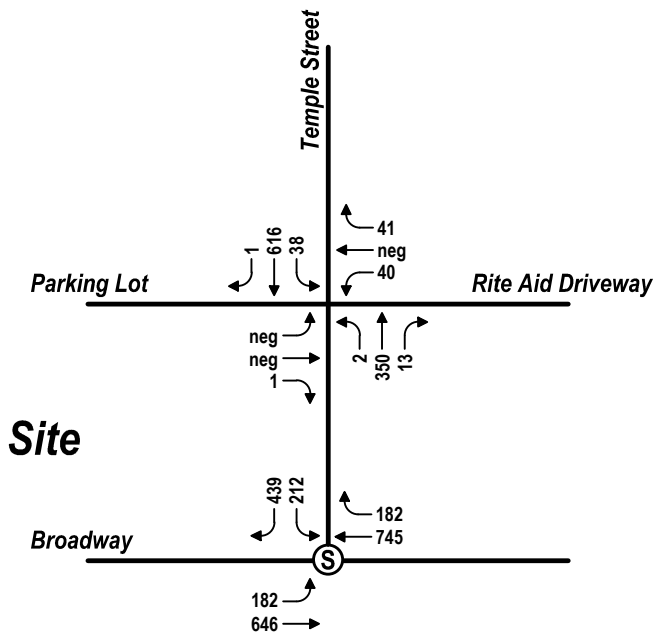
Weekday Morning Peak Hour

- Ⓢ Signalized Intersection
- neg Negligible



Weekday Evening Peak Hour

- Ⓢ Signalized Intersection
- neg Negligible



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2018 No Build Conditions
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

Figure 4



Not to Scale

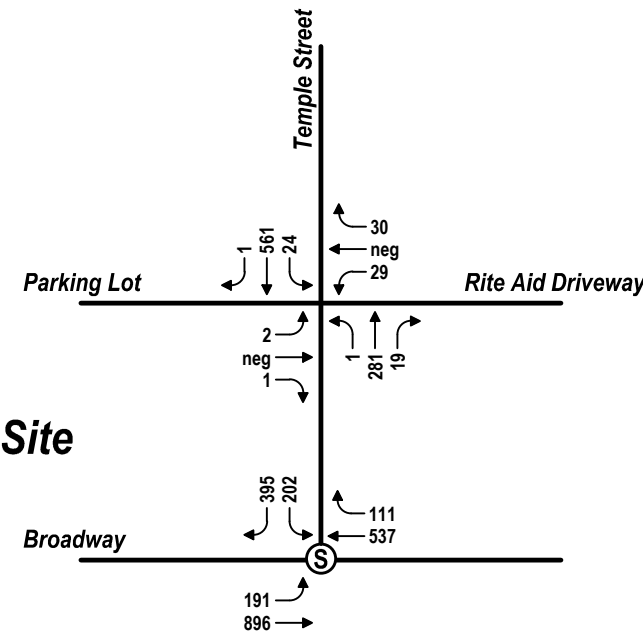
Saturday Midday Peak Hour

Ⓢ

Signalized Intersection

neg

Negligible



Vanasse Hangen Brustlin, Inc.

2018 No Build Conditions
 Peak Hour Traffic Volumes
 Proposed Residential Development
 Somerville, Massachusetts

Figure 5

Table 3
Project Trip Generation Summary

Time Period	Commercial Traffic			Residential Traffic	Total New ^d
	Existing ^a	Proposed ^b	Net Commercial	Proposed ^c	
Weekday Daily (vpd)	996	1,269	273	427	700
Morning Peak Hour (vph)					
Entering	22	20	-2	6	4
Exiting	<u>10</u>	<u>12</u>	<u>2</u>	<u>23</u>	<u>25</u>
Total	32	32	0	29	29
Evening Peak Hour (vph)					
Entering	39	51	12	29	41
Exiting	<u>47</u>	<u>55</u>	<u>8</u>	<u>16</u>	<u>24</u>
Total	86	106	20	45	65
Saturday Daily (vpd)	1,374	1,818	444	136	580
Midday Peak Hour (vph)					
Entering	64	85	21	20	41
Exiting	<u>59</u>	<u>78</u>	<u>19</u>	<u>20</u>	<u>39</u>
Total	123	163	40	40	80

a ITE Trip Generation, 9th Edition, based on 4,788 sf of existing retail space (LUC 820) and 4,872 sf of existing office space (LUC 710)

b ITE Trip Generation, 9th Edition, based on 7,572 sf of proposed retail space (LUC 820)

c ITE Trip Generation, 9th Edition, based on 50 apartment units (LUC 220)

d Represents the sum of the net commercial traffic and the proposed residential traffic. For capacity analysis purposes, a pass-by rate of 25% was applied to the net increase in retail traffic.

vpd vehicles per day

vph vehicles per hour

As shown in Table 3, the proposed development is estimated to generate 29 site-generated trips (4 enter/25 exit) during the morning peak hour, 65 trips (41 enter/24 exit) during the evening peak hour, and 80 trips (41 enter/39 exit) during the Saturday midday peak hour. It should be noted that the trip generation projections summarized in Table 3 do not include any trip credits for the proximity of the site to public transit routes. As mentioned previously, four different bus routes are available and there are 27 bus stops within a half mile of the site, making it very accessible to/from public transportation and reducing residents' dependence on automobiles. As such, the projections summarized in Table 3 very likely overstate the site-generated vehicular traffic resulting from the proposed project.

Trip Distribution

The directional distribution of the traffic approaching and departing the site is a function of population densities, the location of employment, existing travel patterns, and the efficiency of the existing roadway system. Trips made from and to the proposed development during the peak hours are expected to be predominantly home-to-work and work-to-home trips in the morning and evening peak hours, respectively. Accordingly, the trip distribution for the proposed development was based on U.S. Census Journey-to-Work data for the City of Somerville, which was collected from the residential trip distribution evaluation completed for the Assembly Square PUD Traffic Impact and Access Study. Table 4 summarizes the trip distribution pattern used in the current analysis.

Table 4
Trip Distribution Summary

Travel Route	Direction (to/from)	Percent of New Site Generated Traffic Assigned to Route
Broadway	West	27%
Broadway	East	26%
Temple Street	North	47%
Total		100%

The site-generated traffic volumes were assigned to the roadway network according to the distribution and travel patterns described above, and added to the No-Build traffic volumes to develop the peak hour Build traffic volume networks. Because of the proposed site layout and the existing one-way pattern on Langmaid Avenue and Heath Street, which runs perpendicular to Langmaid Avenue, it is anticipated that a minimal amount of traffic would use the Langmaid Avenue site driveway, which only provides access to five parking spaces. As such, to provide a conservative assessment of the potential traffic increases on Temple Street, all of the site traffic was assumed to use the Temple Street site driveway. The trip distribution and the site generated traffic volumes are provided in the Attachments. Figures 6 and 7 present the resulting 2018 Build traffic volumes for the weekday morning and evening peak hours.

TRAFFIC OPERATIONS ANALYSIS

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic within the study area. To assess quality of flow, roadway capacity analyses were conducted with respect to existing conditions and projected No-Build and Build traffic volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed on them. Calculated levels of service classify roadway operating conditions.

Level of Service Criteria

Level of service (LOS) is the term used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. The level of service is only determined for left-turns from the main street and all movements from the minor street. The overall level of service designation is for the most critical movement, which is most often the left-turn out of the side street. The evaluation criteria used to analyze area intersections and roadways are based on the 2000 Highway Capacity Manual (HCM)².

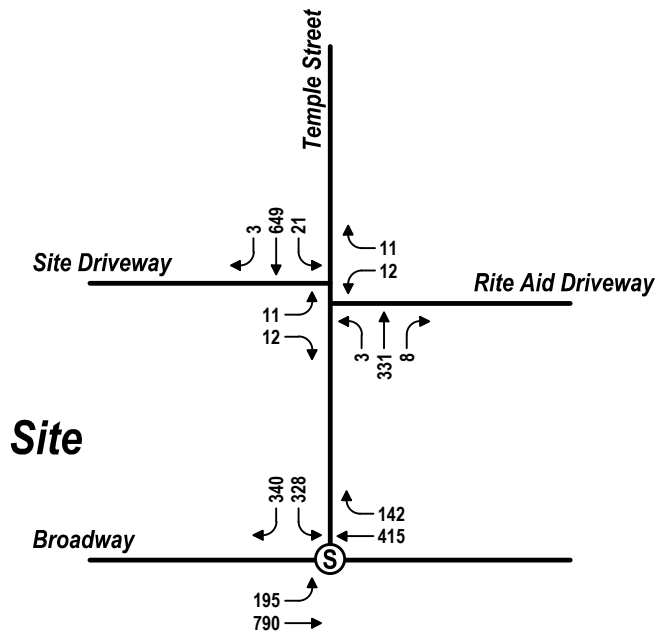
Intersection Capacity Analysis

Intersection capacity analyses were conducted at the three intersections in the study area. Analyses were conducted for the 2013 Existing, 2018 No-Build and 2018 Build conditions. Table 5 summarizes the results of the capacity analyses. The analysis worksheets are included in the Attachments.

² Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000.

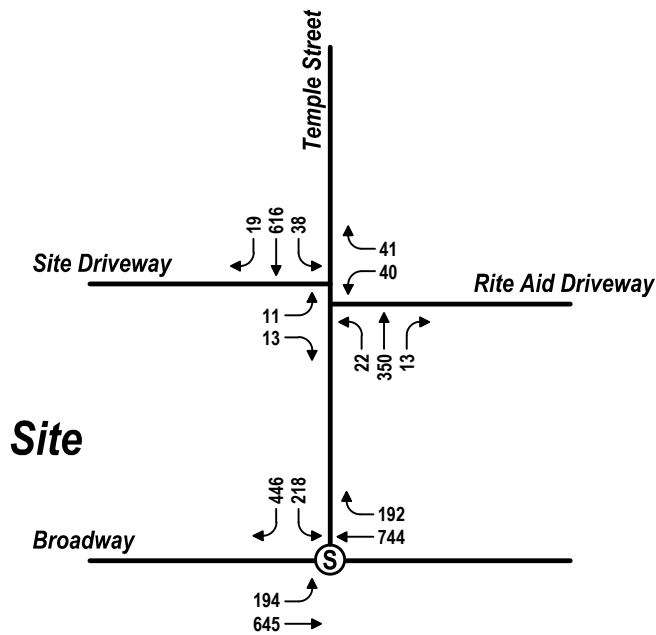
Weekday Morning Peak Hour

- Ⓢ Signalized Intersection
- neg Negligible



Weekday Evening Peak Hour

- Ⓢ Signalized Intersection
- neg Negligible



Vanasse Hangen Brustlin, Inc.

2018 Build Conditions
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

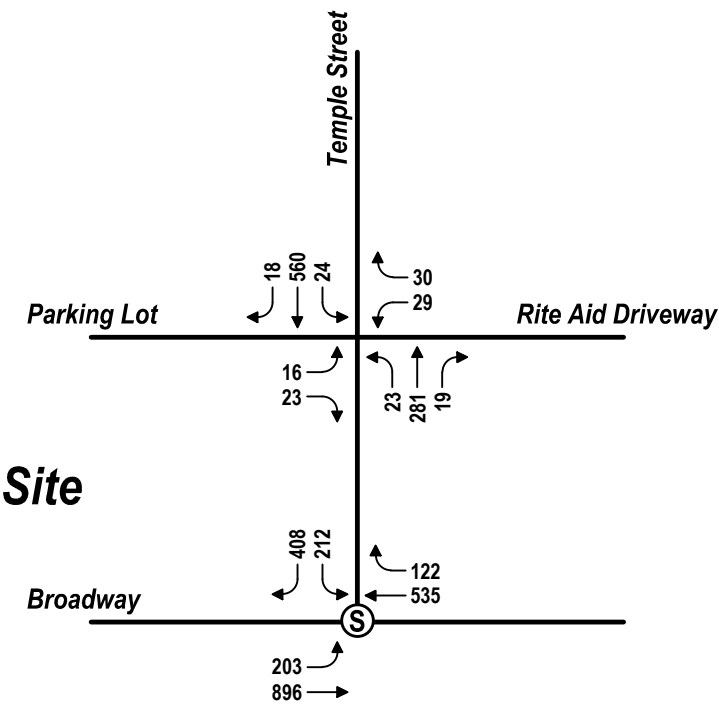
Figure 6



Not to Scale

Saturday Midday Peak Hour

Ⓢ Signalized Intersection
neg Negligible



Vanasse Hangen Brustlin, Inc.

2018 Build Conditions
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

Figure 7

Table 5
Intersection Capacity Analysis

Location/Peak Hour	2013 Existing			2018 No-Build			2018 Build		
	V/C ^a	Delay ^b	LOS ^c	Demand	Delay	LOS	Demand	Delay	LOS
Temple Street at Broadway									
Weekday Morning Peak Hour	0.59	15	B	0.64	15	B	0.65	16	B
Weekday Evening Peak Hour	0.51	14	B	0.61	16	B	0.62	16	B
Saturday Midday Peak Hour	0.51	12	B	0.58	14	B	0.59	14	B
	Demand ^d	Delay	LOS	Demand	Delay	LOS	Demand	Delay	LOS
Temple Street. at Site Driveway/Rite Aid									
Weekday Morning Peak Hour	21	18	C	23	20	C	NA	NA	NA
Weekday Evening Peak Hour	77	23	C	81	27	D	NA	NA	NA
Saturday Midday Peak Hour	3	19	C	3	20	C	NA	NA	NA
Temple Street. at Site Driveway									
Weekday Morning Peak Hour	NA	NA	NA	NA	NA	NA	23	18	C
Weekday Evening Peak Hour	NA	NA	NA	NA	NA	NA	24	20	C
Saturday Midday Peak Hour	NA	NA	NA	NA	NA	NA	39	16	C
Temple Street. at Rite Aid									
Weekday Morning Peak Hour	NA	NA	NA	NA	NA	NA	23	17	C
Weekday Evening Peak Hour	NA	NA	NA	NA	NA	NA	81	23	C
Saturday Midday Peak Hour	NA	NA	NA	NA	NA	NA	59	17	C

a. Volume to capacity ratio

b. Average Total Delay (seconds/vehicle).

c. Level-of-service.

d. Demand of critical movement.

NA Under Existing and No Build conditions, the Temple St./Site Drive/Rite Aid intersection was analyzed as a four-way intersection. Under Build conditions, the Site Drive will be relocated to the north and was analyzed as a separate intersection.

As shown in Table 5, the study area intersections currently operate at LOS C or better under existing conditions. Under Existing and No Build conditions, the Temple Street/Site Drive/Rite Aid intersection was analyzed as a four-way intersection. Under Build conditions, the Site Driveway will be relocated to the north and was analyzed as a separate intersection. Under future Build conditions, the study area intersections are expected to operate at LOS C or better. Overall, a comparison of the No-Build and Build operations indicates that the proposed development would not result in significant increases in delays at the study intersections.

CONCLUSIONS

This study evaluated the impacts associated with the proposed residential redevelopment to be located at the corner of Temple Street and Broadway in Somerville, Massachusetts. The proposed redevelopment involves the construction of a total of 50 apartment units and approximately 7,572 sf of retail space. As part of the project, approximately 9,660 sf of existing building area (4,788 sf of retail and 4,872 sf of office) will be demolished, resulting in a net reduction of 2,088 sf of commercial space.

Access to the site is proposed via two driveways; one on Temple Street just north of the existing parking area on the site, and a secondary driveway onto Langmaid Avenue. Under existing

conditions, access to the site is provided by a single driveway on Temple Street opposite the driveway for Rite Aid. Under proposed conditions, the site driveway will be shifted slightly to the north. Because of the proposed site layout and the existing one-way pattern on Langmaid Avenue and Heath Street, which runs perpendicular to Langmaid Avenue, it is anticipated that a minimal amount of traffic would use the Langmaid Avenue site driveway. As such, to provide a conservative assessment of the potential traffic increases on Temple Street, all of the site traffic was assumed to use the Temple Street site driveway.

The proposed residential development is projected to generate approximately 29 vehicles per hour (vph) (4 enter/25 exit) during the weekday morning peak hour, 65 vph (41 enter/24 exit) during the weekday evening peak hour, and 80 vph (41 enter/39 exit) during the Saturday midday peak hour. Detailed traffic analyses indicate that the study area intersections operate at acceptable levels of service under existing conditions and will continue to operate at similar levels in the 2018 No-Build and Build conditions. Overall, the study finds that the site generated traffic will have minimal effect on traffic operations within the study area and that the existing transportation infrastructure can adequately accommodate the traffic volumes projected to be generated by the proposed residential development.

Attachments

- **Traffic Count Data**
- **Background Traffic Volumes**
- **Trip Generation Calculations**
- **Trip Distribution**
- **Intersection Capacity Analysis**



Traffic Count Data

Temple Street
south of Sewell Street
City, State: Somerville, MA
Client: VHB / M. Kealey



133268 A Volume
Site Code: 81491.13

Start	NB		SB		Combined		21-Mar-13
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Thu
12:00	12	57	21	97	33	154	
12:15	12	67	22	84	34	151	
12:30	6	60	15	82	21	142	
12:45	7	52	14	97	21	149	596
01:00	1	50	14	111	15	161	
01:15	3	50	6	94	9	144	
01:30	5	39	15	91	20	130	
01:45	10	60	4	104	14	164	599
02:00	4	53	5	100	9	153	
02:15	5	62	5	120	10	182	
02:30	5	75	5	119	10	194	
02:45	1	82	4	123	5	205	734
03:00	3	68	3	126	6	194	
03:15	1	87	4	117	5	204	
03:30	1	81	7	101	8	182	
03:45	3	87	6	123	9	210	790
04:00	2	83	8	128	10	211	
04:15	2	84	7	130	9	214	
04:30	5	85	5	134	10	219	
04:45	3	91	5	129	8	220	864
05:00	11	82	18	142	29	224	
05:15	14	81	31	116	45	197	
05:30	14	82	46	124	60	206	
05:45	17	86	50	144	67	230	857
06:00	27	90	51	151	78	241	
06:15	32	69	55	152	87	221	
06:30	35	65	78	155	113	220	
06:45	43	58	96	143	139	201	883
07:00	52	64	93	140	145	204	
07:15	82	67	124	122	206	189	
07:30	72	72	143	108	215	180	
07:45	71	52	144	112	215	164	737
08:00	75	58	153	105	228	163	
08:15	85	51	130	83	215	134	
08:30	58	51	113	92	171	143	
08:45	46	40	106	95	152	135	575
09:00	53	45	95	87	148	132	
09:15	48	36	90	73	138	109	
09:30	50	38	107	86	157	124	
09:45	53	33	110	60	163	93	458
10:00	40	29	111	75	151	104	
10:15	38	30	97	58	135	88	
10:30	46	26	102	58	148	84	
10:45	58	26	124	36	182	62	338
11:00	62	19	86	51	148	70	
11:15	45	24	104	38	149	62	
11:30	38	19	108	49	146	68	
11:45	44	15	98	40	142	55	255
Total	1400	2781	2838	4905	4238	7686	
Percent	33.0%	36.2%	67.0%	63.8%			
Day Total		4181		7743		11924	
Peak	07:30	04:00	07:30	05:45	07:30	05:45	
Vol.	303	343	570	602	873	912	
P.H.F.	0.891	0.942	0.931	0.971	0.957	0.946	



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N: Temple Street
E/W: Broadway
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 A
Site Code : 81491.13
Start Date : 3/20/2013
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Groups Printed- Cars - Heavy Vehicles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
07:00 AM	58	33	0	10	55	0	105	36	0	297
07:15 AM	62	49	0	22	74	0	127	43	0	377
07:30 AM	76	69	0	25	92	0	122	52	0	436
07:45 AM	88	72	0	34	84	0	146	50	0	474
Total	284	223	0	91	305	0	500	181	0	1584
08:00 AM	75	79	0	40	91	0	132	48	0	465
08:15 AM	79	85	0	32	81	0	164	43	0	484
08:30 AM	72	67	0	27	72	0	192	42	0	472
08:45 AM	83	56	0	20	65	0	180	46	0	450
Total	309	287	0	119	309	0	668	179	0	1871
Grand Total	593	510	0	210	614	0	1168	360	0	3455
Apprch %	53.8	46.2	0	25.5	74.5	0	76.4	23.6	0	
Total %	17.2	14.8	0	6.1	17.8	0	33.8	10.4	0	
Cars	579	502	0	203	559	0	1120	358	0	3321
% Cars	97.6	98.4	0	96.7	91	0	95.9	99.4	0	96.1
Heavy Vehicles	14	8	0	7	55	0	48	2	0	134
% Heavy Vehicles	2.4	1.6	0	3.3	9	0	4.1	0.6	0	3.9

