# **MEMORANDUM**

TO:

Mr. Michael Aldi Eskar Arlington LLC

9 Wildwood Road Arlington, MA 01949 FROM:

Scott W. Thornton, P.E. Principal and

Andrew Arseneault,
Transportation Engineer
Vanasse & Associates, Inc.

35 New England Business Center Drive,

Suite 140

Andover, MA 01810

DATE:

November 30, 2020

RE:

8641

SUBJECT:

Response to Traffic Advisory Committee Comments

Proposed Retail Marijuana Dispensary 21 Broadway, Arlington, Massachusetts

As requested, Vanasse & Associates, Inc. (VAI) has provided responses to comments raised by the Arlington Transportation Advisory Committee (TAC). For ease of review, we have provided the comment followed by our response.

#### Comment:

The TAC Executive Committee concurs with the overall recommendations of the TIA to implement the following recommendations:

- a. Access to the Project will continue to be provided by way of one entrance-only driveway along Broadway and one exit-only driveway onto Sunnyside Avenue.
- b. The adoption of a comprehensive Transportation Demand Management (TDM) strategy.
- c. Development of an Opening Conditions Operations Plan in cooperation with the Arlington Police Department.

Each of these recommendations includes several detailed recommendations. The Executive Committee recommends that the developer provide signage and pavement marking designating the exit driveway on Sunnyside Avenue as right-turn only in accordance with DPW requirements (add this to the Access to the Project Recommendations). This will help eliminate any additional traffic through the Sunnyside neighborhood. The traffic analysis assumed all exiting traffic would turn right.

Response:

No comment required.

#### Comment:

The TIA uses standard Institute of Transportation Engineers (ITE) trip generation rates for projecting traffic volumes from the proposed project. However, If possible the report should be using trip generation data from dispensary sites in Massachusetts as was done in the final TIA for the Apothca dispensary. This is because the ITE data are based on a small number of data points from two western states with wide variations of trip production. The transportation consultant also could consider using an additional source of trip generation data from a firm called Spack Consulting.

#### Response:

Trip and parking observations were taken at an adult use dispensary site in Millbury, Massachusetts. A comparison of the estimated weekday evening and Saturday midday peak hour trips using the ITE rates and the observed rates is provided on Table 1A below.

Table 1A
Trip Generation Comparison

-		d Marijuana
	Dispensa	ry (3,000 sf)
Time Period/Direction	ITE"	Observed
Weekday Evening Peak Hour		
Entering	33	41
<u>Exiting</u>	<u>33</u>	43
Total	66	84
Saturday Midday Peak Hour		
Entering	51	42
<u>Exiting</u>	_58	45
Total	109	<del>87</del>

<sup>&</sup>lt;sup>a</sup>Based on ITE LUC 882, Marijuana Dispensary

As shown on Table 1A, using the trip generation rates observed in Millbury. Massachusetts, the Project is expected to generate 84 vehicle trips (41 entering and 43 exiting) during the weekday evening peak hour, and 87 vehicle trips (42 entering and 45 exiting) during the Saturday midday peak hour. These trips are graphically depicted on Figure 6R using the same methodology presented in the July 2020 Transportation Impact Assessment (the "July 2020 TIA"), with the resulting 2027 Build traffic volumes are graphically depicted on Figure 7R.

Revised intersection analysis is presented on Tables 8R and 9R. There was not a substantial change in overall intersection operations between the two trip generation models.

#### Comment:

On Figure 7, it does not appear that all the projected project-generated trips have been added correctly to the No-Build trips. The Build trips should be recalculated and the intersection level of service analysis rerun with the correct volumes. The Build volumes may also need to be recalculated based on the issue described above regarding use of the ITE trip generation rates. The conclusions of the report should be modified as appropriate based on the reanalysis.

#### Response:

The volumes shown on Figure 7 of the July 2020 TIA have been confirmed. In brief, those volumes were created by first removing the volumes expected to be generated by the backfill of the existing bank on site (Presented on Figure A-5) and then incorporating the volumes expected to be generated by the Project (Figures 6 and 6R) from the No Build volumes (Figure 4).

Comment:

The Executive Committee concluded that following major factors in the TIA analyses are appropriate for the Existing, No-Build and Build Conditions:

- a. Analysis of only the weekday evening peak hour, assuming the dispensary is not open during the morning peak hour.
- b. Adjustment of traffic volume counts taken in June of this year by 2.05 to account for lower volumes due to the effect of the COVID-19 pandemic. The adjustment was based on the ratio of the 2016 traffic volume on Broadway west of Alewife Brook Parkway (increased by 1.02 for growth in traffic to 2020) to the June 2020 volume on Broadway east of Sunnyside Ave.
- c. Use of a future design year of 2027.
- d. Use of an annual growth rate of 0.05 percent over seven years for a total adjustment of 4.0 percent for background traffic based on existing traffic growth trends in the region.
- e. Including traffic that would be generated by proposed new development in the area of the project in future No-Build traffic volumes.
- f. Distribution of project generated traffic based on the distribution of existing traffic in the area.

**Response:** No comment required.

Comment: Column 3 in Table 1 is incorrectly labeled as Main St at Clarks Rd. It should read Broadway at Sunnyside Ave. Please confirm the data are correct for that location.