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	88	72	0	160	34	84	0	118	146	50	0	196	474
08:00 AM	75	79	0	154	40	91	0	131	132	48	0	180	465
08:15 AM	79	85	0	164	32	81	0	113	164	43	0	207	484
08:30 AM	72	67	0	139	27	72	0	99	192	42	0	234	472
Total Volume	314	303	0	617	133	328	0	461	634	183	0	817	1895
% App. Total	50.9	49.1	0		28.9	71.1	0		77.6	22.4	0		
PHF	.892	.891	.000	.941	.831	.901	.000	.880	.826	.915	.000	.873	.979
Cars	308	300	0	608	130	302	0	432	609	181	0	790	1830
% Cars	98.1	99.0	0	98.5	97.7	92.1	0	93.7	96.1	98.9	0	96.7	96.6
Heavy Vehicles	6	3	0	9	3	26	0	29	25	2	0	27	65
% Heavy Vehicles	1.9	1.0	0	1.5	2.3	7.9	0	6.3	3.9	1.1	0	3.3	3.4



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Groups Printed- Cars

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
07:00 AM	56	32	0	9	46	0	101	36	0	280
07:15 AM	60	48	0	19	68	0	122	43	0	360
07:30 AM	75	67	0	25	83	0	117	52	0	419
07:45 AM	86	72	0	33	78	0	140	50	0	459
Total	277	219	0	86	275	0	480	181	0	1518
08:00 AM	74	79	0	38	82	0	130	47	0	450
08:15 AM	78	83	0	32	73	0	153	43	0	462
08:30 AM	70	66	0	27	69	0	186	41	0	459
08:45 AM	80	55	0	20	60	0	171	46	0	432
Total	302	283	0	117	284	0	640	177	0	1803
Grand Total	579	502	0	203	559	0	1120	358	0	3321
Apprch %	53.6	46.4	0	26.6	73.4	0	75.8	24.2	0	
Total %	17.4	15.1	0	6.1	16.8	0	33.7	10.8	0	

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	86	72	0	158	33	78	0	111	140	50	0	190	459
08:00 AM	74	79	0	153	38	82	0	120	130	47	0	177	450
08:15 AM	78	83	0	161	32	73	0	105	153	43	0	196	462
08:30 AM	70	66	0	136	27	69	0	96	186	41	0	227	459
Total Volume	308	300	0	608	130	302	0	432	609	181	0	790	1830
% App. Total	50.7	49.3	0		30.1	69.9	0		77.1	22.9	0		
PHF	.895	.904	.000	.944	.855	.921	.000	.900	.819	.905	.000	.870	.990



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Groups Printed- Heavy Vehicles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
07:00 AM	2	1	0	1	9	0	4	0	0	17
07:15 AM	2	1	0	3	6	0	5	0	0	17
07:30 AM	1	2	0	0	9	0	5	0	0	17
07:45 AM	2	0	0	1	6	0	6	0	0	15
Total	7	4	0	5	30	0	20	0	0	66
08:00 AM	1	0	0	2	9	0	2	1	0	15
08:15 AM	1	2	0	0	8	0	11	0	0	22
08:30 AM	2	1	0	0	3	0	6	1	0	13
08:45 AM	3	1	0	0	5	0	9	0	0	18
Total	7	4	0	2	25	0	28	2	0	68
Grand Total	14	8	0	7	55	0	48	2	0	134
Apprch %	63.6	36.4	0	11.3	88.7	0	96	4	0	
Total %	10.4	6	0	5.2	41	0	35.8	1.5	0	

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	1	2	0	3	0	9	0	9	5	0	0	5	17
07:45 AM	2	0	0	2	1	6	0	7	6	0	0	6	15
08:00 AM	1	0	0	1	2	9	0	11	2	1	0	3	15
08:15 AM	1	2	0	3	0	8	0	8	11	0	0	11	22
Total Volume	5	4	0	9	3	32	0	35	24	1	0	25	69
% App. Total	55.6	44.4	0		8.6	91.4	0		96	4	0		
PHF	.625	.500	.000	.750	.375	.889	.000	.795	.545	.250	.000	.568	.784



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Groups Printed- Peds and Bicycles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
07:00 AM	0	0	1	0	0	7	0	0	0	8
07:15 AM	0	0	5	0	0	10	0	0	3	18
07:30 AM	0	0	3	0	0	13	0	0	1	17
07:45 AM	0	0	2	0	0	9	0	0	0	11
Total	0	0	11	0	0	39	0	0	4	54
08:00 AM	0	0	3	0	0	6	1	0	3	13
08:15 AM	0	1	6	0	0	12	0	0	5	24
08:30 AM	0	0	3	0	0	4	1	0	1	9
08:45 AM	0	0	8	1	0	11	1	1	3	25
Total	0	1	20	1	0	33	3	1	12	71
Grand Total	0	1	31	1	0	72	3	1	16	125
Apprch %	0	3.1	96.9	1.4	0	98.6	15	5	80	
Total %	0	0.8	24.8	0.8	0	57.6	2.4	0.8	12.8	

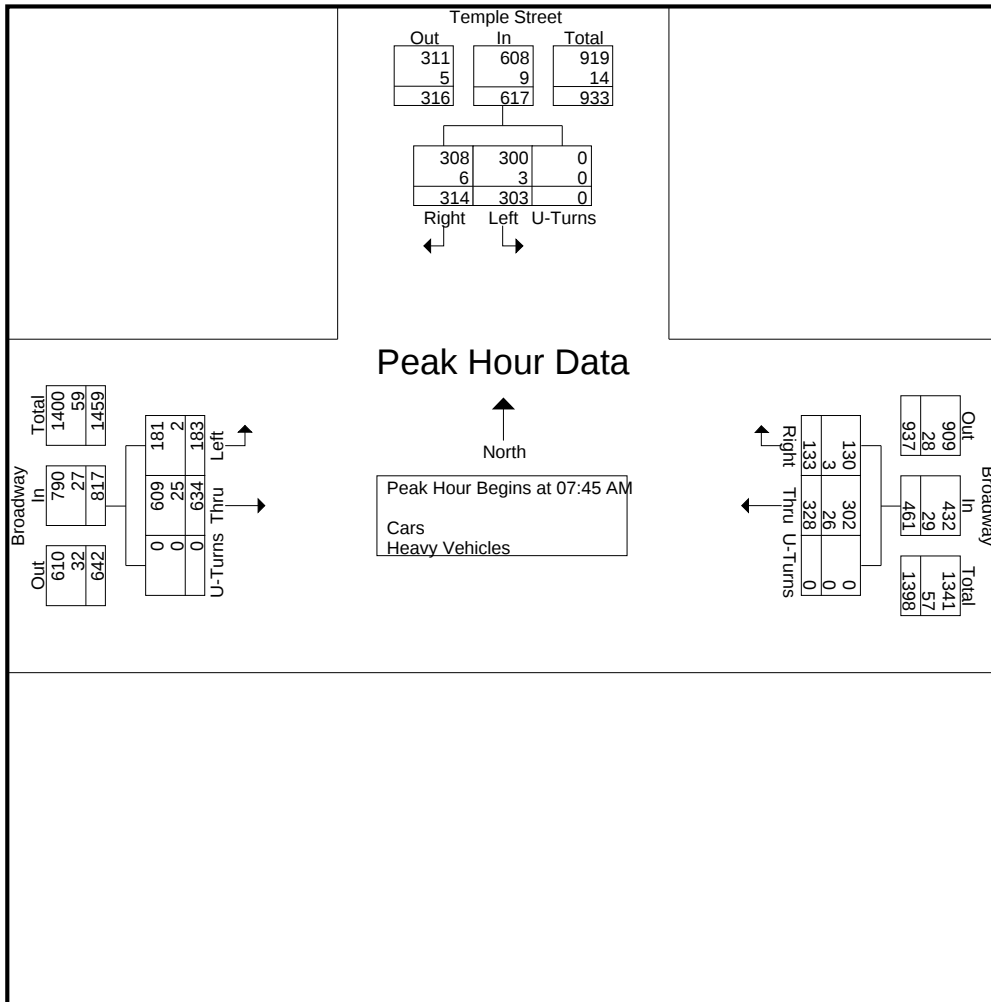
	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	3	3	0	0	6	6	1	0	3	4	13
08:15 AM	0	1	6	7	0	0	12	12	0	0	5	5	24
08:30 AM	0	0	3	3	0	0	4	4	1	0	1	2	9
08:45 AM	0	0	8	8	1	0	11	12	1	1	3	5	25
Total Volume	0	1	20	21	1	0	33	34	3	1	12	16	71
% App. Total	0	4.8	95.2		2.9	0	97.1		18.8	6.2	75		
PHF	.000	.250	.625	.656	.250	.000	.688	.708	.750	.250	.600	.800	.710

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	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	88	72	0	160	34	84	0	118	146	50	0	196	474
08:00 AM	75	79	0	154	40	91	0	131	132	48	0	180	465
08:15 AM	79	85	0	164	32	81	0	113	164	43	0	207	484
08:30 AM	72	67	0	139	27	72	0	99	192	42	0	234	472
Total Volume	314	303	0	617	133	328	0	461	634	183	0	817	1895
% App. Total	50.9	49.1	0		28.9	71.1	0		77.6	22.4	0		
PHF	.892	.891	.000	.941	.831	.901	.000	.880	.826	.915	.000	.873	.979
Cars	308	300	0	608	130	302	0	432	609	181	0	790	1830
% Cars	98.1	99.0	0	98.5	97.7	92.1	0	93.7	96.1	98.9	0	96.7	96.6
Heavy Vehicles	6	3	0	9	3	26	0	29	25	2	0	27	65
% Heavy Vehicles	1.9	1.0	0	1.5	2.3	7.9	0	6.3	3.9	1.1	0	3.3	3.4





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File Name : 133268 AA
Site Code : 81491.13
Start Date : 3/20/2013
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Groups Printed- Cars - Heavy Vehicles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
04:00 PM	72	37	0	51	89	0	124	25	0	398
04:15 PM	70	54	0	34	110	0	119	47	0	434
04:30 PM	104	45	0	41	125	0	135	48	0	498
04:45 PM	98	39	0	45	135	0	104	35	0	456
Total	344	175	0	171	459	0	482	155	0	1786
05:00 PM	100	44	0	48	120	0	110	43	0	465
05:15 PM	105	53	0	45	138	0	122	47	0	510
05:30 PM	106	44	0	40	138	0	134	40	0	502
05:45 PM	104	58	0	34	149	0	125	37	0	507
Total	415	199	0	167	545	0	491	167	0	1984
Grand Total	759	374	0	338	1004	0	973	322	0	3770
Apprch %	67	33	0	25.2	74.8	0	75.1	24.9	0	
Total %	20.1	9.9	0	9	26.6	0	25.8	8.5	0	
Cars	754	369	0	333	963	0	928	319	0	3666
% Cars	99.3	98.7	0	98.5	95.9	0	95.4	99.1	0	97.2
Heavy Vehicles	5	5	0	5	41	0	45	3	0	104
% Heavy Vehicles	0.7	1.3	0	1.5	4.1	0	4.6	0.9	0	2.8

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	100	44	0	144	48	120	0	168	110	43	0	153	465
05:15 PM	105	53	0	158	45	138	0	183	122	47	0	169	510
05:30 PM	106	44	0	150	40	138	0	178	134	40	0	174	502
05:45 PM	104	58	0	162	34	149	0	183	125	37	0	162	507
Total Volume	415	199	0	614	167	545	0	712	491	167	0	658	1984
% App. Total	67.6	32.4	0		23.5	76.5	0		74.6	25.4	0		
PHF	.979	.858	.000	.948	.870	.914	.000	.973	.916	.888	.000	.945	.973
Cars	411	197	0	608	164	526	0	690	470	167	0	637	1935
% Cars	99.0	99.0	0	99.0	98.2	96.5	0	96.9	95.7	100	0	96.8	97.5
Heavy Vehicles	4	2	0	6	3	19	0	22	21	0	0	21	49
% Heavy Vehicles	1.0	1.0	0	1.0	1.8	3.5	0	3.1	4.3	0	0	3.2	2.5



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Groups Printed- Cars

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
04:00 PM	72	36	0	50	85	0	116	25	0	384
04:15 PM	70	52	0	34	102	0	115	45	0	418
04:30 PM	104	45	0	40	121	0	128	48	0	486
04:45 PM	97	39	0	45	129	0	99	34	0	443
Total	343	172	0	169	437	0	458	152	0	1731
05:00 PM	98	43	0	46	116	0	103	43	0	449
05:15 PM	104	53	0	44	133	0	118	47	0	499
05:30 PM	106	44	0	40	134	0	129	40	0	493
05:45 PM	103	57	0	34	143	0	120	37	0	494
Total	411	197	0	164	526	0	470	167	0	1935
Grand Total	754	369	0	333	963	0	928	319	0	3666
Apprch %	67.1	32.9	0	25.7	74.3	0	74.4	25.6	0	
Total %	20.6	10.1	0	9.1	26.3	0	25.3	8.7	0	

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	98	43	0	141	46	116	0	162	103	43	0	146	449
05:15 PM	104	53	0	157	44	133	0	177	118	47	0	165	499
05:30 PM	106	44	0	150	40	134	0	174	129	40	0	169	493
05:45 PM	103	57	0	160	34	143	0	177	120	37	0	157	494
Total Volume	411	197	0	608	164	526	0	690	470	167	0	637	1935
% App. Total	67.6	32.4	0		23.8	76.2	0		73.8	26.2	0		
PHF	.969	.864	.000	.950	.891	.920	.000	.975	.911	.888	.000	.942	.969



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Groups Printed- Heavy Vehicles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
04:00 PM	0	1	0	1	4	0	8	0	0	14
04:15 PM	0	2	0	0	8	0	4	2	0	16
04:30 PM	0	0	0	1	4	0	7	0	0	12
04:45 PM	1	0	0	0	6	0	5	1	0	13
Total	1	3	0	2	22	0	24	3	0	55
05:00 PM	2	1	0	2	4	0	7	0	0	16
05:15 PM	1	0	0	1	5	0	4	0	0	11
05:30 PM	0	0	0	0	4	0	5	0	0	9
05:45 PM	1	1	0	0	6	0	5	0	0	13
Total	4	2	0	3	19	0	21	0	0	49
Grand Total	5	5	0	5	41	0	45	3	0	104
Apprch %	50	50	0	10.9	89.1	0	93.8	6.2	0	
Total %	4.8	4.8	0	4.8	39.4	0	43.3	2.9	0	

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	0	2	0	2	0	8	0	8	4	2	0	6	16
04:30 PM	0	0	0	0	1	4	0	5	7	0	0	7	12
04:45 PM	1	0	0	1	0	6	0	6	5	1	0	6	13
05:00 PM	2	1	0	3	2	4	0	6	7	0	0	7	16
Total Volume	3	3	0	6	3	22	0	25	23	3	0	26	57
% App. Total	50	50	0		12	88	0		88.5	11.5	0		
PHF	.375	.375	.000	.500	.375	.688	.000	.781	.821	.375	.000	.929	.891



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Groups Printed- Peds and Bicycles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
04:00 PM	0	0	8	0	0	10	0	0	0	18
04:15 PM	0	0	7	0	1	9	0	0	0	17
04:30 PM	0	0	8	0	0	6	0	0	0	14
04:45 PM	0	0	5	0	0	7	0	0	0	12
Total	0	0	28	0	1	32	0	0	0	61
05:00 PM	0	0	15	0	0	4	0	0	0	19
05:15 PM	0	0	1	0	0	3	0	0	1	5
05:30 PM	0	0	5	0	0	8	1	0	0	14
05:45 PM	0	0	9	0	0	8	1	0	1	19
Total	0	0	30	0	0	23	2	0	2	57
Grand Total	0	0	58	0	1	55	2	0	2	118
Apprch %	0	0	100	0	1.8	98.2	50	0	50	
Total %	0	0	49.2	0	0.8	46.6	1.7	0	1.7	

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	0	0	7	7	0	1	9	10	0	0	0	0	17
04:30 PM	0	0	8	8	0	0	6	6	0	0	0	0	14
04:45 PM	0	0	5	5	0	0	7	7	0	0	0	0	12
05:00 PM	0	0	15	15	0	0	4	4	0	0	0	0	19
Total Volume	0	0	35	35	0	1	26	27	0	0	0	0	62
% App. Total	0	0	100		0	3.7	96.3		0	0	0		
PHF	.000	.000	.583	.583	.000	.250	.722	.675	.000	.000	.000	.000	.816



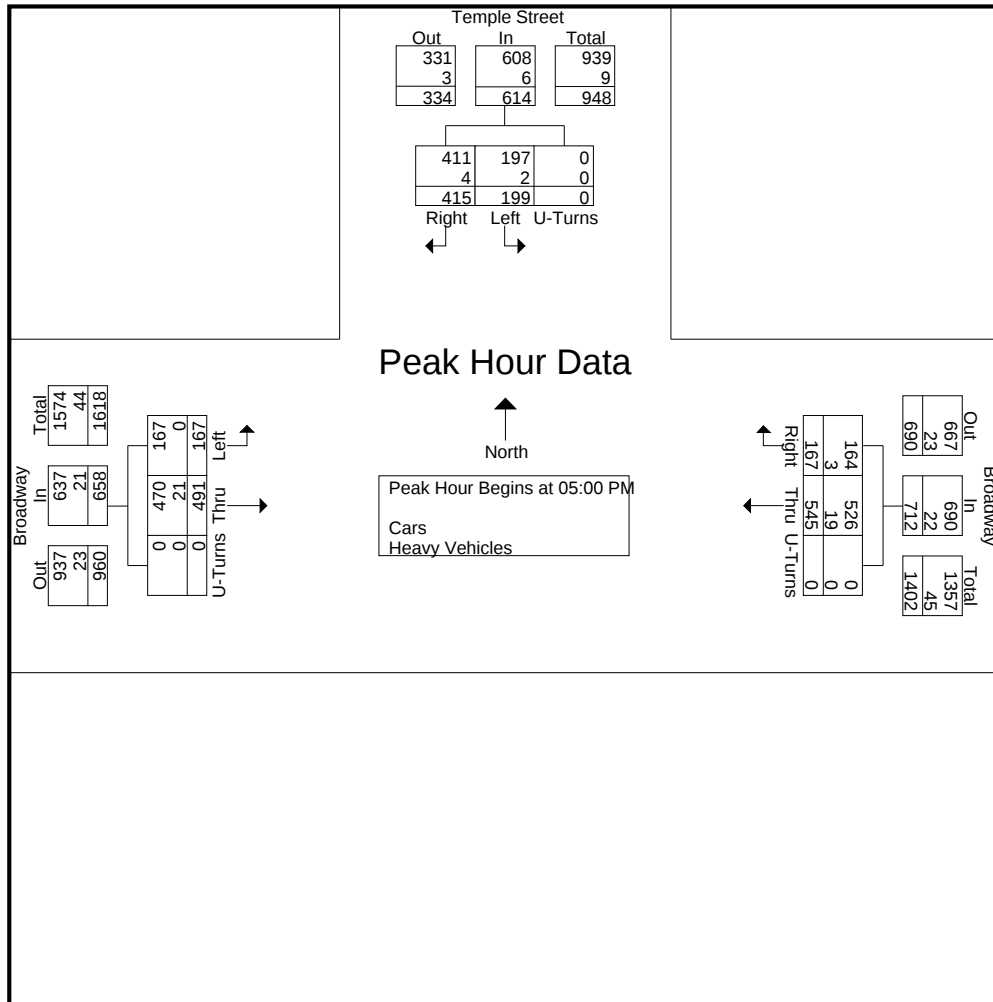
PRECISION
DATA
INDUSTRIES, LLC

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Temple Street
E/W: Broadway
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 AA
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	100	44	0	144	48	120	0	168	110	43	0	153	465
05:15 PM	105	53	0	158	45	138	0	183	122	47	0	169	510
05:30 PM	106	44	0	150	40	138	0	178	134	40	0	174	502
05:45 PM	104	58	0	162	34	149	0	183	125	37	0	162	507
Total Volume	415	199	0	614	167	545	0	712	491	167	0	658	1984
% App. Total	67.6	32.4	0		23.5	76.5	0		74.6	25.4	0		
PHF	.979	.858	.000	.948	.870	.914	.000	.973	.916	.888	.000	.945	.973
Cars	411	197	0	608	164	526	0	690	470	167	0	637	1935
% Cars	99.0	99.0	0	99.0	98.2	96.5	0	96.9	95.7	100	0	96.8	97.5
Heavy Vehicles	4	2	0	6	3	19	0	22	21	0	0	21	49
% Heavy Vehicles	1.0	1.0	0	1.0	1.8	3.5	0	3.1	4.3	0	0	3.2	2.5





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N/S: Temple Street
E: Rite Aid Driveway W: Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 B
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Int. Total
07:00 AM	0	90	3	0	3	2	2	0	1	46	0	0	0	0	0	0	147
07:15 AM	0	111	1	0	1	0	1	0	1	65	0	0	0	0	0	0	180
07:30 AM	0	145	2	0	2	0	0	0	0	77	0	0	0	0	0	0	226
07:45 AM	0	159	5	0	0	0	4	0	1	83	0	0	0	0	0	0	252
Total	0	505	11	0	6	2	7	0	3	271	0	0	0	0	0	0	805
08:00 AM	2	152	2	0	6	0	1	0	1	86	1	0	0	0	0	0	251
08:15 AM	0	162	11	0	2	0	2	0	2	74	0	0	1	0	0	0	254
08:30 AM	0	137	2	0	2	0	4	0	4	70	1	0	0	0	0	0	220
08:45 AM	1	134	3	0	0	0	3	0	1	62	0	0	0	0	0	0	204
Total	3	585	18	0	10	0	10	0	8	292	2	0	1	0	0	0	929
Grand Total	3	1090	29	0	16	2	17	0	11	563	2	0	1	0	0	0	1734
Apprch %	0.3	97.1	2.6	0	45.7	5.7	48.6	0	1.9	97.7	0.3	0	100	0	0	0	
Total %	0.2	62.9	1.7	0	0.9	0.1	1	0	0.6	32.5	0.1	0	0.1	0	0	0	
Cars	3	1070	29	0	16	2	16	0	11	553	2	0	1	0	0	0	1703
% Cars	100	98.2	100	0	100	100	94.1	0	100	98.2	100	0	100	0	0	0	98.2
Heavy Vehicles	0	20	0	0	0	0	1	0	0	10	0	0	0	0	0	0	31
% Heavy Vehicles	0	1.8	0	0	0	0	5.9	0	0	1.8	0	0	0	0	0	0	1.8

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	145	2	0	147	2	0	0	0	2	0	77	0	0	77	0	0	0	0	0	226
07:45 AM	0	159	5	0	164	0	0	4	0	4	1	83	0	0	84	0	0	0	0	0	252
08:00 AM	2	152	2	0	156	6	0	1	0	7	1	86	1	0	88	0	0	0	0	0	251
08:15 AM	0	162	11	0	173	2	0	2	0	4	2	74	0	0	76	1	0	0	0	1	254
Total Volume	2	618	20	0	640	10	0	7	0	17	4	320	1	0	325	1	0	0	0	1	983
% App. Total	0.3	96.6	3.1	0		58.8	0	41.2	0		1.2	98.5	0.3	0		100	0	0	0		
PHF	.250	.954	.455	.000	.925	.417	.000	.438	.000	.607	.500	.930	.250	.000	.923	.250	.000	.000	.000	.250	.968
Cars	2	610	20	0	632	10	0	7	0	17	4	315	1	0	320	1	0	0	0	1	970
% Cars	100	98.7	100	0	98.8	100	0	100	0	100	100	98.4	100	0	98.5	100	0	0	0	100	98.7
Heavy Vehicles	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13
% Heavy Vehicles	0	1.3	0	0	1.3	0	0	0	0	0	0	1.6	0	0	1.5	0	0	0	0	0	1.3



PRECISION
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N/S: Temple Street
E: Rite Aid Driveway W: Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 B
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

Groups Printed- Cars

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	
07:00 AM	0	88	3	0	3	2	1	0	1	45	0	0	0	0	0	0	143
07:15 AM	0	108	1	0	1	0	1	0	1	62	0	0	0	0	0	0	174
07:30 AM	0	142	2	0	2	0	0	0	0	77	0	0	0	0	0	0	223
07:45 AM	0	158	5	0	0	0	4	0	1	82	0	0	0	0	0	0	250
Total	0	496	11	0	6	2	6	0	3	266	0	0	0	0	0	0	790
08:00 AM	2	150	2	0	6	0	1	0	1	82	1	0	0	0	0	0	245
08:15 AM	0	160	11	0	2	0	2	0	2	74	0	0	1	0	0	0	252
08:30 AM	0	134	2	0	2	0	4	0	4	69	1	0	0	0	0	0	216
08:45 AM	1	130	3	0	0	0	3	0	1	62	0	0	0	0	0	0	200
Total	3	574	18	0	10	0	10	0	8	287	2	0	1	0	0	0	913
Grand Total	3	1070	29	0	16	2	16	0	11	553	2	0	1	0	0	0	1703
Apprch %	0.3	97.1	2.6	0	47.1	5.9	47.1	0	1.9	97.7	0.4	0	100	0	0	0	
Total %	0.2	62.8	1.7	0	0.9	0.1	0.9	0	0.6	32.5	0.1	0	0.1	0	0	0	

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					Int. Total
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	142	2	0	144	2	0	0	0	2	0	77	0	0	77	0	0	0	0	0	223
07:45 AM	0	158	5	0	163	0	0	4	0	4	1	82	0	0	83	0	0	0	0	0	250
08:00 AM	2	150	2	0	154	6	0	1	0	7	1	82	1	0	84	0	0	0	0	0	245
08:15 AM	0	160	11	0	171	2	0	2	0	4	2	74	0	0	76	1	0	0	0	1	252
Total Volume	2	610	20	0	632	10	0	7	0	17	4	315	1	0	320	1	0	0	0	1	970
% App. Total	0.3	96.5	3.2	0		58.8	0	41.2	0		1.2	98.4	0.3	0		100	0	0	0		
PHF	.250	.953	.455	.000	.924	.417	.000	.438	.000	.607	.500	.960	.250	.000	.952	.250	.000	.000	.000	.250	.962



PRECISION
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N/S: Temple Street
E: Rite Aid Driveway W: Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 B
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

Groups Printed- Heavy Vehicles

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	
07:00 AM	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4
07:15 AM	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6
07:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
07:45 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Total	0	9	0	0	0	0	1	0	0	5	0	0	0	0	0	0	15
08:00 AM	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	0	6
08:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:30 AM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
08:45 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	11	0	0	0	0	0	0	0	5	0	0	0	0	0	0	16
Grand Total	0	20	0	0	0	0	1	0	0	10	0	0	0	0	0	0	31
Apprch %	0	100	0	0	0	0	100	0	0	100	0	0	0	0	0	0	
Total %	0	64.5	0	0	0	0	3.2	0	0	32.3	0	0	0	0	0	0	

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					Int. Total
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
07:30 AM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
07:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
08:00 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
Total Volume	0	9	0	0	9	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	17
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.708



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E: Rite Aid Driveway W: Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 B
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

Groups Printed- Peds and Bicycles

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	4	0	0	0	5	0	0	0	0	0	0	0	8	17
07:15 AM	0	0	0	2	0	0	0	7	0	0	0	0	0	0	0	8	17
07:30 AM	0	0	0	1	1	0	0	14	0	0	0	0	0	0	0	9	25
07:45 AM	0	1	0	0	0	0	0	26	0	0	0	1	0	0	0	6	34
Total	0	1	0	7	1	0	0	52	0	0	0	1	0	0	0	31	93
08:00 AM	0	1	0	1	0	0	0	10	0	0	0	0	0	0	0	2	14
08:15 AM	0	0	0	6	0	0	0	10	0	0	0	1	0	0	0	10	27
08:30 AM	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	5	17
08:45 AM	0	0	0	1	0	0	0	8	0	2	0	1	0	0	0	9	21
Total	0	1	0	8	0	0	0	40	0	2	0	2	0	0	0	26	79
Grand Total	0	2	0	15	1	0	0	92	0	2	0	3	0	0	0	57	172
Apprch %	0	11.8	0	88.2	1.1	0	0	98.9	0	40	0	60	0	0	0	100	
Total %	0	1.2	0	8.7	0.6	0	0	53.5	0	1.2	0	1.7	0	0	0	33.1	

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	1	1	1	0	0	14	15	0	0	0	0	0	0	0	0	9	9	25
07:45 AM	0	1	0	0	1	0	0	0	26	26	0	0	0	1	1	0	0	0	6	6	34
08:00 AM	0	1	0	1	2	0	0	0	10	10	0	0	0	0	0	0	0	0	2	2	14
08:15 AM	0	0	0	6	6	0	0	0	10	10	0	0	0	1	1	0	0	0	10	10	27
Total Volume	0	2	0	8	10	1	0	0	60	61	0	0	0	2	2	0	0	0	27	27	100
% App. Total	0	20	0	80		1.6	0	0	98.4		0	0	0	100		0	0	0	100		
PHF	.000	.500	.000	.333	.417	.250	.000	.000	.577	.587	.000	.000	.000	.500	.500	.000	.000	.000	.675	.675	.735



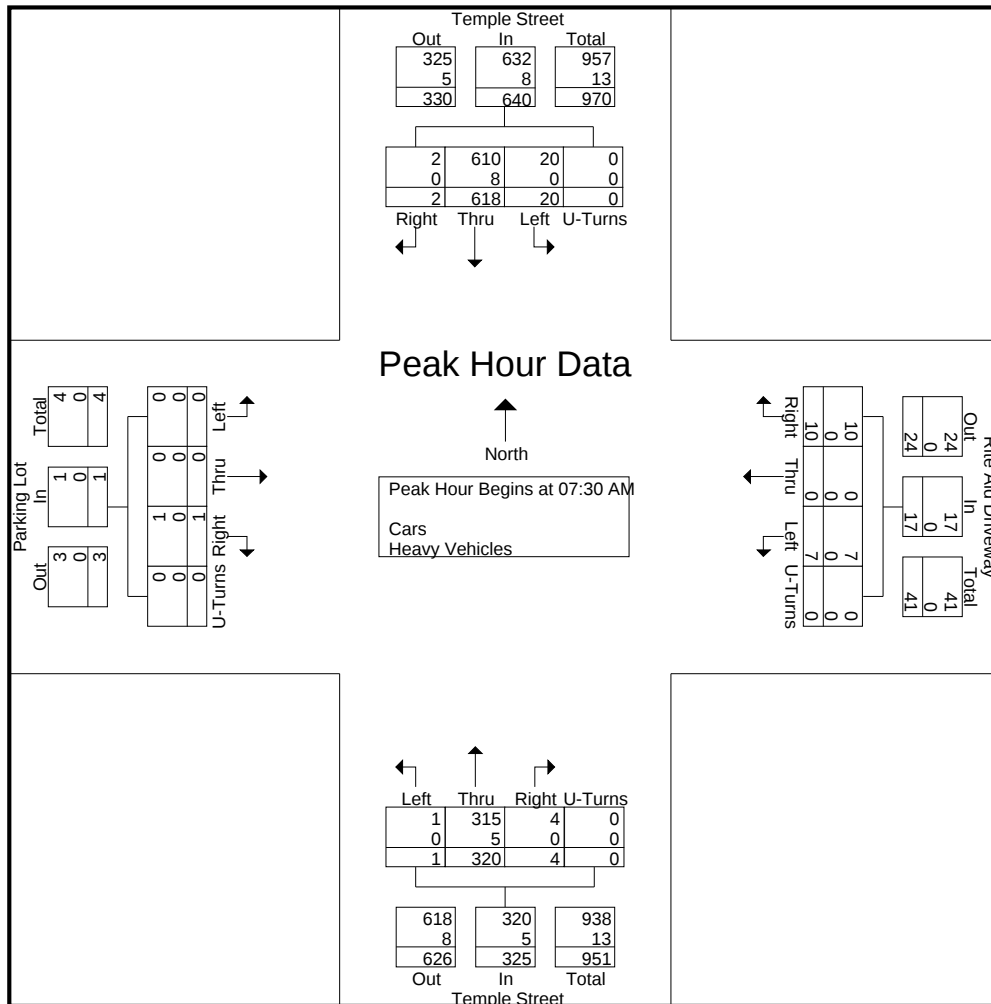
PRECISION
D A T A
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N/S: Temple Street
E: Rite Aid Driveway W: Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 B
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	145	2	0	147	2	0	0	0	2	0	77	0	0	77	0	0	0	0	0	226
07:45 AM	0	159	5	0	164	0	0	4	0	4	1	83	0	0	84	0	0	0	0	0	252
08:00 AM	2	152	2	0	156	6	0	1	0	7	1	86	1	0	88	0	0	0	0	0	251
08:15 AM	0	162	11	0	173	2	0	2	0	4	2	74	0	0	76	1	0	0	0	1	254
Total Volume	2	618	20	0	640	10	0	7	0	17	4	320	1	0	325	1	0	0	0	1	983
% App. Total	0.3	96.6	3.1	0		58.8	0	41.2	0		1.2	98.5	0.3	0		100	0	0	0		
PHF	.250	.954	.455	.000	.925	.417	.000	.438	.000	.607	.500	.930	.250	.000	.923	.250	.000	.000	.000	.250	.968
Cars	2	610	20	0	632	10	0	7	0	17	4	315	1	0	320	1	0	0	0	1	970
% Cars	100	98.7	100	0	98.8	100	0	100	0	100	100	98.4	100	0	98.5	100	0	0	0	100	98.7
Heavy Vehicles	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13
% Heavy Vehicles	0	1.3	0	0	1.3	0	0	0	0	0	0	1.6	0	0	1.5	0	0	0	0	0	1.3





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File Name : 133268 BB
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Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Int. Total
04:00 PM	2	106	10	0	8	0	7	0	1	79	0	0	1	0	0	0	214
04:15 PM	0	119	8	0	8	0	6	0	7	72	0	0	0	0	0	0	220
04:30 PM	1	124	7	0	7	0	11	0	6	86	1	0	1	0	0	0	244
04:45 PM	0	129	7	2	10	0	7	0	2	82	0	0	1	0	0	0	240
Total	3	478	32	2	33	0	31	0	16	319	1	0	3	0	0	0	918
05:00 PM	0	131	8	0	11	0	7	0	1	89	1	0	0	0	0	0	248
05:15 PM	0	159	10	0	6	0	9	0	3	92	1	0	0	0	0	0	280
05:30 PM	0	134	11	0	11	0	9	0	5	74	0	0	0	0	0	0	244
05:45 PM	1	156	7	0	11	0	13	0	3	67	0	0	1	0	0	0	259
Total	1	580	36	0	39	0	38	0	12	322	2	0	1	0	0	0	1031
Grand Total	4	1058	68	2	72	0	69	0	28	641	3	0	4	0	0	0	1949
Apprch %	0.4	93.5	6	0.2	51.1	0	48.9	0	4.2	95.4	0.4	0	100	0	0	0	
Total %	0.2	54.3	3.5	0.1	3.7	0	3.5	0	1.4	32.9	0.2	0	0.2	0	0	0	
Cars	4	1049	68	0	72	0	69	0	28	634	3	0	4	0	0	0	1931
% Cars	100	99.1	100	0	100	0	100	0	100	98.9	100	0	100	0	0	0	99.1
Heavy Vehicles	0	9	0	2	0	0	0	0	0	7	0	0	0	0	0	0	18
% Heavy Vehicles	0	0.9	0	100	0	0	0	0	0	1.1	0	0	0	0	0	0	0.9

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	131	8	0	139	11	0	7	0	18	1	89	1	0	91	0	0	0	0	0	248
05:15 PM	0	159	10	0	169	6	0	9	0	15	3	92	1	0	96	0	0	0	0	0	280
05:30 PM	0	134	11	0	145	11	0	9	0	20	5	74	0	0	79	0	0	0	0	0	244
05:45 PM	1	156	7	0	164	11	0	13	0	24	3	67	0	0	70	1	0	0	0	1	259
Total Volume	1	580	36	0	617	39	0	38	0	77	12	322	2	0	336	1	0	0	0	1	1031
% App. Total	0.2	94	5.8	0		50.6	0	49.4	0		3.6	95.8	0.6	0		100	0	0	0		
PHF	.250	.912	.818	.000	.913	.886	.000	.731	.000	.802	.600	.875	.500	.000	.875	.250	.000	.000	.000	.250	.921
Cars	1	575	36	0	612	39	0	38	0	77	12	320	2	0	334	1	0	0	0	1	1024
% Cars	100	99.1	100	0	99.2	100	0	100	0	100	100	99.4	100	0	99.4	100	0	0	0	100	99.3
Heavy Vehicles	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
% Heavy Vehicles	0	0.9	0	0	0.8	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	0.7



PRECISION
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N/S: Temple Street
E: Rite Aid Driveway W: Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 BB
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

Groups Printed- Cars

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	
04:00 PM	2	105	10	0	8	0	7	0	1	78	0	0	1	0	0	0	212
04:15 PM	0	118	8	0	8	0	6	0	7	70	0	0	0	0	0	0	217
04:30 PM	1	124	7	0	7	0	11	0	6	85	1	0	1	0	0	0	243
04:45 PM	0	127	7	0	10	0	7	0	2	81	0	0	1	0	0	0	235
Total	3	474	32	0	33	0	31	0	16	314	1	0	3	0	0	0	907
05:00 PM	0	129	8	0	11	0	7	0	1	88	1	0	0	0	0	0	245
05:15 PM	0	158	10	0	6	0	9	0	3	91	1	0	0	0	0	0	278
05:30 PM	0	134	11	0	11	0	9	0	5	74	0	0	0	0	0	0	244
05:45 PM	1	154	7	0	11	0	13	0	3	67	0	0	1	0	0	0	257
Total	1	575	36	0	39	0	38	0	12	320	2	0	1	0	0	0	1024
Grand Total	4	1049	68	0	72	0	69	0	28	634	3	0	4	0	0	0	1931
Apprch %	0.4	93.6	6.1	0	51.1	0	48.9	0	4.2	95.3	0.5	0	100	0	0	0	
Total %	0.2	54.3	3.5	0	3.7	0	3.6	0	1.5	32.8	0.2	0	0.2	0	0	0	

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					Int. Total
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	129	8	0	137	11	0	7	0	18	1	88	1	0	90	0	0	0	0	0	245
05:15 PM	0	158	10	0	168	6	0	9	0	15	3	91	1	0	95	0	0	0	0	0	278
05:30 PM	0	134	11	0	145	11	0	9	0	20	5	74	0	0	79	0	0	0	0	0	244
05:45 PM	1	154	7	0	162	11	0	13	0	24	3	67	0	0	70	1	0	0	0	1	257
Total Volume	1	575	36	0	612	39	0	38	0	77	12	320	2	0	334	1	0	0	0	1	1024
% App. Total	0.2	94	5.9	0		50.6	0	49.4	0		3.6	95.8	0.6	0		100	0	0	0		
PHF	.250	.910	.818	.000	.911	.886	.000	.731	.000	.802	.600	.879	.500	.000	.879	.250	.000	.000	.000	.250	.921



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N/S: Temple Street
E: Rite Aid Driveway W: Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 BB
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

Groups Printed- Heavy Vehicles

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	
04:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
04:15 PM	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
04:45 PM	0	2	0	2	0	0	0	0	0	1	0	0	0	0	0	0	5
Total	0	4	0	2	0	0	0	0	0	5	0	0	0	0	0	0	11
05:00 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
05:15 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	7
Grand Total	0	9	0	2	0	0	0	0	0	7	0	0	0	0	0	0	18
Apprch %	0	81.8	0	18.2	0	0	0	0	0	100	0	0	0	0	0	0	
Total %	0	50	0	11.1	0	0	0	0	0	38.9	0	0	0	0	0	0	

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					Int. Total
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
04:45 PM	0	2	0	2	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
05:00 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total Volume	0	5	0	2	7	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	12
% App. Total	0	71.4	0	28.6		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.625	.000	.250	.438	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.000	.000	.000	.000	.000	.600



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N/S: Temple Street
E: Rite Aid Driveway W: Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133268 BB
Site Code : 81491.13
Start Date : 3/20/2013
Page No : 1