**Response:** Noted, the header should read "Broadway at Sunnyside Ave." The data presented is correct.

Comment: The footnote on Table 2 should be corrected to refer to the appropriate ITE land use.

**Response:** Noted, the footnote should read "Based on ITE LUC 882, *Marijuana Dispensary*". The data presented is correct.

Comment:

The discussion of Table 4 on the bottom of page 17 incorrectly states that volume increases from No-Build to Build are anticipated to be 1.2 percent or less during the Saturday midday peak-hour. The percent increase on Broadway east of Sunnyside Ave is shown in the table as 90 vehicles or 8.6 percent. The table does not include the volume increase on Broadway east of Sunnyside Ave in the evening peak hour. This information should be included in Table 4.

Response:

Saturday midday peak hour traffic volume information was not available at the intersection of Route 16 at Broadway. That being said, Saturday midday peak hour traffic volumes appear comparable to the weekday evening peak hour traffic volumes along Broadway and at the Broadway at Sunnyside Avenue intersection. As a point of reference, the weekday evening peak hour traffic volume increase (utilizing the ITE trip rates) along Broadway east of Sunnyside Avenue is expected to be 23 vehicles, or approximately a 2.0% increase. A revised Table 4R is provided below, using the data from the observed trip generation rates.

Table 4R
PEAK HOUR TRAFFIC-VOLUME INCREASES

Location/Peak Hour	2027 No-Build	2027 Build	Traffic Volume Increase Over No-Build	Percent Increase Over No-Build
Broadway, east of Alewife Brook Parkway: Weekday Evening	997	1,005	8	0.8%
Broadway, east of Sunnyside Avenue:				
Weekday Evening	1,131	1.169	38	3.4%
Saturday Midday	1,041	1,114	73	7.0%
Broadway, west of the Project Site Driveway:				
Weekday Evening	1.065	1,075	10	0.9%
Saturday Midday	1,002	1,009	7	0.7%
Alewife Brook Parkway, north of Broadway:				
Weekday Evening	2,111	2,125	14	0.7%
Alewife Brook Parkway, south of Broadway.				
Weekday Evening	2,123	2,139	16	0.8%

## Comment:

The discussion of Table 5 on page 18 incorrectly states that "the available lines of sight for motorists exiting onto Sunnyside Avenue in both directions exceed the recommended minimum sight distance". The 110' sight distance reported to the south is less than the stated minimum of 155' shown in Table 5. It is also not indicated if that sight distance calculation considers the two street trees and two parked cars on the street between the driveway and Broadway. This may not be a significant issue based on the projection of all traffic exiting the driveway turning right and this memorandum's recommendation of restricting the driveway to right turns only.

#### Response:

The available 110 foot is the distance to Broadway from the site driveway, and a clear line of sight is available through the intersection. It should be noted that any motorist approaching from Broadway would be performing a left-turning or right-turning maneuver, and would therefore be travelling at a speed less than 25 mph.

## Comment:

The Parking section starting on page 25 does not indicate the expected Saturday or weekday parking demand, or the parking requirements in the Town's zoning bylaw. The Parking section should reference both ITE parking demand (or similar sites in Massachusetts) and the zoning bylaw. Also, it does not indicate how employee parking will be addressed. The TIA should show how the rideshare spaces in front of the building would be signed and marked. This would require Select Board approval. The TIA should clarify if the project will pay for the signing and marking.

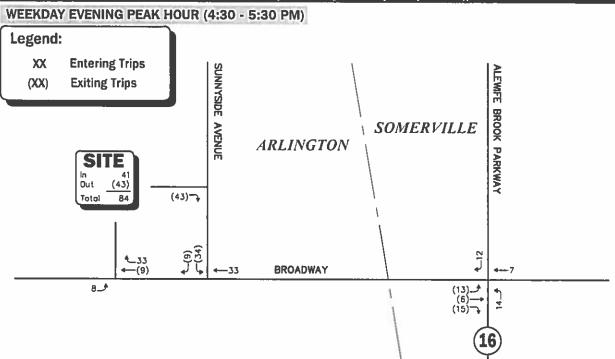
## Response:

As mentioned previously, overall (employee and patron) parking observations were conducted at the Millbury, Massachusetts dispensary site. These observations showed a maximum parking rate of 5.68 per thousand square feet (approximately 17 spaces) during a weekday, with a maximum rate of 5.14 (approximately 15 spaces) expected during a

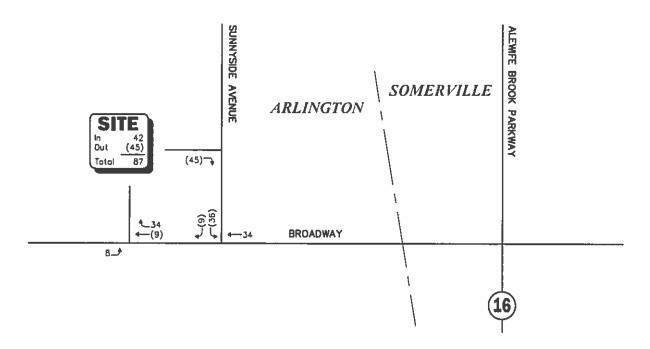
Saturday. As noted in the July 2020 T1A, 12 of the parking spaces on the Project site will be allocated for dispensary use, with approximately 62 on-street parking spaces currently provided along Broadway.

Employee parking will be accommodated within the 12 on-site spaces, with any patron parking accommodated byway of the on-street parking. A conceptual plan showing the recommended parking signage within the area has been provided as an attachment. The proponent will provide up to \$2,500 for the pavement markings and signage enhancements within the immediate area.

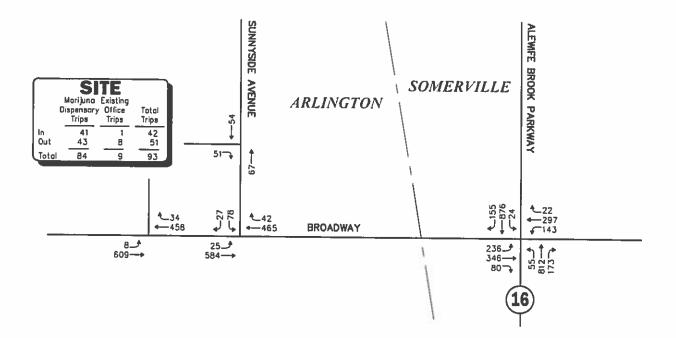
We trust that these responses adequately addresses the comments and we are available for further clarification if needed.



## SATURDAY MIDDAY PEAK HOUR (12:00 - 1:00 PM)







# SATURDAY MIDDAY PEAK HOUR (12:00 - 1:00 PM)

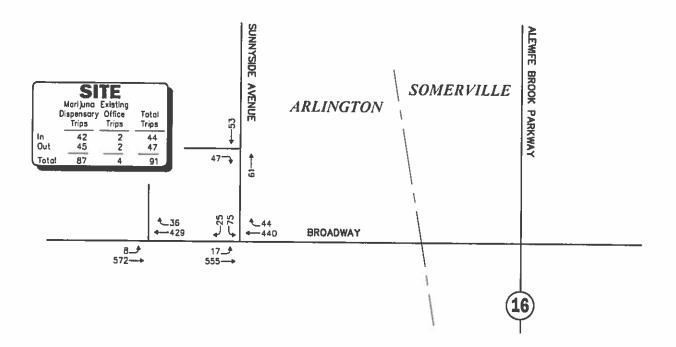




Figure 7R

2027 Build Peak Hour Traffic Volumes

Table 8R SIGNALIZED INTERSECTION LEVEL-OF-SERVICE SUMMARY

		2020 E	2020 Existing			2027 N	2027 No-Build			2027	027 Build	
Signalized Intersection/Peak Hour	A/C	Delay	,S01	Queue Avg/95	A/C	Delay	SOT	Queue Avg/95 <sup>th</sup>	N/C	Delay	SOT	Queuc Avg/95 <sup>th</sup>
Route 16 at Broadway												
Weekday Evening:												
Broadway EB LT	4.46	>80.0	Ŀ	386/495	4 93	>80.0	ir.	431/544	5 07	>80.0	<u>: -</u>	145/561
Broadway EB TH RT	1.20	>80.0	<u>:-</u>	458/626	1.33	>80.0	ш	543/713	136	>80.0	. 11.	564/736
Broadway WB LT TH RT	Ξ	>80.0	Ľ	235/348	1 19	>80.0	**	262/377	1.21	>80.0	. <u>te</u>	267/383
Route 16 NB LT TH RT		>80.0	Ŀ	523/661	1,33	>80 0	ii.	634/773	1.40	>80.0	. <u>t-</u>	658/798
Route 16 SB LT TH RT	1 02	73.7	ш	521/660	1.15	>80 0	ie.	610/750	117	>80 0	. 11	618/760
Overall	1	>80.0	íz,	1	1	>80.0	<u>t-</u>	1	1	>80.0	<u> 1</u>	. 1