Groups Printed- Peds and Bicycles

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	1	0	0	1	0	1	17	0	0	0	5	0	0	0	3	28
04:15 PM	0	0	0	7	0	0	0	26	1	0	0	2	0	0	0	9	45
04:30 PM	0	0	0	1	0	0	0	19	0	0	0	0	0	0	0	2	22
04:45 PM	0	0	0	2	0	0	0	21	0	0	0	1	0	0	0	5	29
Total	0	1	0	10	1	0	1	83	1	0	0	8	0	0	0	19	124
05:00 PM	0	0	0	1	0	0	0	20	0	0	0	1	0	0	0	5	27
05:15 PM	0	0	0	2	0	0	0	22	0	0	0	1	0	0	0	1	26
05:30 PM	0	0	0	1	0	0	0	23	0	0	0	3	0	0	0	4	31
05:45 PM	0	0	1	1	0	0	0	27	0	0	0	4	0	0	0	8	41
Total	0	0	1	5	0	0	0	92	0	0	0	9	0	0	0	18	125
Grand Total	0	1	1	15	1	0	1	175	1	0	0	17	0	0	0	37	249
Apprch %	0	5.9	5.9	88.2	0.6	0	0.6	98.9	5.6	0	0	94.4	0	0	0	100	
Total %	0	0.4	0.4	6	0.4	0	0.4	70.3	0.4	0	0	6.8	0	0	0	14.9	

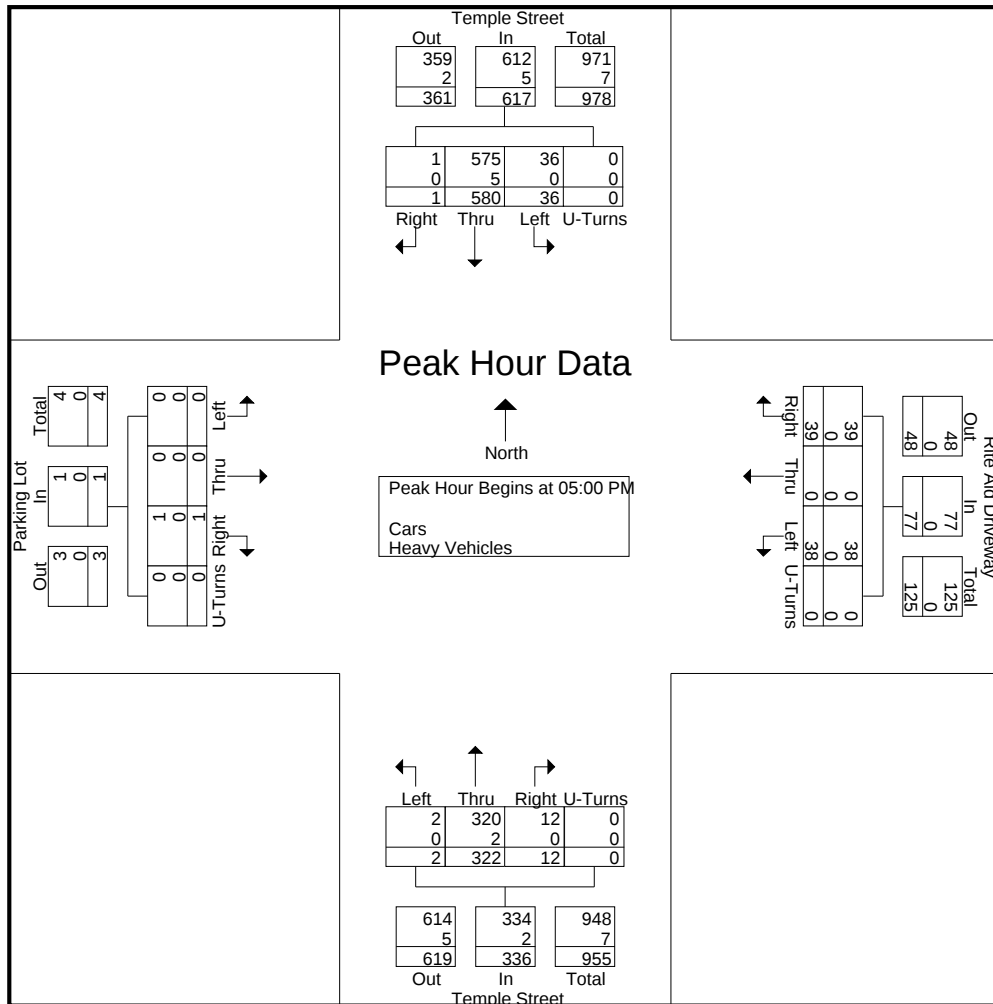
	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	1	1	0	0	0	20	20	0	0	0	1	1	0	0	0	5	5	27
05:15 PM	0	0	0	2	2	0	0	0	22	22	0	0	0	1	1	0	0	0	1	1	26
05:30 PM	0	0	0	1	1	0	0	0	23	23	0	0	0	3	3	0	0	0	4	4	31
05:45 PM	0	0	1	1	2	0	0	0	27	27	0	0	0	4	4	0	0	0	8	8	41
Total Volume	0	0	1	5	6	0	0	0	92	92	0	0	0	9	9	0	0	0	18	18	125
% App. Total	0	0	16.7	83.3		0	0	0	100		0	0	0	100		0	0	0	100		
PHF	.000	.000	.250	.625	.750	.000	.000	.000	.852	.852	.000	.000	.000	.563	.563	.000	.000	.000	.563	.563	.762

N/S: Temple Street
 E: Rite Aid Driveway W: Parking Lot
 City, State: Somerville, MA
 Client: VHB / M. Kealey



File Name : 133268 BB
 Site Code : 81491.13
 Start Date : 3/20/2013
 Page No : 1

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	131	8	0	139	11	0	7	0	18	1	89	1	0	91	0	0	0	0	0	248
05:15 PM	0	159	10	0	169	6	0	9	0	15	3	92	1	0	96	0	0	0	0	0	280
05:30 PM	0	134	11	0	145	11	0	9	0	20	5	74	0	0	79	0	0	0	0	0	244
05:45 PM	1	156	7	0	164	11	0	13	0	24	3	67	0	0	70	1	0	0	0	1	259
Total Volume	1	580	36	0	617	39	0	38	0	77	12	322	2	0	336	1	0	0	0	1	1031
% App. Total	0.2	94	5.8	0		50.6	0	49.4	0		3.6	95.8	0.6	0		100	0	0	0		
PHF	.250	.912	.818	.000	.913	.886	.000	.731	.000	.802	.600	.875	.500	.000	.875	.250	.000	.000	.000	.250	.921
Cars	1	575	36	0	612	39	0	38	0	77	12	320	2	0	334	1	0	0	0	1	1024
% Cars	100	99.1	100	0	99.2	100	0	100	0	100	100	99.4	100	0	99.4	100	0	0	0	100	99.3
Heavy Vehicles	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
% Heavy Vehicles	0	0.9	0	0	0.8	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	0.7





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N: Temple Street
E/W: Broadway
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133367 A
Site Code : 81491.13
Start Date : 5/18/2013
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
11:00 AM	78	40	0	27	99	0	163	36	0	443
11:15 AM	90	48	1	24	107	0	177	38	0	485
11:30 AM	88	36	0	28	89	0	178	41	0	460
11:45 AM	103	48	0	22	102	0	176	52	2	505
Total	359	172	1	101	397	0	694	167	2	1893
12:00 PM	91	56	0	28	107	0	179	47	2	510
12:15 PM	79	38	0	43	116	0	184	30	1	491
12:30 PM	81	31	0	39	106	0	184	42	0	483
12:45 PM	96	45	0	23	110	0	178	37	0	489
Total	347	170	0	133	439	0	725	156	3	1973
Grand Total	706	342	1	234	836	0	1419	323	5	3866
Apprch %	67.3	32.6	0.1	21.9	78.1	0	81.2	18.5	0.3	
Total %	18.3	8.8	0	6.1	21.6	0	36.7	8.4	0.1	
Cars	699	340	0	231	818	0	1398	319	5	3810
% Cars	99	99.4	0	98.7	97.8	0	98.5	98.8	100	98.6
Heavy Vehicles	7	2	1	3	18	0	21	4	0	56
% Heavy Vehicles	1	0.6	100	1.3	2.2	0	1.5	1.2	0	1.4

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	103	48	0	151	22	102	0	124	176	52	2	230	505
12:00 PM	91	56	0	147	28	107	0	135	179	47	2	228	510
12:15 PM	79	38	0	117	43	116	0	159	184	30	1	215	491
12:30 PM	81	31	0	112	39	106	0	145	184	42	0	226	483
Total Volume	354	173	0	527	132	431	0	563	723	171	5	899	1989
% App. Total	67.2	32.8	0		23.4	76.6	0		80.4	19	0.6		
PHF	.859	.772	.000	.873	.767	.929	.000	.885	.982	.822	.625	.977	.975
Cars	350	172	0	522	131	422	0	553	711	170	5	886	1961
% Cars	98.9	99.4	0	99.1	99.2	97.9	0	98.2	98.3	99.4	100	98.6	98.6
Heavy Vehicles	4	1	0	5	1	9	0	10	12	1	0	13	28
% Heavy Vehicles	1.1	0.6	0	0.9	0.8	2.1	0	1.8	1.7	0.6	0	1.4	1.4



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City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133367 A
Site Code : 81491.13
Start Date : 5/18/2013
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Groups Printed- Cars

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
11:00 AM	78	40	0	27	97	0	161	36	0	439
11:15 AM	89	48	0	23	104	0	174	36	0	474
11:30 AM	86	36	0	27	88	0	177	41	0	455
11:45 AM	102	48	0	22	99	0	173	51	2	497
Total	355	172	0	99	388	0	685	164	2	1865
12:00 PM	89	56	0	28	105	0	177	47	2	504
12:15 PM	79	37	0	43	114	0	180	30	1	484
12:30 PM	80	31	0	38	104	0	181	42	0	476
12:45 PM	96	44	0	23	107	0	175	36	0	481
Total	344	168	0	132	430	0	713	155	3	1945
Grand Total	699	340	0	231	818	0	1398	319	5	3810
Apprch %	67.3	32.7	0	22	78	0	81.2	18.5	0.3	
Total %	18.3	8.9	0	6.1	21.5	0	36.7	8.4	0.1	

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	102	48	0	150	22	99	0	121	173	51	2	226	497
12:00 PM	89	56	0	145	28	105	0	133	177	47	2	226	504
12:15 PM	79	37	0	116	43	114	0	157	180	30	1	211	484
12:30 PM	80	31	0	111	38	104	0	142	181	42	0	223	476
Total Volume	350	172	0	522	131	422	0	553	711	170	5	886	1961
% App. Total	67	33	0		23.7	76.3	0		80.2	19.2	0.6		
PHF	.858	.768	.000	.870	.762	.925	.000	.881	.982	.833	.625	.980	.973



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File Name : 133367 A
Site Code : 81491.13
Start Date : 5/18/2013
Page No : 1

Groups Printed- Heavy Vehicles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	U-Turns	Right	Thru	U-Turns	Thru	Left	U-Turns	Int. Total
11:00 AM	0	0	0	0	2	0	2	0	0	4
11:15 AM	1	0	1	1	3	0	3	2	0	11
11:30 AM	2	0	0	1	1	0	1	0	0	5
11:45 AM	1	0	0	0	3	0	3	1	0	8
Total	4	0	1	2	9	0	9	3	0	28
12:00 PM	2	0	0	0	2	0	2	0	0	6
12:15 PM	0	1	0	0	2	0	4	0	0	7
12:30 PM	1	0	0	1	2	0	3	0	0	7
12:45 PM	0	1	0	0	3	0	3	1	0	8
Total	3	2	0	1	9	0	12	1	0	28
Grand Total	7	2	1	3	18	0	21	4	0	56
Apprch %	70	20	10	14.3	85.7	0	84	16	0	
Total %	12.5	3.6	1.8	5.4	32.1	0	37.5	7.1	0	

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:15 AM													
11:15 AM	1	0	1	2	1	3	0	4	3	2	0	5	11
11:30 AM	2	0	0	2	1	1	0	2	1	0	0	1	5
11:45 AM	1	0	0	1	0	3	0	3	3	1	0	4	8
12:00 PM	2	0	0	2	0	2	0	2	2	0	0	2	6
Total Volume	6	0	1	7	2	9	0	11	9	3	0	12	30
% App. Total	85.7	0	14.3		18.2	81.8	0		75	25	0		
PHF	.750	.000	.250	.875	.500	.750	.000	.688	.750	.375	.000	.600	.682



PRECISION
D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

N: Temple Street
E/W: Broadway
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133367 A
Site Code : 81491.13
Start Date : 5/18/2013
Page No : 1

Groups Printed- Peds and Bicycles

	Temple Street From North			Broadway From East			Broadway From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
11:00 AM	0	0	13	0	1	13	0	0	8	35
11:15 AM	0	0	10	0	1	23	0	0	3	37
11:30 AM	0	0	12	0	0	10	2	0	3	27
11:45 AM	1	1	11	0	1	21	0	0	5	40
Total	1	1	46	0	3	67	2	0	19	139
12:00 PM	0	0	9	1	1	19	2	0	4	36
12:15 PM	0	1	2	1	1	12	2	0	1	20
12:30 PM	0	0	0	2	0	3	1	0	1	7
12:45 PM	0	1	9	1	0	16	3	1	2	33
Total	0	2	20	5	2	50	8	1	8	96
Grand Total	1	3	66	5	5	117	10	1	27	235
Apprch %	1.4	4.3	94.3	3.9	3.9	92.1	26.3	2.6	71.1	
Total %	0.4	1.3	28.1	2.1	2.1	49.8	4.3	0.4	11.5	

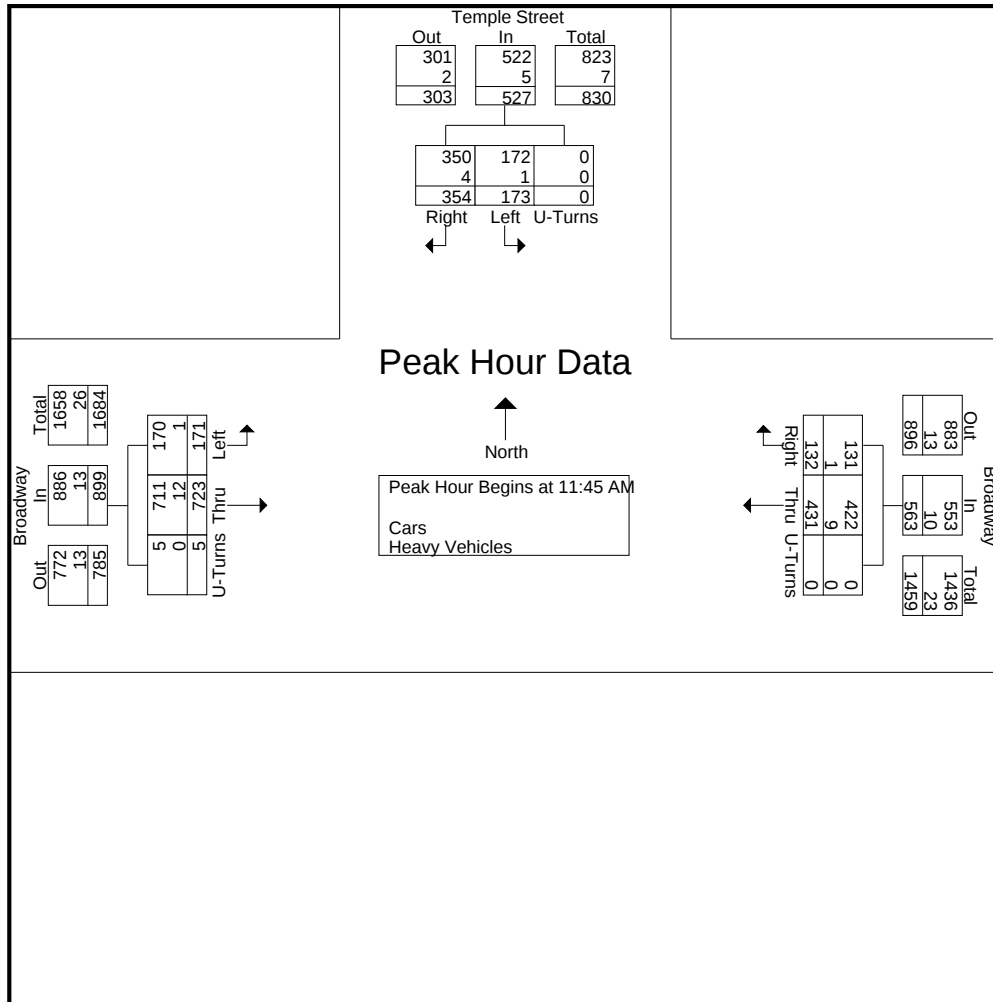
	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:15 AM													
11:15 AM	0	0	10	10	0	1	23	24	0	0	3	3	37
11:30 AM	0	0	12	12	0	0	10	10	2	0	3	5	27
11:45 AM	1	1	11	13	0	1	21	22	0	0	5	5	40
12:00 PM	0	0	9	9	1	1	19	21	2	0	4	6	36
Total Volume	1	1	42	44	1	3	73	77	4	0	15	19	140
% App. Total	2.3	2.3	95.5		1.3	3.9	94.8		21.1	0	78.9		
PHF	.250	.250	.875	.846	.250	.750	.793	.802	.500	.000	.750	.792	.875

N: Temple Street
E/W: Broadway
City, State: Somerville, MA
Client: VHB / M. Kealey



File Name : 133367 A
Site Code : 81491.13
Start Date : 5/18/2013
Page No : 1

	Temple Street From North				Broadway From East				Broadway From West				
Start Time	Right	Left	U-Turns	App. Total	Right	Thru	U-Turns	App. Total	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	103	48	0	151	22	102	0	124	176	52	2	230	505
12:00 PM	91	56	0	147	28	107	0	135	179	47	2	228	510
12:15 PM	79	38	0	117	43	116	0	159	184	30	1	215	491
12:30 PM	81	31	0	112	39	106	0	145	184	42	0	226	483
Total Volume	354	173	0	527	132	431	0	563	723	171	5	899	1989
% App. Total	67.2	32.8	0		23.4	76.6	0		80.4	19	0.6		
PHF	.859	.772	.000	.873	.767	.929	.000	.885	.982	.822	.625	.977	.975
Cars	350	172	0	522	131	422	0	553	711	170	5	886	1961
% Cars	98.9	99.4	0	99.1	99.2	97.9	0	98.2	98.3	99.4	100	98.6	98.6
Heavy Vehicles	4	1	0	5	1	9	0	10	12	1	0	13	28
% Heavy Vehicles	1.1	0.6	0	0.9	0.8	2.1	0	1.8	1.7	0.6	0	1.4	1.4





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N/S: Temple Street
E/W: Rite Aid/ Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133367 B
Site Code : 81491.13
Start Date : 5/18/2013
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					
Start Time	Right	Thru	Left	U-Turns		Right	Thru	Left	U-Turns		Right	Thru	Left	U-Turns		Right	Thru	Left	U-Turns		Int. Total
11:00 AM	1	115	8	1		4	0	3	0		4	59	0	0		0	0	0	0		195
11:15 AM	1	137	7	0		8	0	3	0		3	60	0	0		0	0	1	0		220
11:30 AM	0	115	7	0		8	0	9	0		9	63	1	0		0	0	1	0		213
11:45 AM	0	146	4	0		7	0	5	0		3	69	0	0		0	0	0	0		234
Total	2	513	26	1		27	0	20	0		19	251	1	0		0	0	2	0		862
12:00 PM	0	128	5	1		6	0	11	0		3	68	0	0		1	0	0	0		223
12:15 PM	2	106	6	0		5	0	4	0		5	70	3	0		0	0	0	0		201
12:30 PM	1	104	4	0		7	0	3	0		4	73	2	0		1	0	0	0		199
12:45 PM	0	139	7	0		9	0	7	0		0	61	0	0		0	0	0	0		223
Total	3	477	22	1		27	0	25	0		12	272	5	0		2	0	0	0		846
Grand Total	5	990	48	2		54	0	45	0		31	523	6	0		2	0	2	0		1708
Apprch %	0.5	94.7	4.6	0.2		54.5	0	45.5	0		5.5	93.4	1.1	0		50	0	50	0		
Total %	0.3	58	2.8	0.1		3.2	0	2.6	0		1.8	30.6	0.4	0		0.1	0	0.1	0		
Cars	5	980	47	2		53	0	44	0		31	514	6	0		2	0	2	0		1686
% Cars	100	99	97.9	100		98.1	0	97.8	0		100	98.3	100	0		100	0	100	0		98.7
Heavy Vehicles	0	10	1	0		1	0	1	0		0	9	0	0		0	0	0	0		22
% Heavy Vehicles	0	1	2.1	0		1.9	0	2.2	0		0	1.7	0	0		0	0	0	0		1.3

	Temple Street From North						Rite Aid Driveway From East						Temple Street From South						Parking Lot From West						
Start Time	Right	Thru	Left	U-Turns	App. Total		Right	Thru	Left	U-Turns	App. Total		Right	Thru	Left	U-Turns	App. Total		Right	Thru	Left	U-Turns	App. Total		Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 11:15 AM																									
11:15 AM	1	137	7	0	145		8	0	3	0	11		3	60	0	0	63		0	0	1	0	1		220
11:30 AM	0	115	7	0	122		8	0	9	0	17		9	63	1	0	73		0	0	1	0	1		213
11:45 AM	0	146	4	0	150		7	0	5	0	12		3	69	0	0	72		0	0	0	0	0		234
12:00 PM	0	128	5	1	134		6	0	11	0	17		3	68	0	0	71		1	0	0	0	1		223
Total Volume	1	526	23	1	551		29	0	28	0	57		18	260	1	0	279		1	0	2	0	3		890
% App. Total	0.2	95.5	4.2	0.2			50.9	0	49.1	0			6.5	93.2	0.4	0			33.3	0	66.7	0			
PHF	.250	.901	.821	.250	.918		.906	.000	.636	.000	.838		.500	.942	.250	.000	.955		.250	.000	.500	.000	.750		.951
Cars	1	519	22	1	543		28	0	28	0	56		18	253	1	0	272		1	0	2	0	3		874
% Cars	100	98.7	95.7	100	98.5		96.6	0	100	0	98.2		100	97.3	100	0	97.5		100	0	100	0	100		98.2
Heavy Vehicles	0	7	1	0	8		1	0	0	0	1		0	7	0	0	7		0	0	0	0	0		16
% Heavy Vehicles	0	1.3	4.3	0	1.5		3.4	0	0	0	1.8		0	2.7	0	0	2.5		0	0	0	0	0		1.8



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E/W: Rite Aid/ Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133367 B
Site Code : 81491.13
Start Date : 5/18/2013
Page No : 1

Groups Printed- Cars

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	
11:00 AM	1	115	8	1	4	0	3	0	4	59	0	0	0	0	0	0	195
11:15 AM	1	135	7	0	8	0	3	0	3	58	0	0	0	0	1	0	216
11:30 AM	0	113	6	0	8	0	9	0	9	60	1	0	0	0	1	0	207
11:45 AM	0	145	4	0	7	0	5	0	3	68	0	0	0	0	0	0	232
Total	2	508	25	1	27	0	20	0	19	245	1	0	0	0	2	0	850
12:00 PM	0	126	5	1	5	0	11	0	3	67	0	0	1	0	0	0	219
12:15 PM	2	105	6	0	5	0	4	0	5	70	3	0	0	0	0	0	200
12:30 PM	1	103	4	0	7	0	3	0	4	72	2	0	1	0	0	0	197
12:45 PM	0	138	7	0	9	0	6	0	0	60	0	0	0	0	0	0	220
Total	3	472	22	1	26	0	24	0	12	269	5	0	2	0	0	0	836
Grand Total	5	980	47	2	53	0	44	0	31	514	6	0	2	0	2	0	1686
Apprch %	0.5	94.8	4.5	0.2	54.6	0	45.4	0	5.6	93.3	1.1	0	50	0	50	0	
Total %	0.3	58.1	2.8	0.1	3.1	0	2.6	0	1.8	30.5	0.4	0	0.1	0	0.1	0	

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					Int. Total
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	1	135	7	0	143	8	0	3	0	11	3	58	0	0	61	0	0	1	0	1	216
11:30 AM	0	113	6	0	119	8	0	9	0	17	9	60	1	0	70	0	0	1	0	1	207
11:45 AM	0	145	4	0	149	7	0	5	0	12	3	68	0	0	71	0	0	0	0	0	232
12:00 PM	0	126	5	1	132	5	0	11	0	16	3	67	0	0	70	1	0	0	0	1	219
Total Volume	1	519	22	1	543	28	0	28	0	56	18	253	1	0	272	1	0	2	0	3	874
% App. Total	0.2	95.6	4.1	0.2		50	0	50	0		6.6	93	0.4	0		33.3	0	66.7	0		
PHF	.250	.895	.786	.250	.911	.875	.000	.636	.000	.824	.500	.930	.250	.000	.958	.250	.000	.500	.000	.750	.942



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File Name : 133367 B
Site Code : 81491.13
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Page No : 1

Groups Printed- Heavy Vehicles

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	Right	Thru	Left	U-Turns	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
11:30 AM	0	2	1	0	0	0	0	0	0	3	0	0	0	0	0	0	6
11:45 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Total	0	5	1	0	0	0	0	0	0	6	0	0	0	0	0	0	12
12:00 PM	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	4
12:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
12:45 PM	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
Total	0	5	0	0	1	0	1	0	0	3	0	0	0	0	0	0	10
Grand Total	0	10	1	0	1	0	1	0	0	9	0	0	0	0	0	0	22
Apprch %	0	90.9	9.1	0	50	0	50	0	0	100	0	0	0	0	0	0	
Total %	0	45.5	4.5	0	4.5	0	4.5	0	0	40.9	0	0	0	0	0	0	

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					Int. Total
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
11:30 AM	0	2	1	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
11:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
12:00 PM	0	2	0	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	4
Total Volume	0	7	1	0	8	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	16
% App. Total	0	87.5	12.5	0		100	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.875	.250	.000	.667	.250	.000	.000	.000	.250	.000	.583	.000	.000	.583	.000	.000	.000	.000	.000	.667



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Site Code : 81491.13
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Groups Printed- Peds and Bicycles

	Temple Street From North				Rite Aid Driveway From East				Temple Street From South				Parking Lot From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	6	14
11:15 AM	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	4	9
11:30 AM	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	4	9
11:45 AM	0	2	0	4	0	0	0	10	0	1	0	1	0	0	0	9	27
Total	0	2	0	6	0	0	0	26	0	1	0	1	0	0	0	23	59
12:00 PM	0	0	0	2	0	0	0	6	0	1	0	0	0	0	0	9	18
12:15 PM	0	1	0	0	1	0	0	12	0	0	0	1	0	0	0	7	22
12:30 PM	0	0	0	0	0	0	0	7	0	4	0	0	0	0	0	6	17
12:45 PM	0	1	0	1	0	0	1	10	0	2	0	1	0	0	0	3	19
Total	0	2	0	3	1	0	1	35	0	7	0	2	0	0	0	25	76
Grand Total	0	4	0	9	1	0	1	61	0	8	0	3	0	0	0	48	135
Apprch %	0	30.8	0	69.2	1.6	0	1.6	96.8	0	72.7	0	27.3	0	0	0	100	
Total %	0	3	0	6.7	0.7	0	0.7	45.2	0	5.9	0	2.2	0	0	0	35.6	

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	2	0	4	6	0	0	0	10	10	0	1	0	1	2	0	0	0	9	9	27
12:00 PM	0	0	0	2	2	0	0	0	6	6	0	1	0	0	1	0	0	0	9	9	18
12:15 PM	0	1	0	0	1	1	0	0	12	13	0	0	0	1	1	0	0	0	7	7	22
12:30 PM	0	0	0	0	0	0	0	0	7	7	0	4	0	0	4	0	0	0	6	6	17
Total Volume	0	3	0	6	9	1	0	0	35	36	0	6	0	2	8	0	0	0	31	31	84
% App. Total	0	33.3	0	66.7		2.8	0	0	97.2		0	75	0	25		0	0	0	100		
PHF	.000	.375	.000	.375	.375	.250	.000	.000	.729	.692	.000	.375	.000	.500	.500	.000	.000	.000	.861	.861	.778



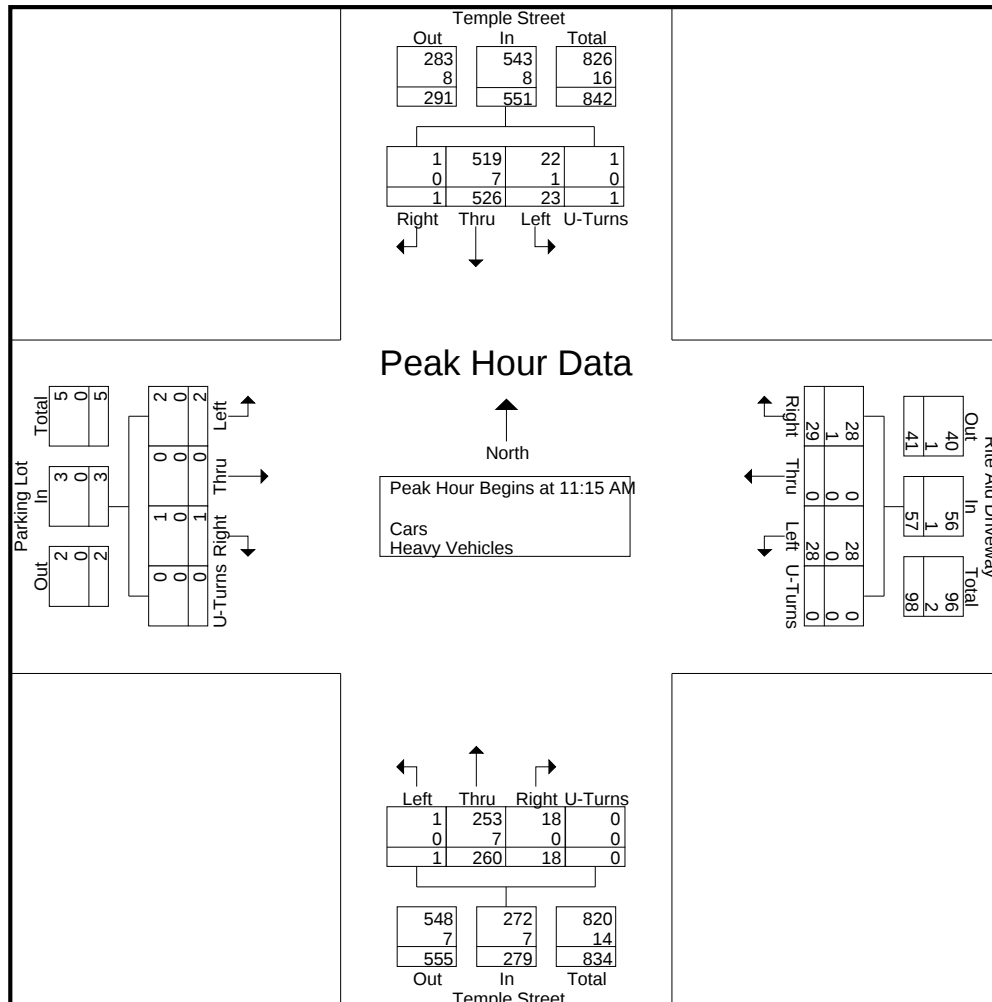
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Email: datarequests@pdillc.com

N/S: Temple Street
E/W: Rite Aid/ Parking Lot
City, State: Somerville, MA
Client: VHB / M. Kealey

File Name : 133367 B
Site Code : 81491.13
Start Date : 5/18/2013
Page No : 1

	Temple Street From North					Rite Aid Driveway From East					Temple Street From South					Parking Lot From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	1	137	7	0	145	8	0	3	0	11	3	60	0	0	63	0	0	1	0	1	220
11:30 AM	0	115	7	0	122	8	0	9	0	17	9	63	1	0	73	0	0	1	0	1	213
11:45 AM	0	146	4	0	150	7	0	5	0	12	3	69	0	0	72	0	0	0	0	0	234
12:00 PM	0	128	5	1	134	6	0	11	0	17	3	68	0	0	71	1	0	0	0	1	223
Total Volume	1	526	23	1	551	29	0	28	0	57	18	260	1	0	279	1	0	2	0	3	890
% App. Total	0.2	95.5	4.2	0.2		50.9	0	49.1	0		6.5	93.2	0.4	0		33.3	0	66.7	0		
PHF	.250	.901	.821	.250	.918	.906	.000	.636	.000	.838	.500	.942	.250	.000	.955	.250	.000	.500	.000	.750	.951
Cars	1	519	22	1	543	28	0	28	0	56	18	253	1	0	272	1	0	2	0	3	874
% Cars	100	98.7	95.7	100	98.5	96.6	0	100	0	98.2	100	97.3	100	0	97.5	100	0	100	0	100	98.2
Heavy Vehicles	0	7	1	0	8	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	16
% Heavy Vehicles	0	1.3	4.3	0	1.5	3.4	0	0	0	1.8	0	2.7	0	0	2.5	0	0	0	0	0	1.8

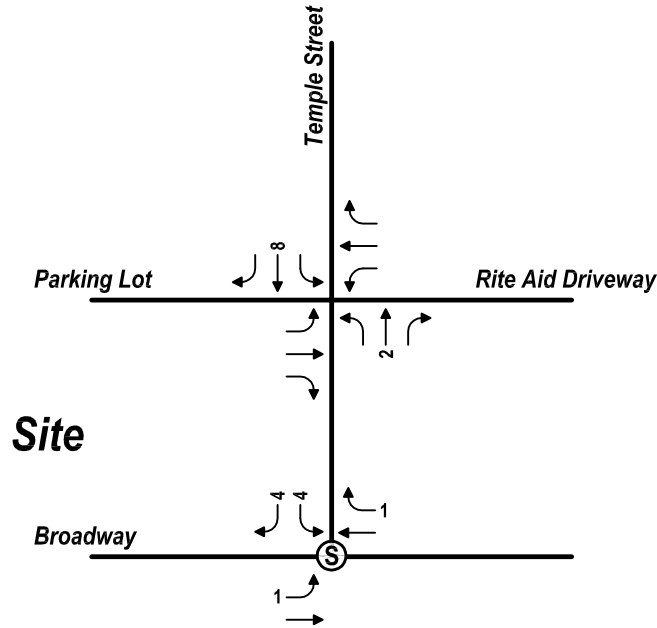




Background Traffic Volumes

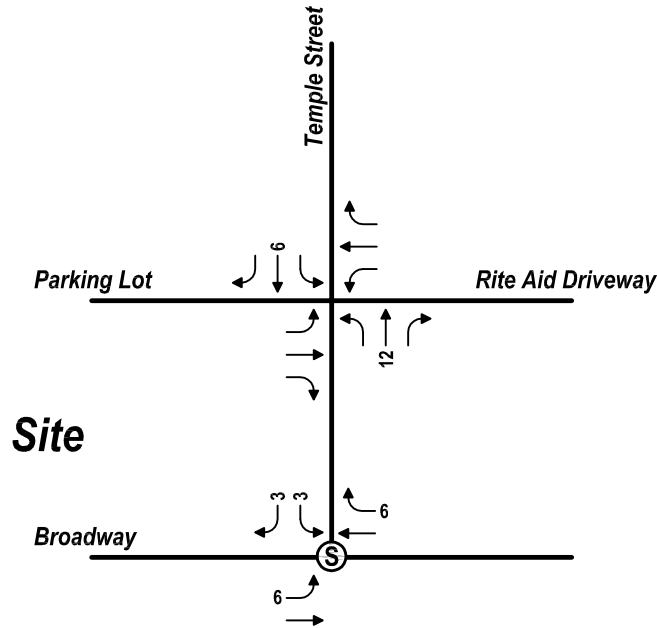
Weekday Morning Peak Hour

Ⓢ Signalized Intersection



Weekday Evening Peak Hour

Ⓢ Signalized Intersection



Vanasse Hangen Brustlin, Inc.

Saint Polycarps Phase 3 Background Project
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

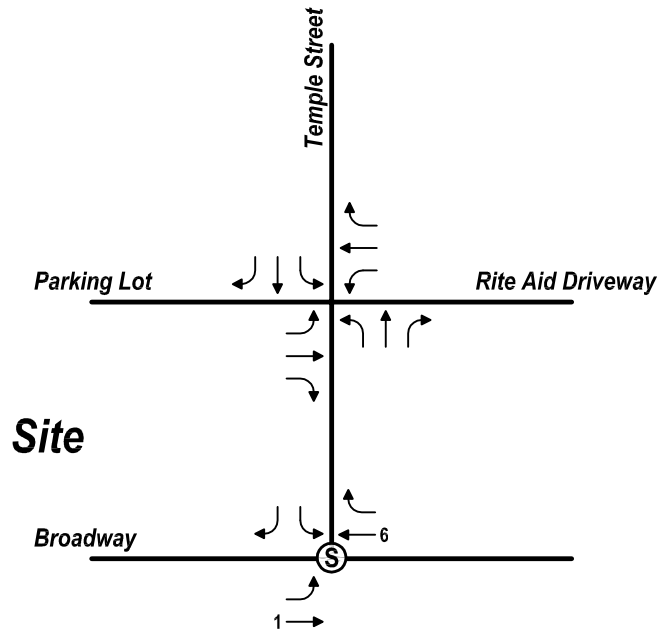
Figure
March 2013



Not to Scale

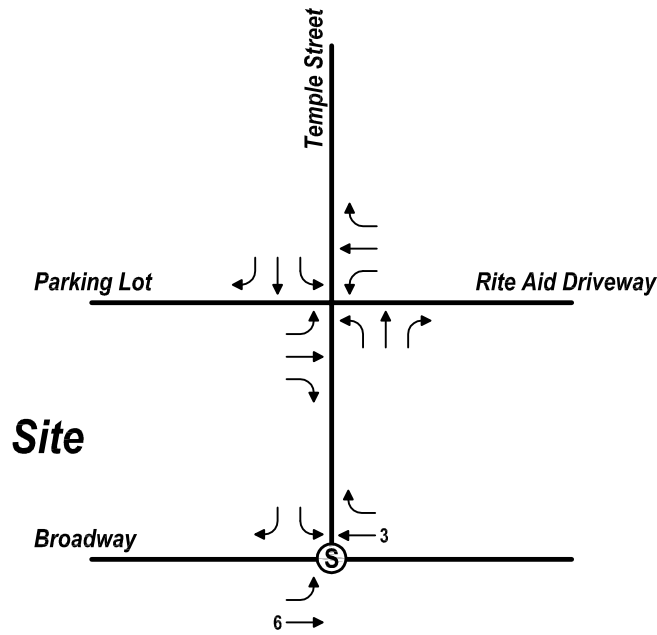
Weekday Morning Peak Hour

Ⓢ Signalized Intersection



Weekday Evening Peak Hour

Ⓢ Signalized Intersection



Vanasse Hangen Brustlin, Inc.

Criterion Background Project
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

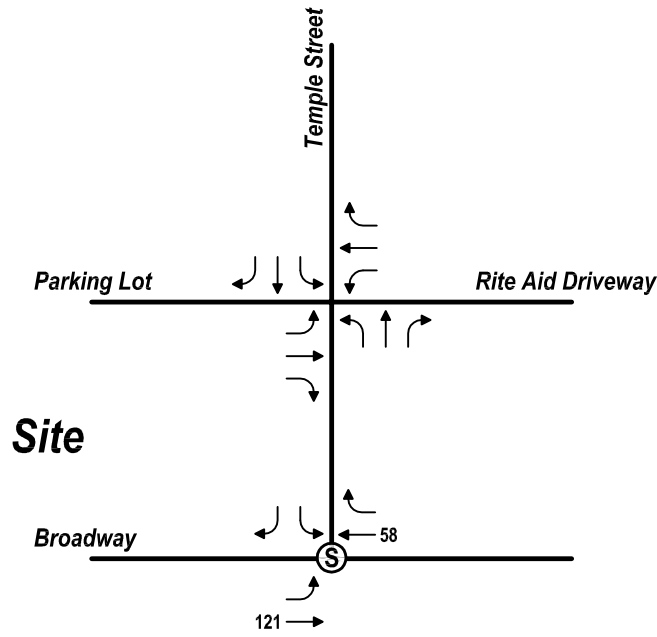
Figure
March 2013



Not to Scale

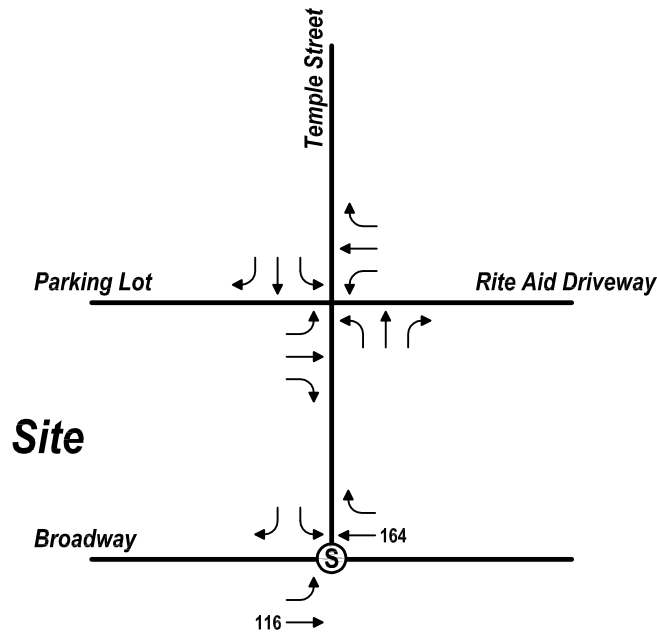
Weekday Morning Peak Hour

Ⓢ Signalized Intersection



Weekday Evening Peak Hour

Ⓢ Signalized Intersection



Vanasse Hangen Brustlin, Inc.