\*Volume-to-capacity ratio.
\*Pointrol (signal) delay per vehicle in seconds.
\*Level-of-Service
\*Queue length in feet
\*You will be southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Table 9R UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersectional Peak Itomand*         Demand*         Delay*         LOS         Percentile         Delay*         LOS         Percentile         Delay*         Consoler Peak Itomand         Delay*         LOS         Percentile         Delay*         Delay*         LOS         Percentile         Delay*         Delay*         LOS         Percentile         Delay*         Delay* <th< th=""><th></th><th></th><th>2020 E</th><th>2020 Existing</th><th></th><th></th><th>2027 N</th><th>2027 No-Build</th><th></th><th></th><th>2027</th><th>2027 Build</th><th>2</th></th<>			2020 E	2020 Existing			2027 N	2027 No-Build			2027	2027 Build	2
383 03 A 0 609 04 A 0 609 04 A 0 609 04 A 0 4444 00 A 0 0 487 00 A 0 0 487 00 A 0 0 609 04 105 389 E 4444 00 A 0 0 487 00 A 0 0 572 03 A 0 572 03 A 0 572 03 A 13 00 A 0 617 01 A 13 00 A 0 612 00 A 0 617 01 A 1429 00 A 0 617 01 A 0 617 01 A 148 00 A 0 677 01 A 0 617 01 A 148 00 A 0 677 01 A 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Unsignalized Intersection/ Peak Hour/Moyement	Demand*	Delay	,SOT	Queue 95 <sup>th</sup> Percentile	Demand	Delay	SO1	Queue 95 <sup>th</sup> Percentile	Demand	Delay	SOT	Queue 95 <sup>th</sup> Percentife
35.5	Weekday Ivening	f	ć	į	3	5				ļ			
32         206         C         1         82         311         D         2         105         389         E           413         0.0         A         0         572         0.3         A         0         572         0.3         A           413         0.0         A         0         469         0.0         A         0         484         0.0         A           32         190         C         1         78         264         D         2         100         A         0         A           413         0.0         A         0         612         0.0         A         0         617         0.1         A           429         0.0         A         0         612         0.0         A         0         617         0.1         A           429         0.0         A         0         467         0.0         A         0         0         445         0.0         A           445         0.0         A         0         445         0.0         A         0         0         4         0         0         A           448         0.0	Broadway EB E1 111 Broadway WB TH RT	283	00	<b>4</b> 4	0 0	909	0 0	< <	00	507	700	< <	0 0
545         0.2         A         0         572         0.3         A         0         572         0.3         A         0         572         0.3         A           413         0.0         A         0         469         0.0         A         0         484         0.0         A           583         0.0         A         0         612         0.0         A         0         617         0.1         A           429         0.0         A         0         617         0.0         A         0         67         0.0         A           4429         0.0         A         0         617         0.0         A         0         617         0.0         A           4449         0.0         A         0         446         0.0         A         0         465         0.0         A           448         0.0         A         0         446         0.0         A         0         67         0.0         A           48         0.0         A         0         67         0         0         67         0         0         0         0         0         0	Sunnyside Ave SB LT RT	32	20.6	Ü	-	82	31.1	0	0 61	105	38.9	< ⊞	a m
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32     190     C     1     78     264     D     2     100     313     D       583     0.0     A     0     612     0.0     A     0     617     0.1     A       429     0.0     A     0     617     0.1     A     0     67     0.0     A       404     0.0     A     0     677     0.1     A     0     465     0.0     A       404     0.0     A     0     677     0.1     A     0     465     0.0     A       404     0.0     A     0     67     0.0     A     0     67     0.0     A       48     0.0     A     0     67     0.0     A     0     67     0.0     A       24     0.0     A     0     67     0.0     A     0     67     0.0     A       35     0.0     A     0     61     0.0     A     0     61     0.0     A       39     0.0     A     0     61     0.0     A     0     61     0.0     A       33     0.0     A     0     61     0.0     A     0	Broadway WB TH RT	413	0.0	<	0	469	0.0	V	0	484	0 0	<	0
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eway EBLTRT         8         8         A         0         28         87         A         0         51         88         A           use NB TII         48         00         A         0         67         00         A         0         67         00         A           eway EB TR TI         24         0         A         0         54         0         A         0         A           eway EB LT RT         2         85         A         0         25         87         A         0         47         88         A           ue NB TH         33         00         A         0         61         0         A         0         A           n c SB TH         30         0         A         0         53         0         A         0         A	yside Avenue at the Project Site way Veekday Evening:												
ue NB TII         48         00         A         0         67         00         A         0         67         00         A           eway EB LT RT         24         00         A         0         54         00         A         0         54         00         A           eway EB LT RT         2         8.5         A         0         25         8.7         A         0         47         8.8         A           ue NB TH         33         0.0         A         0         61         0.0         A         0         61         0.0         A           ue SB TH         30         0.0         A         0         53         0.0         A	Project Site Driveway EB LT RT	30	5.5	<	0	28	8.7	<	0	51	00	<	0
texasy EB LT RT         24         00         A         0         54         00         A         0         54         00         A           cway EB LT RT         2         8.5         A         0         25         8.7         A         0         47         8.8         A           ue NB TH         33         0.0         A         0         61         0.0         A         0         A           ue SB TH         30         0.0         A         0         53         0.0         A	Sunnyside Avenue NB TH	48	00	<	0	29	0.0	<	0	19	0.0	<	0
eway EB LT RT         2         8 5         A         0         25         8 7         A         0         47         8 8         A           use NB Til         33         0.0         A         0         61         0.0         A         0         61         0.0         A           uc SB Til         30         0.0         A         0         53         0.0         A	Sunnyside Avenue SB TH aturday Midday	7.7	0.0	<	0	75	00	<	0	54	0.0	<	0
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30 00 A 0 53 00 A 0 53 00 A	Sunnyside Avenue NB TB	33	0.0	<	0	19	0.0	4	0	99	0.0	<	0
	Sunnyside Avenue SB TH	30	00	٧	0	53	0.0	٧	0	53	0.0	<	0

\*Volume-to-capacity ratio
\*Control (signal) delay per vehicle in seconds
\*Level-of-Service
\*Queue length in vehicles
\*\text{Volume length} in vehicles
\*\text{NB} = northbound, SB = southbound, EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements, RT = right-turning movements.

# **ATTACHMENTS**

TRIP-GENERATION AND PARKING CALCULATIONS INTERSECTION CAPACITY ANALYSIS CONCEPTUAL IMPROVEMENT PLAN



# Empirical Weekday Evening Peak Hour Rate = 27.84

$$T = 27.84 \times (3.000) = 83.52$$
  
 $T \approx 84 [41 Enter - 43 Exit]$ 

# **Empirical Saturday Midday Peak Hour Rate = 28.92**

$$T = 28.92 \times (3.000) = 86.76$$
  
 $T \approx 87 [42 Enter - 45 Exit]$ 

# VAI Calculations

Job:

Millbury

Job Number:

<u>8667</u>

Location:

266 N. Main Street

Date:

7/29/20

Title:

Traffic Count (Weekday)

Sheet:

<u>1 of 1</u>

Calculated by:

<u>SRF</u>

Size:

3,700 SF

	Start				Hourly	Trip Rate	Parking	Parking
	Time	Ins	Outs	Total	Total	Hourly Total	Demand	Demand Ratio
	7:00AM	0	0	0		0.00	1	0.27
	7:15	1	0			0.00	2	0.54
	7:30	1	0			0.00	3	0.81
	7:45	2	0	2	4	1.08	5	1.35
	8:00		0	I	5	1.35	6	1.62
	8:15	3	0	3	7	1.89	9	2.43
	8:30	1	0	1	7	1.89	10	2.70
	8:45	0	0	0	5	1.35	10	2.70
	9:00		0		5	1.35	11	2.97
	9:15	0	0	0	2	0.54	11	2.97
	9:30	0	Ö	0	<del></del>	0.27	11	2.97
	9:45	2	0	2	3	18.0	13	3,51
	10:00	7	5	12	14	3.78	15	4.05
>	10:15	Ť	7	18	32	8.65	19	
	10:30	<del>- ii</del>	15	26	58	15.68		5.14
	10:35	10	7	17	73	19.73	15	4.05
	11:00	7	10	17	78	21.08	18	4.86
	11:15	10	8	18	78	21.08	15	4.05
	11:30	6	8	14	66		17	4.59
		7	6	13	62	17.84	15	4.05
	11:45	9				16.76	16	4.32
	12:00		10	19	64	17.30	15	4.05
	12:15	7	6	[3	59	15.95	16	4.32
	12:30	13	7	20	65	17.57	22	5.95
	12:45	- 8	15	23	75	20.27	15	4.05
	1:00	10	9	19	75	20.27	16	4.32
J	1:15	9	5	14	76	20.54	20	5.41
	1:30	5	8	13	69	18.65	17	4.59
	1:45	7	5	12	58	15.68	19	5.14
	2:00	10	9	19	58	15.68	20	5.41
l	2:15	5	7	12	56	15.14	18	4.86
	2:30	4	3	7	50	13.51	19	5.14
[	2:45	7	6	13	51	13.78	20	5,41
	3:00	10	9	19	51	13.78	21	/5.68
ſ	3:15	8	12	20	59	15.95	17	4.59
ľ	3:30	TI I	П	22	74	20.00	17	4.59
- 1	3:45	7	9	16	77	20.81	15	4.05
>[	4:00	11	10	21	79	21.35	16	4.32
	4:15	Ti	13	24	83	22.43	14	3,78
	4:30	17	10	27	88	23.78	21	5.68
- 1	4:45		20	31	103	27.84	12	3.24
- 1	5:00	10	10	20	102	27.57	12	3.24
h	5:15	11	13	24	102	27.57	10	2.70
i	5:30	6	7	13	88	23.78	9	2.43
ŀ	5:45	12	7-	19	76	20.54	14	3.78
ŀ	6:00	9	<del>Í</del> 1	20	76	20.54	12	3.76
ŀ	6:15	<u>15</u>	12	27	79	21.35	15	4.05
ŀ	6:30	8	12	20	86	23.24		
-	6:45	10	8	18	85	22.97	11	2.97
					- 02	22.71	13	3.51
-	Total	342	330	672				L
	Pk Hr Total	50	53	103				

1 car in lot at 7:00 am / 13 cars in lot at 7 pn

# VAI Calculations

Job:

Millbury

Location:

266 N. Main Street

Title:

Traffic Count (Saturday)

Calculated by: SRF

Job Number:

8667

Date:

7/25/20

Sheet:

1 of 1

Checked by:

Sizc

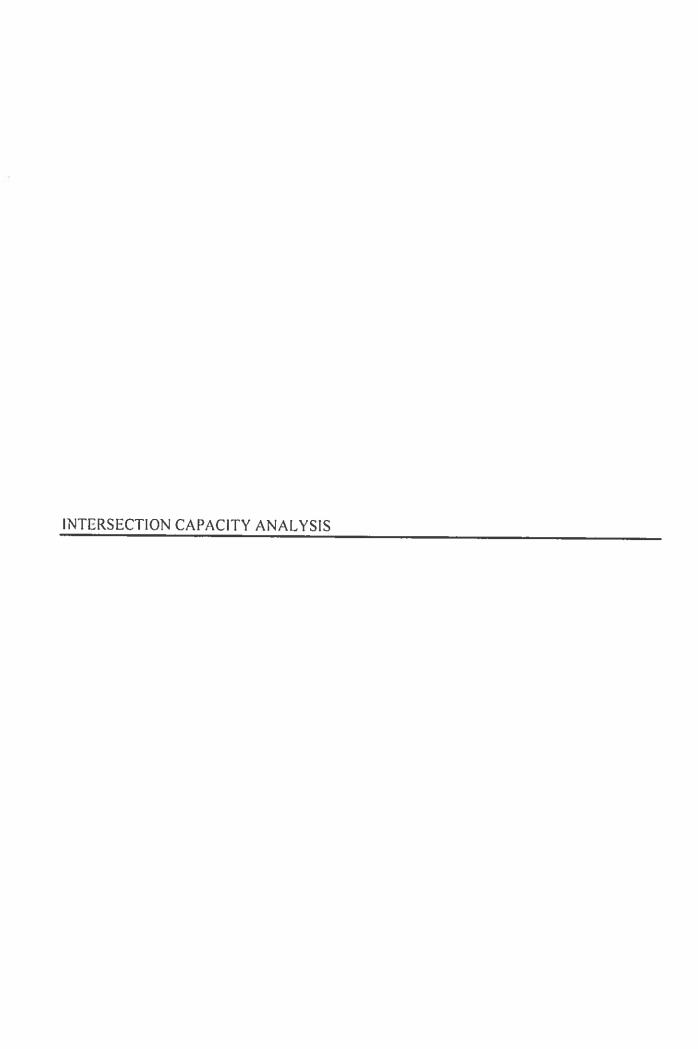
3,700 SF

	Start				Hourly	Trip Rate	Parking	Parking
L	Time	ins	Outs	Total	Total	Hourly Total	Demand	Demand Ratio
> [1	11:00AM	14	14	28		0.00	18	4.86
	11:15	12	14	26		0.00	16	4.32
	11:30	11	13	24		0.00	14	3.78
	11:45	1.5	14	29	107	28.92	15	4.05
L	12:00	8	10	18	97	26.22	13	3.51
	12:15	14	ŧ1	25	96	25.95	16	4.32
	12:30	13	11	24	96	25.95	18	4.86
	12:45	10	10	20	87	23.51	18	4.86
	1:00	10	11	21	90	24.32	17	4.59
	1:15	9	8	17	82	22.16	18	4.86
	1:30	10	9	19	77	20.81	19	5.14
	1:45	6	11	17	74	20.00	14	3.78
	Total	132	136	268				
7	Pk Hr Total	52	55	107				

<sup>\* 17</sup> cars and I box truck in lot at 11:00 am.

<sup>\*\*\* 14</sup> cars in lot at 2:00 pm.

<sup>\*\*</sup> I of the outs in interval I (11:00-11:15) was the box truck



# Lanes, Volumes, Timings 1: Alewife Brook Parkway & Broadway

	۶	-	7	1	<b>←</b>	4	4	†	<i>p</i>	-	<b>+</b>	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	Ť,			414			414			474	
Traffic Volume (vph)	236	346	80	143	297	22	55	812	173	24	876	155
Future Volume (vph)	236	346	80	143	297	22	55	812	173	24	876	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	0		125	0		0	0		0	0	THE STATE OF	0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25		TUS	25		650000
Lane Util, Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.972			0.993			0.975	IVANUE	1325 (119	0.978	0,00
Flt Protected	0.950				0.985			0.997			0.999	
Satd. Flow (prot)	1745	1771	0	0	3391	0	0	3275	0	0	3292	0
Flt Permitted	0.160				0.701	-		0.599	J		0.761	U
Satd. Flow (perm)	294	1771	0	0	2414	0	0	1968	0	0	2508	0
Right Turn on Red			Yes	-		Yes	_	1000	Yes	•	2000	Yes
Satd. Flow (RTOR)		8			3			20	NI DO		17	103
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		175			307			364			295	
Travel Time (s)		4.0			7.0			8.3			6.7	
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0.32
Adj. Flow (vph)	274	402	93	149	309	23	57	846	180	26	952	168
Shared Lane Traffic (%)				, 10	000	20	0,	040	100	20	304	100
Lane Group Flow (vph)	274	495	0	0	481	0	0	1083	0	0	1146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11	3		11			0	- ugut	COIL	0	ragin
Link Offset(ft)		0			0			0			ő	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								771			10	
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15	1,00	9
Number of Detectors	1	2		1	2		1	2		1	2	J
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel					OI LX		OITEX	01.6		OITEX	OFFEX	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	MERIL	94		0.0	94		0.0	94		0.0	94	
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CITE?	
Detector 2 Channel		OI. LA			OFFER			CITEX			CI+Ex	
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Dage	0.0		Dann	0.0	
7411 17PO	1 61111	INV		remi	INA		Perm	NA		Perm	NA	

Lane Group	Ø9			
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)			7/100000	
Lane Util. Factor				
Frt				
Fit Protected				
Satd. Flow (prot)				
Fit Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Number of Detectors				
Detector Template				
Leading Detector (ft)				
Trailing Detector (ft)				
Detector 1 Position(ft)				
Detector 1 Size(ft)				
Detector 1 Type				
Detector 1 Channel				
Detector 1 Extend (s)				
Detector 1 Queue (s)				
Detector 1 Delay (s)				
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				
Detector 2 Extend (s)				
Turn Type				