Assembly Square Background Project
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

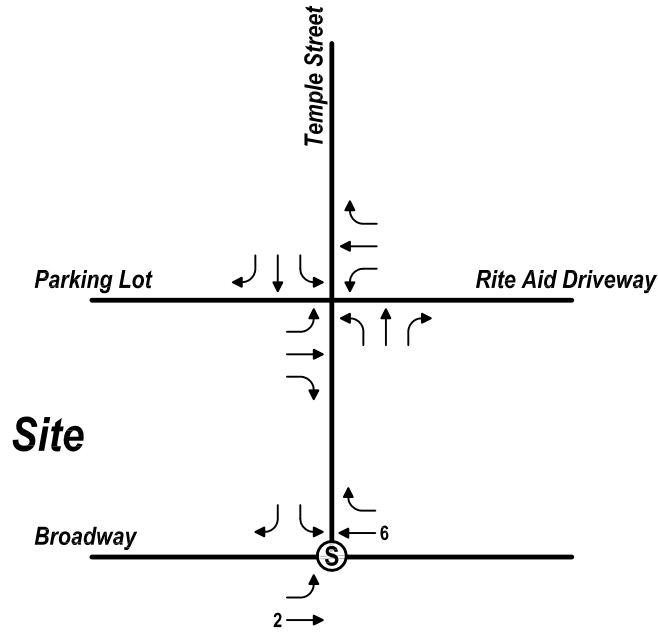
Figure
March 2013



Not to Scale

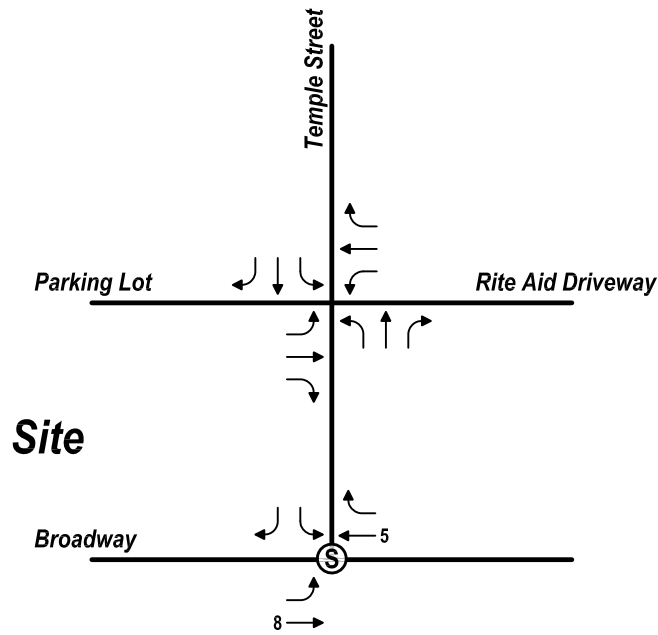
Weekday Morning Peak Hour

Ⓢ Signalized Intersection



Weekday Evening Peak Hour

Ⓢ Signalized Intersection



Vanasse Hangen Brustlin, Inc.

100 Fellsway West (54 Units)
Background Project
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

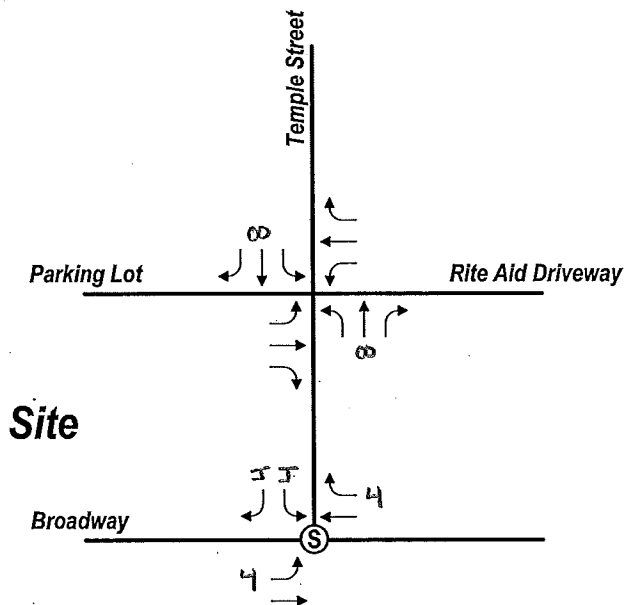
March 2013



Not to Scale

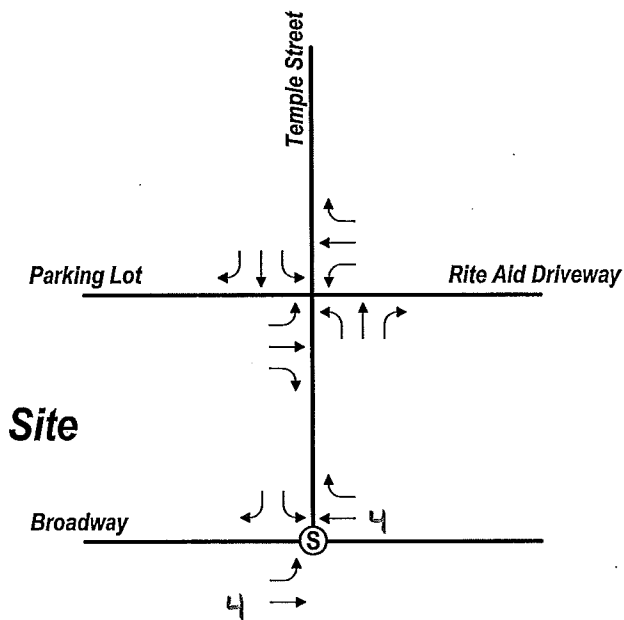
SATURDAY BACKGROUND PROTECT TRIPS

SAINT POLKARPS PHASE 3



(S) Signalized Intersection
neg Negligible

CROSS ST EAST RESIDENTIAL
DEVELOPMENT



(S) Signalized Intersection
neg Negligible

Vanasse Hangen Brustlin, Inc.

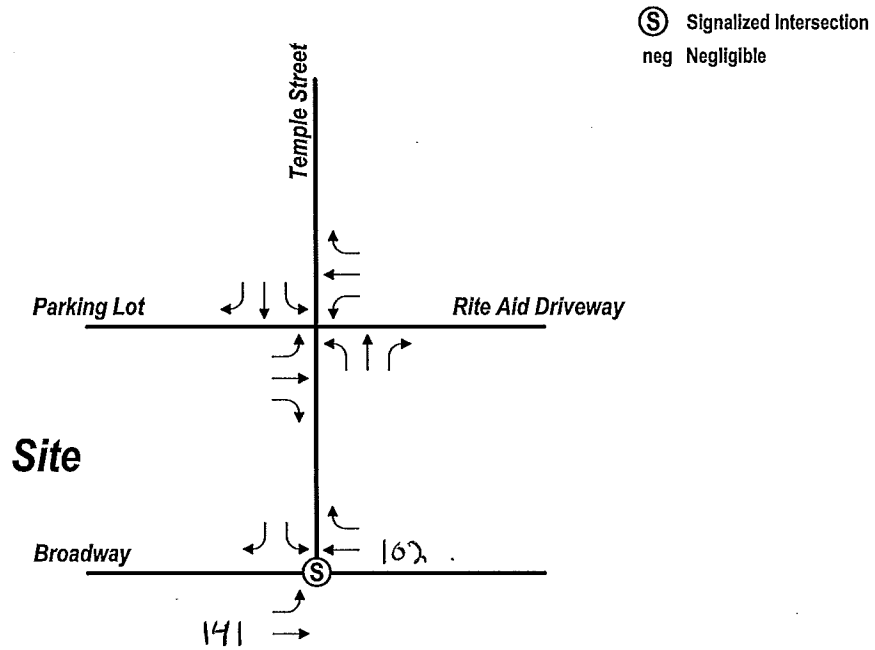
Proposed Residential Development
Somerville, Massachusetts



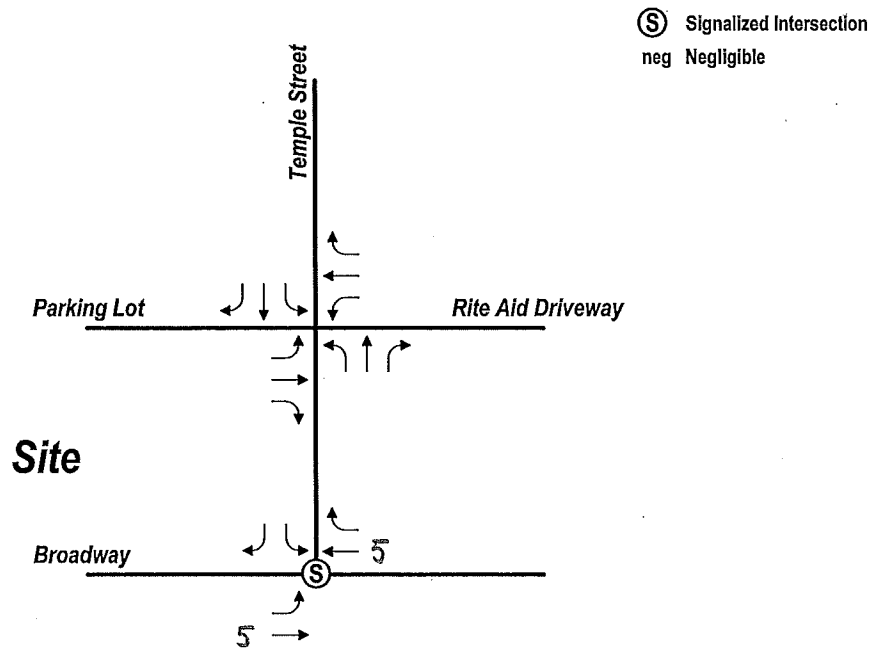
Not to Scale

SATURDAY BACKGROUNDS PROTECT TRIPS

ASSEMBLY SQUARE



100 FELLSWAY WEST



Vanasse Hangen Brustlin, Inc.

Proposed Residential Development
Somerville, Massachusetts



Not to Scale



Trip Generation Calculations

Trip Generation Summary

		<u>Existing Conditions</u>			Proposed Conditions	Proposed Conditions		Net Total
		Retail	Office	Total	Retail	Residential	Subtotal	EX - PR
		4788	4872	9660	7,572	50 Units		
Weekday Daily		942	54	996	1269	427	1696	700
Weekday Morning	Enter	15	7	22	20	6	26	4
Peak Hour	<u>Exit</u>	<u>9</u>	<u>1</u>	<u>10</u>	<u>12</u>	<u>23</u>	<u>35</u>	<u>25</u>
	Total	24	8	32	32	29	61	29
Weekday Evening	Enter	38	1	39	51	29	80	41
Peak Hour	<u>Exit</u>	<u>41</u>	<u>6</u>	<u>47</u>	<u>55</u>	<u>16</u>	<u>71</u>	<u>24</u>
	Total	79	7	86	106	45	151	65
Saturday Daily		1362	12	1374	1818	136	1954	580
Saturday Midday	Enter	63	1	64	85	20	105	41
Peak Hour	<u>Exit</u>	<u>58</u>	<u>1</u>	<u>59</u>	<u>78</u>	<u>20</u>	<u>98</u>	<u>39</u>
	Total	121	2	123	163	40	203	80

ITE TRIP GENERATION WORKSHEET
(9th Edition, Updated 2012)

LANDUSE: Shopping Center (non-Christmas)
LANDUSE CODE: 820

Independent Variable --- 1,000 Sq. Feet Gross Floor Area

JOB NAME: Somerville
JOB NUMBER: 12335

FLOOR AREA (KSF): 4.788

WEEKDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	302	0.79	42.70	12.50	270.89	331	0	1,600	50%	50%
AM PEAK (ADJACENT ST)	104	0.56	0.96	0.10	9.05	310	0	1,600	62%	38%
PM PEAK (ADJACENT ST)	426	0.81	3.71	0.68	29.27	376	0	2,500	48%	52%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	204	102	102	942	471	471
AM PEAK (ADJACENT ST)	5	3	2	24	15	9
PM PEAK (ADJACENT ST)	18	9	9	78	38	41

SATURDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	123	0.82	49.97	16.70	227.50	450	0	1,600	50%	50%
PEAK OF GENERATOR	128	0.83	4.82	1.46	18.32	458	0	1,600	52%	48%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	239	120	120	1,362	681	681
PEAK OF GENERATOR	23	12	11	121	63	58

SUNDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	77	0.52	25.24	4.15	148.15	439	0	1,600	50%	50%
PEAK OF GENERATOR	39	N/A	3.12	0.39	12.40	369	0	1,300	49%	51%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	121	60	60	4289	2145	2145
PEAK OF GENERATOR	15	7	8	N/A	N/A	N/A

ITE TRIP GENERATION WORKSHEET
(9th Edition, Updated 2012)

LANDUSE: General Office Building
LANDUSE CODE: 710

Independent Variable --- 1,000 Sq. Feet Gross Floor Area

JOB NAME: 315 Broadway
JOB NUMBER: 12335

FLOOR AREA (KSF): 4.872

WEEKDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	79	0.81	11.03	3.58	28.80	197	0	1,300	50%	50%
AM PEAK	218	0.83	1.56	0.60	5.98	222	0	2,500	88%	12%
PM PEAK	236	0.82	1.49	0.49	6.39	215	0	2,500	17%	83%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	54	27	27	132	66	66
AM PEAK	8	7	1	17	15	2
PM PEAK	7	1	6	84	14	70

SATURDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	18	0.64	2.46	0.59	14.67	75	0	190	50%	50%
PEAK OF GENERATOR	11		0.43	0.16	1.77	90	0	190	54%	46%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	12	6	6	42	21	21
PEAK OF GENERATOR	2	1	1			

SUNDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	18		1.05	0.19	7.33	75	0	190	50%	50%
PEAK OF GENERATOR	11		0.16	0.06	1.37	90	0	190	58%	42%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	5	3	3			
PEAK OF GENERATOR	1	0	0			

ITE TRIP GENERATION WORKSHEET
(9th Edition, Updated 2012)

LANDUSE: Shopping Center (non-Christmas)
LANDUSE CODE: 820

Independent Variable --- 1,000 Sq. Feet Gross Floor Area

JOB NAME: Somerville
JOB NUMBER: 12335

FLOOR AREA (KSF): 7.572

WEEKDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	302	0.79	42.70	12.50	270.89	331	0	1,600	50%	50%
AM PEAK (ADJACENT ST)	104	0.56	0.96	0.10	9.05	310	0	1,600	62%	38%
PM PEAK (ADJACENT ST)	426	0.81	3.71	0.68	29.27	376	0	2,500	48%	52%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	323	162	162	1269	634	634
AM PEAK (ADJACENT ST)	7	5	3	32	20	12
PM PEAK (ADJACENT ST)	28	13	15	106	51	55

SATURDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	123	0.82	49.97	16.70	227.50	450	0	1,600	50%	50%
PEAK OF GENERATOR	128	0.83	4.82	1.46	18.32	458	0	1,600	52%	48%

TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	378	189	189	1,818	909	909
PEAK OF GENERATOR	36	19	18	163	85	78

SUNDAY

RATES:	# Studies	R^2	Total Trip Ends			Independent Variable Range			Directional Distribution	
			Average	Low	High	Average	Low	High	Enter	Exit
DAILY	77	0.52	25.24	4.15	148.15	439	0	1,600	50%	50%
PEAK OF GENERATOR	39	N/A	3.12	0.39	12.40	369	0	1,300	49%	51%

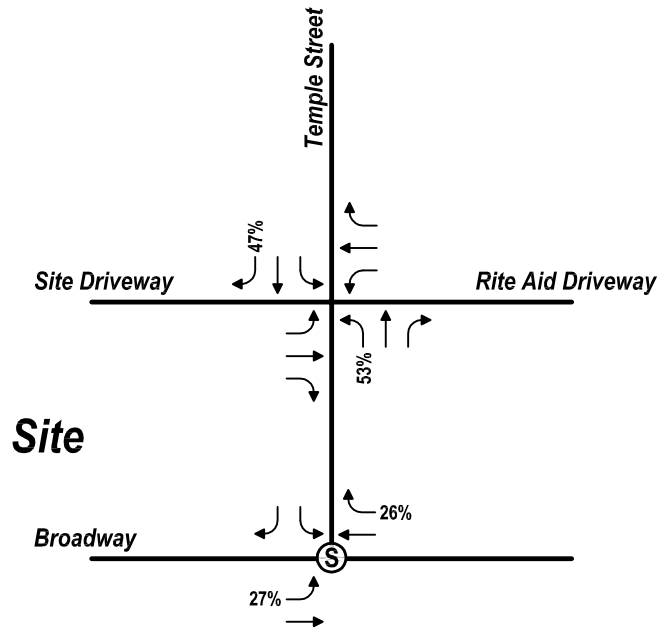
TRIPS:	BY AVERAGE			BY REGRESSION		
	Total	Enter	Exit	Total	Enter	Exit
DAILY	191	96	96	4333	2166	2166
PEAK OF GENERATOR	24	12	12	N/A	N/A	N/A



Trip Distribution

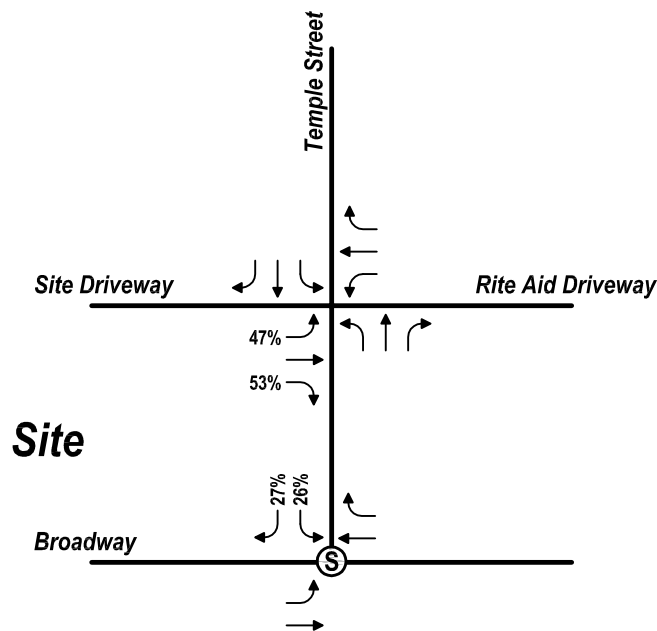
Entering

Ⓢ Signalized Intersection



Exiting

Ⓢ Signalized Intersection



Vanasse Hangen Brustlin, Inc.

Trip Distribution
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts

Figure
March 2013

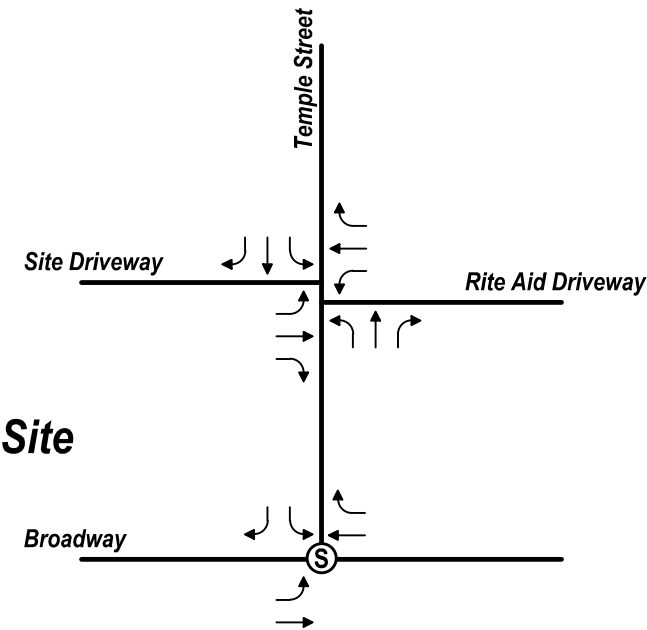


Not to Scale

Weekday Morning Peak Hour Commercial Trips

- Ⓢ Signalized Intersection
- Entering = xx
- Exiting = (xx)

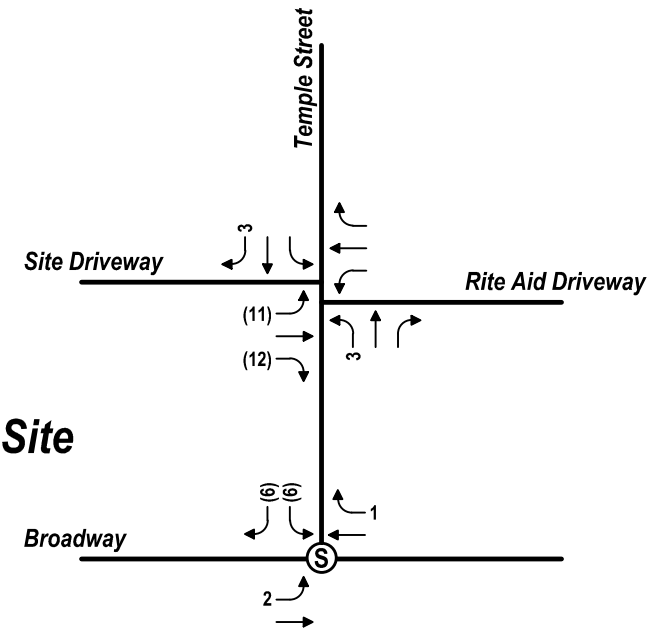
	Existing Commercial	Proposed Commercial	Net
Enter	22	20	-2
Exit	10	12	+2
Total	32	32	0



Weekday Morning Peak Hour Residential Trips

- Ⓢ Signalized Intersection
- Entering = xx
- Exiting = (xx)

	Residential Trips
Enter	6
Exit	23
Total	29



Vanasse Hangen Brustlin, Inc.

Site Generated Trips-Weekday Morning Peak Hour
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts



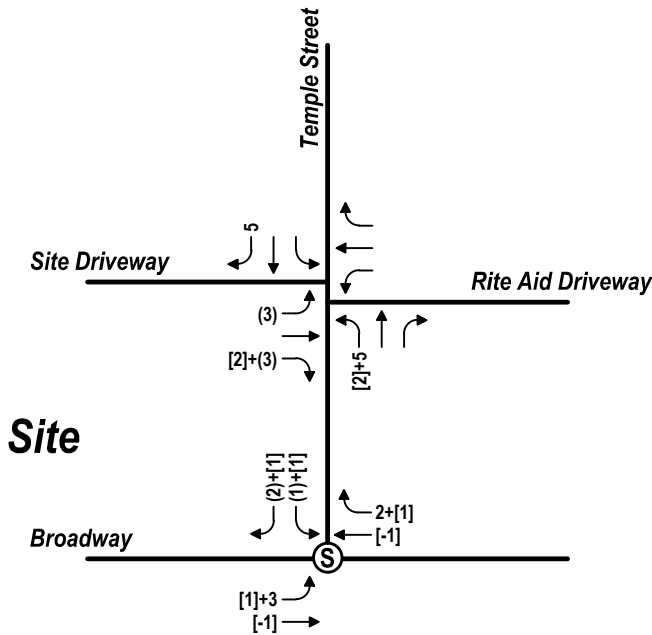
Not to Scale

Weekday Evening Peak Hour Commercial Trips

- Ⓢ Signalized Intersection
- Entering = xx
- Exiting = (xx)
- Pass By = [xx]

	Existing Commercial	Proposed Commercial	Net
Enter	39	51	12
Exit	47	55	8
Total	86	106	20

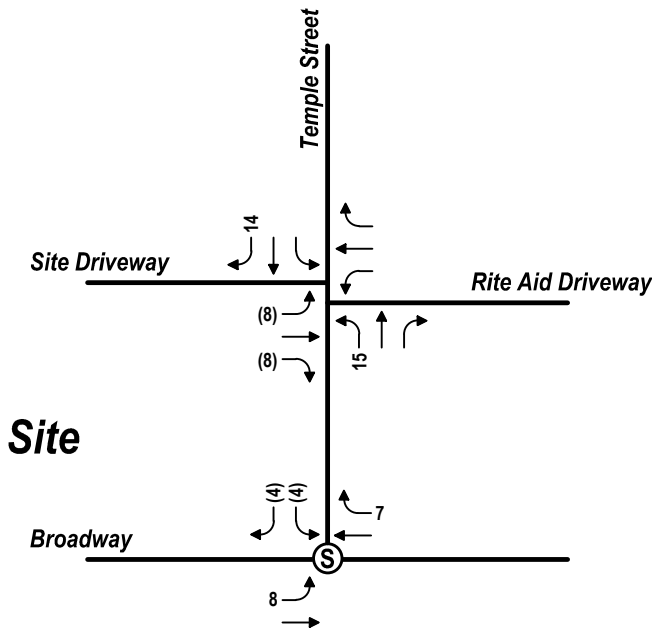
	Proposed Commercial		
	Total	Pass By	Net
Enter	12	[2]	10
Exit	8	[2]	6
Total	20	[4]	16



Weekday Evening Peak Hour Residential Trips

- Ⓢ Signalized Intersection
- Entering = xx
- Exiting = (xx)

	Residential Trips
Enter	29
Exit	16
Total	45



Vanasse Hangen Brustlin, Inc.

Site Generated Trips-Weekday Evening Peak Hour
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts



Not to Scale

Saturday Middy Peak Hour Commercial Trips

Ⓢ Signalized Intersection

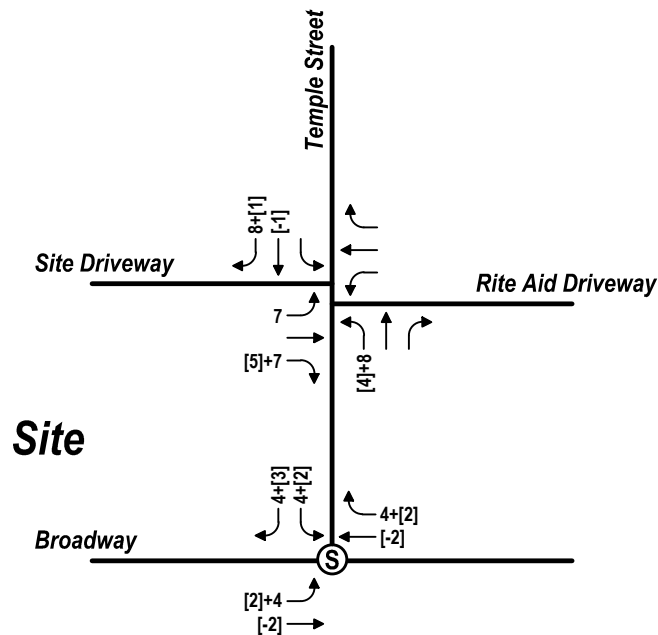
Entering = xx

Exiting = (xx)

Pass By = [xx]

	Existing Commercial	Proposed Commercial	Net
Enter	64	85	21
Exit	59	78	19
Total	123	163	40

	Proposed Commercial		
	Total	Pass By	Net
Enter	21	[5]	16
Exit	19	[5]	14
Total	40	[10]	30



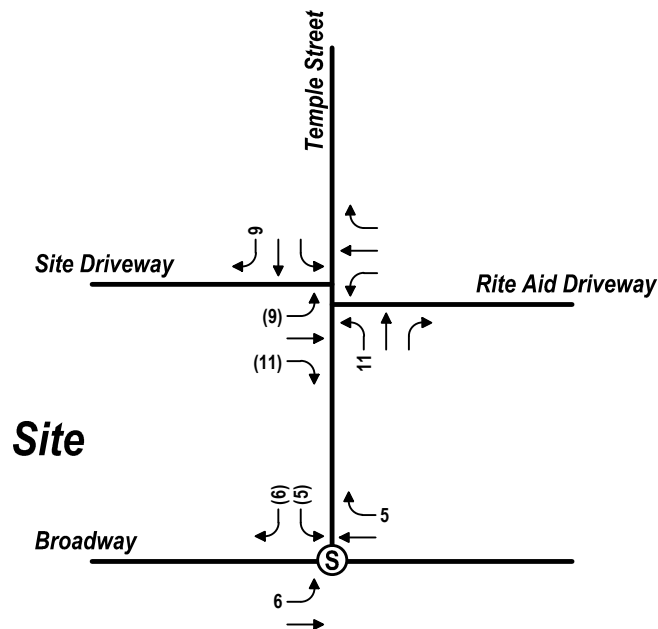
Saturday Middy Peak Hour Residential Trips

Ⓢ Signalized Intersection

Entering = xx

Exiting = (xx)

	Residential Trips
Enter	20
Exit	20
Total	40



Vanasse Hangen Brustlin, Inc.

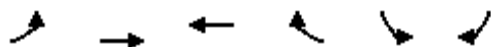
Site Generated Trips- Saturday Middy Peak Hour
Peak Hour Traffic Volumes
Proposed Residential Development
Somerville, Massachusetts



Not to Scale



Intersection Capacity Analysis



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	183	634	328	133	303	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	210	729	373	151	322	334
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Detector Phase	7	4	8	6	6	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	10.0
Total Split (s)	26.0	52.0	26.0	28.0	28.0	26.0
Total Split (%)	32.5%	65.0%	32.5%	35.0%	35.0%	32.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None
v/c Ratio	0.56	0.40	0.53	0.16	0.69	0.34
Control Delay	28.7	9.4	25.5	1.8	29.6	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	9.4	25.5	1.8	29.6	4.5
Queue Length 50th (ft)	66	74	62	0	100	26
Queue Length 95th (ft)	144	123	120	20	223	71
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	612	2769	1189	1106	680	1180
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	0.34	0.26	0.31	0.14	0.47	0.28

Intersection Summary

Area Type: Other

Cycle Length: 80

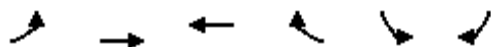
Actuated Cycle Length: 59.8

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Broadway & Temple Street





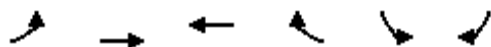
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	183	634	328	133	303	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3406	1524	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3406	1524	1770	1583
Peak-hour factor, PHF	0.87	0.87	0.88	0.88	0.94	0.94
Adj. Flow (vph)	210	729	373	151	322	334
RTOR Reduction (vph)	0	0	0	78	0	79
Lane Group Flow (vph)	210	729	373	73	322	255
Heavy Vehicles (%)	3%	3%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	12.8	31.5	12.7	28.5	15.8	28.6
Effective Green, g (s)	12.8	31.5	12.7	28.5	15.8	28.6
Actuated g/C Ratio	0.22	0.53	0.21	0.48	0.27	0.48
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	378	1862	729	887	472	924
v/s Ratio Prot	c0.12	0.21	c0.11	0.02	c0.18	0.06
v/s Ratio Perm				0.03		0.10
v/c Ratio	0.56	0.39	0.51	0.08	0.68	0.28
Uniform Delay, d1	20.7	8.2	20.6	8.3	19.5	9.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	0.6	0.0	4.0	0.2
Delay (s)	22.5	8.4	21.2	8.4	23.5	9.3
Level of Service	C	A	C	A	C	A
Approach Delay (s)		11.5	17.5		16.3	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	11	0	10	2	313	8	20	610	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.75	0.75	0.75	0.92	0.92	0.92	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	4	15	0	13	2	340	9	22	670	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								165				
pX, platoon unblocked												
vC, conflicting volume	1078	1069	671	1068	1065	345	673			349		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1078	1069	671	1068	1065	345	673			349		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	93	100	98	100			98		
cM capacity (veh/h)	191	219	460	196	220	703	918			1216		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	28	351	695								
Volume Left	0	15	2	22								
Volume Right	4	13	9	2								
cSH	460	299	918	1216								
Volume to Capacity	0.01	0.09	0.00	0.02								
Queue Length 95th (ft)	1	8	0	1								
Control Delay (s)	12.9	18.3	0.1	0.5								
Lane LOS	B	C	A	A								
Approach Delay (s)	12.9	18.3	0.1	0.5								
Approach LOS	B	C										
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			60.5%		ICU Level of Service					B		
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	167	491	545	167	199	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	176	517	562	172	209	437
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Detector Phase	7	4	8	6	6	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	10.0
Total Split (s)	24.0	52.0	28.0	28.0	28.0	24.0
Total Split (%)	30.0%	65.0%	35.0%	35.0%	35.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None
v/c Ratio	0.50	0.26	0.60	0.17	0.55	0.50
Control Delay	28.2	6.8	22.8	1.6	28.2	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.2	6.8	22.8	1.6	28.2	10.1
Queue Length 50th (ft)	54	40	86	0	64	71
Queue Length 95th (ft)	130	80	170	21	148	162
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	561	2805	1372	1239	700	1050
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	0.31	0.18	0.41	0.14	0.30	0.42

Intersection Summary

Area Type: Other

Cycle Length: 80

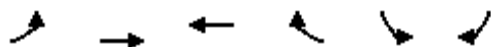
Actuated Cycle Length: 58.8

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Broadway & Temple Street





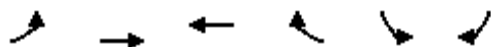
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	167	491	545	167	199	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1787	1599
Peak-hour factor, PHF	0.95	0.95	0.97	0.97	0.95	0.95
Adj. Flow (vph)	176	517	562	172	209	437
RTOR Reduction (vph)	0	0	0	88	0	42
Lane Group Flow (vph)	176	517	562	84	209	395
Heavy Vehicles (%)	3%	3%	3%	3%	1%	1%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	11.8	33.7	15.9	28.4	12.5	24.3
Effective Green, g (s)	11.8	33.7	15.9	28.4	12.5	24.3
Actuated g/C Ratio	0.20	0.58	0.27	0.49	0.21	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	355	2030	958	927	384	832
v/s Ratio Prot	0.10	0.15	c0.16	0.02	0.12	c0.10
v/s Ratio Perm				0.03		0.15
v/c Ratio	0.50	0.25	0.59	0.09	0.54	0.47
Uniform Delay, d1	20.6	6.0	18.3	8.0	20.3	12.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.9	0.0	1.6	0.4
Delay (s)	21.7	6.1	19.2	8.0	21.9	12.7
Level of Service	C	A	B	A	C	B
Approach Delay (s)		10.1	16.6		15.7	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	38	0	39	2	322	12	36	580	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.80	0.80	0.80	0.88	0.88	0.88	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	4	48	0	49	2	366	14	40	637	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								165				
pX, platoon unblocked												
vC, conflicting volume	1143	1101	638	1098	1095	373	638			380		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1143	1101	638	1098	1095	373	638			380		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	74	100	93	100			97		
cM capacity (veh/h)	161	206	480	185	208	678	950			1184		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	96	382	678								
Volume Left	0	48	2	40								
Volume Right	4	49	14	1								
cSH	480	293	950	1184								
Volume to Capacity	0.01	0.33	0.00	0.03								
Queue Length 95th (ft)	1	35	0	3								
Control Delay (s)	12.6	23.2	0.1	0.9								
Lane LOS	B	C	A	A								
Approach Delay (s)	12.6	23.2	0.1	0.9								
Approach LOS	B	C										
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			71.5%	ICU Level of Service					C			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	178	710	405	102	188	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	187	747	418	105	198	392
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Detector Phase	7	4	8	6	6	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	10.0
Total Split (s)	24.0	52.0	28.0	28.0	28.0	24.0
Total Split (%)	30.0%	65.0%	35.0%	35.0%	35.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None
v/c Ratio	0.50	0.38	0.52	0.11	0.52	0.42
Control Delay	25.7	7.6	22.0	1.9	25.6	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	7.6	22.0	1.9	25.6	6.0
Queue Length 50th (ft)	51	60	59	0	54	36
Queue Length 95th (ft)	126	115	124	17	133	97
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	604	2993	1478	1224	753	1128
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	0.31	0.25	0.28	0.09	0.26	0.35

Intersection Summary

Area Type: Other

Cycle Length: 80

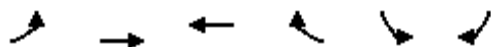
Actuated Cycle Length: 54.3

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Broadway & Temple Street





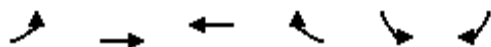
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	178	710	405	102	188	372
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1787	1599
Peak-hour factor, PHF	0.95	0.95	0.97	0.97	0.95	0.95
Adj. Flow (vph)	187	747	418	105	198	392
RTOR Reduction (vph)	0	0	0	58	0	84
Lane Group Flow (vph)	187	747	418	47	198	308
Heavy Vehicles (%)	3%	3%	3%	3%	1%	1%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	11.5	30.1	12.6	24.3	11.7	23.2
Effective Green, g (s)	11.5	30.1	12.6	24.3	11.7	23.2
Actuated g/C Ratio	0.21	0.56	0.23	0.45	0.22	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	374	1961	821	883	389	868
v/s Ratio Prot	c0.11	0.21	c0.12	0.01	c0.11	0.08
v/s Ratio Perm				0.02		0.12
v/c Ratio	0.50	0.38	0.51	0.05	0.51	0.35
Uniform Delay, d1	18.6	6.6	17.9	8.3	18.5	10.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.5	0.0	1.1	0.3
Delay (s)	19.7	6.8	18.4	8.3	19.6	10.5
Level of Service	B	A	B	A	B	B
Approach Delay (s)		9.3	16.4		13.6	
Approach LOS		A	B		B	

Intersection Summary

HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	1	28	0	29	1	260	18	23	526	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.80	0.80	0.80	0.88	0.88	0.88	0.91	0.91	0.91
Hourly flow rate (vph)	8	0	4	35	0	36	1	295	20	25	578	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								165				
pX, platoon unblocked												
vC, conflicting volume	973	947	579	941	938	306	579			316		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	973	947	579	941	938	306	579			316		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	85	100	95	100			98		
cM capacity (veh/h)	218	257	519	240	261	739	1000			1250		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	71	317	604								
Volume Left	8	35	1	25								
Volume Right	4	36	20	1								
cSH	271	365	1000	1250								
Volume to Capacity	0.04	0.20	0.00	0.02								
Queue Length 95th (ft)	3	18	0	2								
Control Delay (s)	18.9	17.2	0.0	0.6								
Lane LOS	C	C	A	A								
Approach Delay (s)	18.9	17.2	0.0	0.6								
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			54.9%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	193	790	415	141	322	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	222	908	472	160	343	355
Turn Type	Prot			pm+ov		pt+ov
Protected Phases	7	4	8	6	6	6 7
Permitted Phases				8		
Detector Phase	7	4	8	6	6	6 7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	
Total Split (s)	26.0	52.0	26.0	28.0	28.0	54.0
Total Split (%)	32.5%	65.0%	32.5%	35.0%	35.0%	67.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	None	None	None	None	
v/c Ratio	0.60	0.48	0.61	0.16	0.72	0.37
Control Delay	31.9	10.5	27.1	1.7	32.6	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	10.5	27.1	1.7	32.6	6.7
Queue Length 50th (ft)	82	112	90	0	122	48
Queue Length 95th (ft)	156	160	151	20	#250	106
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	567	2605	1103	1090	630	1105
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	0.39	0.35	0.43	0.15	0.54	0.32

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 64.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

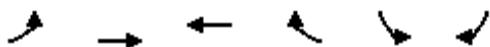
Queue shown is maximum after two cycles.