# 1: Alewife Brook Parkway & Broadway

	<b>*</b>	-	-	•	<b>←</b>	*	4	<b>†</b>	-	<b>\</b>	ļ.	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Protected Phases		4	100		8		2006	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	31.0	31.0		26.0	26.0		56.0	56.0		56.0	56.0	
Total Split (%)	23.1%	23.1%		19.4%	19.4%		41.8%	41.8%		41.8%	41.8%	
Maximum Green (s)	25.0	25.0		20.0	20.0		50.0	50.0		50.0	50.0	
Yellow Time (s)	4.0	4.0		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		2.0	2.0	
Lost Time Adjust (s)	0.0	-20			-2.0			-2.0		4.0	-2.0	
Total Lost Time (s)	6.0	4.0			4.0			4.0			4.0	
Lead/Lag								4.0			4.0	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	110110	110110		HOHE	HOIG		IVINI	IAIIII		PAHILI	IVIII)	
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	25.0	27.0			22.0			52,0			52.0	
Actuated g/C Ratio	0.19	0.20			0.16			0.39			0.39	
v/c Ratio	5.07	1.36			1.21			1.40			1.17	
Control Delay	1885 6	220.3			161.7			219.3				
Queue Delay	0.0	0.0			0.0			0.0			122.7	
Total Delay	1885.6	220.3			161.7						0.0	
LOS	F	720.5 F			F			219.3			122.7	
Approach Delay		813.6			161.7			F 240.2			F	
Approach LOS		613.0 F	Sales Sales		101.7 F			219.3			122.7	
Queue Length 50th (ft)	~445	~564			-267	- 4		F			F	
Queue Length 95th (ft)	#561	#736						~658			-618	
Internal Link Dist (ft)	#301				#383			#798			#760	
		95			227			284			215	
Turn Bay Length (ft)	F.	202										
Base Capacity (vph)	54	363			398			775			983	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	5.07	1.36			1.21			1.40			1.17	
Intersection Summary	12022	SOUNT	SVINES	535	100		TOWN.		ige (e)			3 7 5 18
Area Type:	Other											
O I												