Splits and Phases: 3: Broadway & Temple Street



12335.00 :: Proposed Residential Development
3: Broadway & Temple Street

2018 No Build Conditions
Timing Plan: Weekday Morning



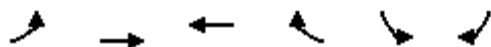
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	193	790	415	141	322	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3406	1524	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3406	1524	1770	1583
Peak-hour factor, PHF	0.87	0.87	0.88	0.88	0.94	0.94
Adj. Flow (vph)	222	908	472	160	343	355
RTOR Reduction (vph)	0	0	0	79	0	38
Lane Group Flow (vph)	222	908	472	81	343	317
Heavy Vehicles (%)	3%	3%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pt+ov
Protected Phases	7	4	8	6	6	6 7
Permitted Phases				8		
Actuated Green, G (s)	13.6	34.6	15.0	32.3	17.3	36.9
Effective Green, g (s)	13.6	34.6	15.0	32.3	17.3	36.9
Actuated g/C Ratio	0.21	0.54	0.23	0.51	0.27	0.58
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	373	1898	800	913	479	914
v/s Ratio Prot	0.13	c0.26	c0.14	0.02	c0.19	0.20
v/s Ratio Perm				0.03		
v/c Ratio	0.60	0.48	0.59	0.09	0.72	0.35
Uniform Delay, d1	22.7	9.1	21.7	8.2	21.1	7.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.2	1.1	0.0	5.1	0.2
Delay (s)	25.2	9.3	22.8	8.2	26.1	7.4
Level of Service	C	A	C	A	C	A
Approach Delay (s)		12.4	19.1		16.6	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	12	0	11	2	331	8	21	649	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.75	0.75	0.75	0.92	0.92	0.92	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	4	16	0	15	2	360	9	23	713	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								165				
pX, platoon unblocked												
vC, conflicting volume	1144	1133	714	1133	1130	364	715			368		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1144	1133	714	1133	1130	364	715			368		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	91	100	98	100			98		
cM capacity (veh/h)	172	200	434	177	201	685	885			1196		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	31	371	738								
Volume Left	0	16	2	23								
Volume Right	4	15	9	2								
cSH	434	274	885	1196								
Volume to Capacity	0.01	0.11	0.00	0.02								
Queue Length 95th (ft)	1	9	0	1								
Control Delay (s)	13.4	19.8	0.1	0.5								
Lane LOS	B	C	A	A								
Approach Delay (s)	13.4	19.8	0.1	0.5								
Approach LOS	B	C										
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			63.4%		ICU Level of Service					B		
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	182	646	745	182	212	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	192	680	768	188	223	462
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Detector Phase	7	4	8	6	6	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	10.0
Total Split (s)	24.0	52.0	28.0	28.0	28.0	24.0
Total Split (%)	30.0%	65.0%	35.0%	35.0%	35.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None
v/c Ratio	0.56	0.33	0.73	0.18	0.59	0.56
Control Delay	31.5	7.3	25.8	1.5	31.0	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	7.3	25.8	1.5	31.0	13.5
Queue Length 50th (ft)	70	60	135	0	81	115
Queue Length 95th (ft)	143	111	245	22	158	194
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	509	2604	1245	1229	635	967
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.26	0.62	0.15	0.35	0.48

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 63.9

Natural Cycle: 60

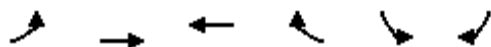
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Broadway & Temple Street



12335.00 :: Proposed Residential Development
3: Broadway & Temple Street

2018 No Build Conditions
Timing Plan: Weekday Evening



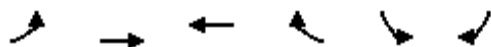
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	182	646	745	182	212	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1787	1599
Peak-hour factor, PHF	0.95	0.95	0.97	0.97	0.95	0.95
Adj. Flow (vph)	192	680	768	188	223	462
RTOR Reduction (vph)	0	0	0	90	0	15
Lane Group Flow (vph)	192	680	768	98	223	447
Heavy Vehicles (%)	3%	3%	3%	3%	1%	1%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	12.5	38.1	19.6	33.1	13.5	26.0
Effective Green, g (s)	12.5	38.1	19.6	33.1	13.5	26.0
Actuated g/C Ratio	0.20	0.60	0.31	0.52	0.21	0.41
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	344	2100	1080	964	379	805
v/s Ratio Prot	0.11	0.19	c0.22	0.02	0.12	c0.11
v/s Ratio Perm				0.04		0.17
v/c Ratio	0.56	0.32	0.71	0.10	0.59	0.56
Uniform Delay, d1	23.1	6.3	19.5	7.7	22.5	14.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	2.2	0.0	2.3	0.8
Delay (s)	25.0	6.4	21.7	7.8	24.9	15.2
Level of Service	C	A	C	A	C	B
Approach Delay (s)		10.5	19.0		18.4	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	40	0	41	2	350	13	38	616	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.80	0.80	0.80	0.88	0.88	0.88	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	4	50	0	51	2	398	15	42	677	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								165				
pX, platoon unblocked												
vC, conflicting volume	1222	1178	677	1175	1171	405	678			412		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1222	1178	677	1175	1171	405	678			412		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	69	100	92	100			96		
cM capacity (veh/h)	141	185	456	164	187	650	919			1152		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	101	415	720								
Volume Left	0	50	2	42								
Volume Right	4	51	15	1								
cSH	456	263	919	1152								
Volume to Capacity	0.01	0.38	0.00	0.04								
Queue Length 95th (ft)	1	43	0	3								
Control Delay (s)	13.0	27.0	0.1	0.9								
Lane LOS	B	D	A	A								
Approach Delay (s)	13.0	27.0	0.1	0.9								
Approach LOS	B	D										
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			75.3%		ICU Level of Service					D		
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	191	896	537	111	202	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	201	943	554	114	213	416
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Detector Phase	7	4	8	6	6	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	10.0
Total Split (s)	24.0	52.0	28.0	28.0	28.0	24.0
Total Split (%)	30.0%	65.0%	35.0%	35.0%	35.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None
v/c Ratio	0.55	0.47	0.60	0.12	0.56	0.47
Control Delay	29.3	8.4	23.3	1.7	28.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	8.4	23.3	1.7	28.7	9.4
Queue Length 50th (ft)	63	87	88	0	67	65
Queue Length 95th (ft)	148	162	168	17	151	150
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	552	2766	1350	1208	688	1041
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	0.36	0.34	0.41	0.09	0.31	0.40

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 59.7

Natural Cycle: 60

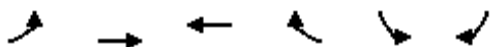
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Broadway & Temple Street



12335.00 :: Proposed Residential Development
3: Broadway & Temple Street

2018 No Build Conditions
Timing Plan: Saturday MIDDAY



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	191	896	537	111	202	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1787	1599
Peak-hour factor, PHF	0.95	0.95	0.97	0.97	0.95	0.95
Adj. Flow (vph)	201	943	554	114	213	416
RTOR Reduction (vph)	0	0	0	59	0	43
Lane Group Flow (vph)	201	943	554	55	213	373
Heavy Vehicles (%)	3%	3%	3%	3%	1%	1%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	12.5	34.4	15.9	28.7	12.8	25.3
Effective Green, g (s)	12.5	34.4	15.9	28.7	12.8	25.3
Actuated g/C Ratio	0.21	0.58	0.27	0.48	0.22	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	370	2037	941	919	386	845
v/s Ratio Prot	0.11	c0.27	c0.16	0.01	0.12	c0.09
v/s Ratio Perm				0.02		0.14
v/c Ratio	0.54	0.46	0.59	0.06	0.55	0.44
Uniform Delay, d1	20.8	7.1	18.8	8.1	20.6	12.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.2	0.9	0.0	1.7	0.4
Delay (s)	22.4	7.3	19.8	8.1	22.4	12.3
Level of Service	C	A	B	A	C	B
Approach Delay (s)		9.9	17.8		15.7	
Approach LOS		A	B		B	

Intersection Summary

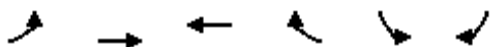
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	59.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	1	29	0	30	1	281	19	24	561	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.80	0.80	0.80	0.88	0.88	0.88	0.91	0.91	0.91
Hourly flow rate (vph)	8	0	4	36	0	38	1	319	22	26	616	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								165				
pX, platoon unblocked												
vC, conflicting volume	1040	1013	617	1006	1003	330	618			341		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1040	1013	617	1006	1003	330	618			341		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	99	83	100	95	100			98		
cM capacity (veh/h)	196	235	494	216	239	716	967			1224		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	74	342	644								
Volume Left	8	36	1	26								
Volume Right	4	38	22	1								
cSH	245	335	967	1224								
Volume to Capacity	0.05	0.22	0.00	0.02								
Queue Length 95th (ft)	4	21	0	2								
Control Delay (s)	20.4	18.8	0.0	0.6								
Lane LOS	C	C	A	A								
Approach Delay (s)	20.4	18.8	0.0	0.6								
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.9									
Intersection Capacity Utilization			57.7%		ICU Level of Service					B		
Analysis Period (min)			15									

12335.00 :: Proposed Residential Development
3: Broadway & Temple Street

2018 Build Conditions
Timing Plan: Weekday Morning



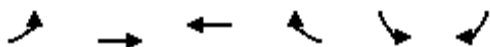
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	195	790	415	142	328	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	224	908	472	161	349	362
Turn Type	Prot			pm+ov		pt+ov
Protected Phases	7	4	8	6	6	6 7
Permitted Phases				8		
Detector Phase	7	4	8	6	6	6 7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	
Total Split (s)	26.0	52.0	26.0	28.0	28.0	54.0
Total Split (%)	32.5%	65.0%	32.5%	35.0%	35.0%	67.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	None	None	None	None	
v/c Ratio	0.61	0.48	0.61	0.17	0.73	0.38
Control Delay	32.2	10.5	27.2	1.7	33.0	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	10.5	27.2	1.7	33.0	6.8
Queue Length 50th (ft)	84	113	91	0	126	50
Queue Length 95th (ft)	157	160	151	20	#261	108
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	564	2596	1098	1087	627	1104
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	0.40	0.35	0.43	0.15	0.56	0.33

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 64.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Broadway & Temple Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	195	790	415	142	328	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3406	1524	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3406	1524	1770	1583
Peak-hour factor, PHF	0.87	0.87	0.88	0.88	0.94	0.94
Adj. Flow (vph)	224	908	472	161	349	362
RTOR Reduction (vph)	0	0	0	79	0	37
Lane Group Flow (vph)	224	908	472	82	349	325
Heavy Vehicles (%)	3%	3%	6%	6%	2%	2%
Turn Type	Prot			pm+ov		pt+ov
Protected Phases	7	4	8	6	6	6 7
Permitted Phases				8		
Actuated Green, G (s)	13.7	34.7	15.0	32.5	17.5	37.2
Effective Green, g (s)	13.7	34.7	15.0	32.5	17.5	37.2
Actuated g/C Ratio	0.21	0.54	0.23	0.51	0.27	0.58
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	374	1894	796	914	482	917
v/s Ratio Prot	0.13	c0.26	c0.14	0.02	c0.20	0.20
v/s Ratio Perm				0.03		
v/c Ratio	0.60	0.48	0.59	0.09	0.72	0.35
Uniform Delay, d1	22.8	9.1	21.9	8.2	21.2	7.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.2	1.2	0.0	5.3	0.2
Delay (s)	25.4	9.3	23.1	8.2	26.5	7.4
Level of Service	C	A	C	A	C	A
Approach Delay (s)		12.5	19.3		16.8	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

12335.00 :: Proposed Residential Development
6: Site Driveway & Temple Street

2018 Build Conditions
Timing Plan: Weekday Morning

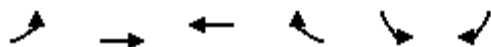


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	12	3	342	670	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.91	0.91
Hourly flow rate (vph)	12	13	3	372	736	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				282		
pX, platoon unblocked						
vC, conflicting volume	1116	738	740			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1116	738	740			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	97	100			
cM capacity (veh/h)	231	421	867			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	25	375	740			
Volume Left	12	3	0			
Volume Right	13	0	3			
cSH	302	867	1700			
Volume to Capacity	0.08	0.00	0.44			
Queue Length 95th (ft)	7	0	0			
Control Delay (s)	18.0	0.1	0.0			
Lane LOS	C	A				
Approach Delay (s)	18.0	0.1	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			45.4%	ICU Level of Service		A
Analysis Period (min)			15			

12335.00 :: Proposed Residential Development
5: Rite Aid Driveway & Temple Street

2018 Build Conditions
Timing Plan: Weekday Morning

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	11	334	8	21	661
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.92	0.92	0.91	0.91
Hourly flow rate (vph)	16	15	363	9	23	726
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			165			
pX, platoon unblocked						
vC, conflicting volume	1140	367			372	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1140	367			372	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	98			98	
cM capacity (veh/h)	220	682			1192	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	31	372	749			
Volume Left	16	0	23			
Volume Right	15	9	0			
cSH	325	1700	1192			
Volume to Capacity	0.09	0.22	0.02			
Queue Length 95th (ft)	8	0	1			
Control Delay (s)	17.2	0.0	0.5			
Lane LOS	C		A			
Approach Delay (s)	17.2	0.0	0.5			
Approach LOS	C					
Intersection Summary						
Average Delay		0.8				
Intersection Capacity Utilization		61.7%		ICU Level of Service		B
Analysis Period (min)		15				



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	194	645	744	192	218	446
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	204	679	767	198	229	469
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Detector Phase	7	4	8	6	6	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	10.0
Total Split (s)	24.0	52.0	28.0	28.0	28.0	24.0
Total Split (%)	30.0%	65.0%	35.0%	35.0%	35.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None
v/c Ratio	0.58	0.33	0.73	0.19	0.60	0.57
Control Delay	32.4	7.4	26.4	1.5	31.3	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	7.4	26.4	1.5	31.3	13.5
Queue Length 50th (ft)	76	61	138	0	84	118
Queue Length 95th (ft)	153	113	247	22	161	198
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	503	2572	1230	1221	627	964
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	0.41	0.26	0.62	0.16	0.37	0.49

Intersection Summary

Area Type: Other

Cycle Length: 80

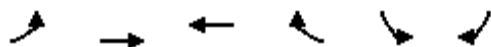
Actuated Cycle Length: 64.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Broadway & Temple Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	194	645	744	192	218	446
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	3505	3505	1568	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	3505	3505	1568	1787	1599
Peak-hour factor, PHF	0.95	0.95	0.97	0.97	0.95	0.95
Adj. Flow (vph)	204	679	767	198	229	469
RTOR Reduction (vph)	0	0	0	95	0	15
Lane Group Flow (vph)	204	679	767	103	229	454
Heavy Vehicles (%)	3%	3%	3%	3%	1%	1%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	12.9	38.5	19.6	33.4	13.8	26.7
Effective Green, g (s)	12.9	38.5	19.6	33.4	13.8	26.7
Actuated g/C Ratio	0.20	0.60	0.30	0.52	0.21	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	351	2099	1068	961	384	813
v/s Ratio Prot	0.12	0.19	c0.22	0.02	0.13	c0.11
v/s Ratio Perm				0.04		0.17
v/c Ratio	0.58	0.32	0.72	0.11	0.60	0.56
Uniform Delay, d1	23.3	6.4	19.9	7.9	22.7	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.1	2.3	0.0	2.5	0.8
Delay (s)	25.7	6.5	22.2	7.9	25.2	15.2
Level of Service	C	A	C	A	C	B
Approach Delay (s)		10.9	19.3		18.5	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

12335.00 :: Proposed Residential Development
6: Site Drive & Temple Street

2018 Build Conditions
Timing Plan: Weekday Evening

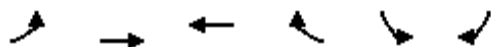


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	13	22	391	654	19
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.80	0.80	0.91	0.91
Hourly flow rate (vph)	12	14	28	489	719	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				266		
pX, platoon unblocked						
vC, conflicting volume	1273	729	740			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1273	729	740			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	97	97			
cM capacity (veh/h)	181	426	871			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	26	516	740			
Volume Left	12	28	0			
Volume Right	14	0	21			
cSH	263	871	1700			
Volume to Capacity	0.10	0.03	0.44			
Queue Length 95th (ft)	8	2	0			
Control Delay (s)	20.2	0.9	0.0			
Lane LOS	C	A				
Approach Delay (s)	20.2	0.9	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		0.8				
Intersection Capacity Utilization		48.5%		ICU Level of Service		A
Analysis Period (min)		15				

12335.00 :: Proposed Residential Development
5: Rite Aid Driveway & Temple Street

2018 Build Conditions
Timing Plan: Weekday Evening

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	40	41	372	13	38	629
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.80	0.80	0.88	0.88	0.91	0.91
Hourly flow rate (vph)	50	51	423	15	42	691
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			165			
pX, platoon unblocked						
vC, conflicting volume	1205	430			438	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1205	430			438	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	92			96	
cM capacity (veh/h)	197	629			1128	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	101	438	733			
Volume Left	50	0	42			
Volume Right	51	15	0			
cSH	303	1700	1128			
Volume to Capacity	0.33	0.26	0.04			
Queue Length 95th (ft)	36	0	3			
Control Delay (s)	22.8	0.0	1.0			
Lane LOS	C		A			
Approach Delay (s)	22.8	0.0	1.0			
Approach LOS	C					
Intersection Summary						
Average Delay		2.4				
Intersection Capacity Utilization		70.3%		ICU Level of Service		C
Analysis Period (min)		15				



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	203	896	535	122	212	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			220	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	25			25	25	25
Right Turn on Red				Yes		Yes
Link Speed (mph)		30	30		30	
Link Distance (ft)		269	275		165	
Travel Time (s)		6.1	6.3		3.8	
Lane Group Flow (vph)	209	924	569	130	228	439
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Detector Phase	7	4	8	6	6	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	22.0	22.0	22.0	10.0
Total Split (s)	24.0	52.0	28.0	28.0	28.0	24.0
Total Split (%)	30.0%	65.0%	35.0%	35.0%	35.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
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	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	None	None	None	None	None
v/c Ratio	0.56	0.45	0.61	0.13	0.58	0.50
Control Delay	30.0	8.5	23.9	1.7	29.1	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	8.5	23.9	1.7	29.1	10.0
Queue Length 50th (ft)	67	86	93	0	73	73
Queue Length 95th (ft)	155	162	176	18	161	163
Internal Link Dist (ft)		189	195		85	
Turn Bay Length (ft)	120			220		
Base Capacity (vph)	553	2780	1339	1210	676	1038
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.33	0.42	0.11	0.34	0.42

Intersection Summary

Area Type: Other

Cycle Length: 80

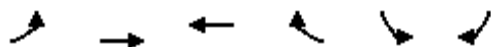
Actuated Cycle Length: 60.8

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Broadway & Temple Street





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	203	896	535	122	212	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1787	3574	3539	1583	1787	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1787	3574	3539	1583	1787	1599
Peak-hour factor, PHF	0.97	0.97	0.94	0.94	0.93	0.93
Adj. Flow (vph)	209	924	569	130	228	439
RTOR Reduction (vph)	0	0	0	66	0	39
Lane Group Flow (vph)	209	924	569	64	228	400
Heavy Vehicles (%)	1%	1%	2%	2%	1%	1%
Turn Type	Prot			pm+ov		pm+ov
Protected Phases	7	4	8	6	6	7
Permitted Phases				8		6
Actuated Green, G (s)	12.6	34.9	16.3	29.7	13.4	26.0
Effective Green, g (s)	12.6	34.9	16.3	29.7	13.4	26.0
Actuated g/C Ratio	0.21	0.58	0.27	0.49	0.22	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	373	2069	957	937	397	849
v/s Ratio Prot	0.12	c0.26	c0.16	0.02	0.13	c0.10
v/s Ratio Perm				0.03		0.15
v/c Ratio	0.56	0.45	0.59	0.07	0.57	0.47
Uniform Delay, d1	21.4	7.2	19.1	8.0	20.9	12.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.2	1.0	0.0	2.0	0.4
Delay (s)	23.3	7.4	20.1	8.1	22.9	12.7
Level of Service	C	A	C	A	C	B
Approach Delay (s)		10.3	17.9		16.2	
Approach LOS		B	B		B	

Intersection Summary

HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

12335.00 :: Proposed Residential Development
6: Site Drive & Temple Street

2018 Build Conditions
Timing Plan: Saturday MIDDAY



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Volume (veh/h)	16	23	23	301	584	18
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	17	25	24	314	635	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				288		
pX, platoon unblocked						
vC, conflicting volume	1006	645	654			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1006	645	654			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	95	97			
cM capacity (veh/h)	263	476	928			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	42	338	654			
Volume Left	17	24	0			
Volume Right	25	0	20			
cSH	357	928	1700			
Volume to Capacity	0.12	0.03	0.38			
Queue Length 95th (ft)	10	2	0			
Control Delay (s)	16.4	0.9	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.4	0.9	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.0				
Intersection Capacity Utilization		44.8%		ICU Level of Service		A
Analysis Period (min)		15				

12335.00 :: Proposed Residential Development
5: Rite Aid Driveway & Temple Street

2018 Build Conditions
Timing Plan: Saturday MIDDAY

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	29	30	304	19	24	583
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.84	0.84	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	35	36	317	20	26	634
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			165			
pX, platoon unblocked						
vC, conflicting volume	1012	327			336	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1012	327			336	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	95			98	
cM capacity (veh/h)	259	715			1223	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	70	336	660			
Volume Left	35	0	26			
Volume Right	36	20	0			
cSH	384	1700	1223			
Volume to Capacity	0.18	0.20	0.02			
Queue Length 95th (ft)	17	0	2			
Control Delay (s)	16.5	0.0	0.6			
Lane LOS	C		A			
Approach Delay (s)	16.5	0.0	0.6			
Approach LOS	C					
Intersection Summary						
Average Delay		1.4				
Intersection Capacity Utilization		60.3%		ICU Level of Service		B
Analysis Period (min)		15				