Cycle Length: 134

Actuated Cycle Length: 134

Natural Cycle: 135

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 5.07

Intersection Signal Delay: 310.9

Intersection Capacity Utilization 108.9%

Intersection LOS: F ICU Level of Service G

Analysis Period (min) 15

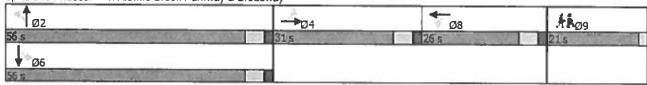
Protected Phases Defector Phase Switch Phase Switch Phase Switch Phase Switch Phase Switch Phase Switch Phase Minimum Initial (s) 5.0 Minimum Split (s) 21.0 Total Split (%) 6% Maximum Green (s) 19.0 Yellow Time (s) 2.0 All-Red Time (s) 0.0 Lost Time Adjust (s) Total Lost Time (s) Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode Ped Walk Time (s) 13.0 Flash Dont Walk (s) 6.0 Pedestrian Calls (#/hr) 64 Act Effct Green (s) Actuated g/C Ratio v/c Ratio Control Delay Cueue Delay Total Delay Los Approach Delay Approach Delay Approach LoS Queue Length 50th (ft) Queue Length 50th (ft) Queue Length 50th (ft) Internal Link Dist (ft) Base Capacity (vph) Starvation Cap Reductin Storage Cap Reductin Storage Cap Reductin Reduced v/c Ratio	ermitted Phases elector Phase witch Phase linimum Initial (s) 5.0 linimum Spiti (s) 21.0 obtal Spiti (s) 21.0 obtal Spiti (s) 16% laximum Green (s) 19.0 ellow Time (s) 2.0 ll-Red Time (s) 0.0 sst Time Adjust (s) obtal Lost Time (s) sad/Lag sad-Lag Optimize? ehicle Extension (s) 3.0 ecall Mode Ped lalk Time (s) 13.0 ash Dont Walk (s) 6.0 ash Some Calls (#/hr) 64 at Effct Green (s) tutaled g/C Ratio c Ratio ontrol Delay ueue Delay stal Delay opproach LOS leue Length 50th (ft) leueu Length 95th (ft) leueue Length 95th (ft) leueuel Capth (ft) ses Capacity (vph) arvation Cap Reductn libback Cap Reductn lorage Cap Reductn	Lane Group	Ø9	No. of the second	The same of the sa	
Detector Phase Switch Phase Switch Phase Switch Phase Switch Phase Minimum Initial (s)  5.0 Minimum Split (s)  21.0 Total Split (s)  21.0 Total Split (s)  16% Maximum Green (s)  Yellow Time (s)  2.0  All-Red Time (s)  Lost Time Adjust (s) Total Lost Time (s)  Lead/Lag  Lead-Lag Optimize? Vehicle Extension (s)  Recall Mode  Ped Walk Time (s)  13.0 Recall Mode  Ped Walk Time (s)  13.0 Rescall Mode  Ped Walk Time (s)  6.0 Pedestrian Calls (#/hr)  Act Effct Green (s)  Actuated g/C Ratio v/c Ratio Control Delay Cueue Delay Total Delay LOS  Approach Delay Approach LOS Queue Length 50th (ft) Internal Link Dist (ft) Internal Link	elector Phase witch Phase linimum Initial (s) 5.0 linimum Split (s) 21.0 otal Split (%) 16% laximum Green (s) 19.0 ellow Time (s) 2.0 li-Red Time (s) 0.0 osst Time Adjust (s) otal Lost Time (s) osat Time (s) sad/Lag sad-Lag Optimize? ehicle Extension (s) ecall Mode Ped falk Time (s) 13.0 esall Mode Ped falk Time (s) 6.0 edestrian Calls (#/hr) desterian Calls (#/hr) desterian Calls (#/hr) otal Effet Green (s) clusted g/C Ratio c Ratio ontrol Delay useu Delay useu Delay useu Delay useu Delay useu Length 95th (ft) leveu Cap Reductn drage Cap Reductn drage Cap Reductn drage Cap Reductn drage Cap Reductn dradeced v/c Ratio			Taxin		
Switch Phase  Minimum Initial (s) 5.0  Minimum Split (s) 21.0  Total Split (%) 16%  Maximum Green (s) 19.0  Yellow Time (s) 2.0  All-Red Time (s) 2.0  Lost Time Adjust (s)  Total Lost Time (s)  Lead/Lag  Lead-Lag Optimize?  Vehicle Extension (s) 3.0  Recall Mode Ped  Walk Time (s) 13.0  Pedestrian Calls (#/hr) 64  Act Effct Green (s)  Actuated g/C Ratio W/c Ratio  Control Delay  Queue Delay  Total Delay  Approach Delay  Approach LOS  Queue Length 50th (ft)  Queue Length 50th (ft)  Queue Length 50th (ft)  Queue Length 95th (ft)  Irm Bay Length (ft)  Jasse Capacity (yph)  Blasravation Cap Reducth  Solrage Cap Reducth  Solrage Cap Reducth	witch Phase linimum Spitt (s) 5.0 linimum Spitt (s) 21.0 otal Spitt (%) 16% aximum Green (s) 19.0 ellow Time (s) 2.0 ll-Red Time (s) 0.0 sst Time Adjust (s) obtal Lost Time (s) aad/Lag ead-Lag Optimize? ehicle Extension (s) 3.0 ecall Mode Ped alk Time (s) 13.0 ash Dont Walk (s) 6.0 edestrian Calls (#/hr) 64 at Effot Green (s) clutated g/C Ratio or Ratio ontrol Delay useue Delay obtal Delay proach LOS useue Length 50th (ft) lerenal Link Dist (ft) rm Bay Length (ft) sse Capacity (vph) arration Cap Reductn orage Cap Reductn	Permitted Phases				
Minimum Initial (s) 5.0 Minimum Split (s) 21.0 Total Split (%) 16% Maximum Green (s) 19.0 Yellow Time (s) 2.0 All-Red Time (s) 0.0 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode Ped Walk Time (s) 13.0 Flash Dont Walk (s) 6.0 Pedestrian Calls (#/hr) 64 Act Effct Green (s) Actuated g/C Ratio V/c Ratio Control Delay Queue Delay Total Delay LOS Approach LOS Queue Length 50th (ft) Queue Length 95th (ft) Internal Link Dist (ft) Turn Bay Length (ft) Base Capacity (vph) Starvation Cap Reductn Slorage Cap Reductn Slorage Cap Reductn Slorage Cap Reductn	linimum Initial (s) 5.0 linimum Split (s) 21.0 linimum Split (s) 21.0 lotal Split (%) 16% laximum Green (s) 19.0 lellow Time (s) 2 0 ll-Red Time (s) 2 0 ll-Red Time (s) 0.0 lost Time Adjust (s) lotal Lost Time (s) saad-Lag Optimize? ehicle Extension (s) 3.0 lotal Lost Time (s) lotal Lost Lost Lost Lost Lost Lost Lost Lost	Detector Phase				
Minimum Split (s) 21.0 Total Split (s) 21.0 Total Split (%) 16% Maximum Green (s) 19.0 Yellow Time (s) 2 0 All-Red Time (s) 0.0 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode Ped Walk Time (s) 13 0 Flash Dont Walk (s) 6.0 Pedestrian Calls (#/hr) 64 Act Effct Green (s) Actuated g/C Ratio w/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 95th (ft) Oueue Length 95th (ft) Irrn Bay Length (ft) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Storage Cap Reductn	linimum Split (s) 21.0  otal Split (s) 21.0  otal Split (%) 16%  aximum Green (s) 19.0  ellow Time (s) 2 0  li-Red Time (s) 0.0  sst Time Adjust (s)  otal Lost Time (s) 3  add/Lag  add-Lag Optimize?  elicic Extension (s) 3.0  ecall Mode Ped  falk Time (s) 13.0  esho Dont Walk (s) 6.0  esterior Calls (#/hr) 64  et Effet Green (s)  tutated g/C Ratio cratio  ontrol Delay  ueue Delay  tatal Delay  DS  DS  DPOroach LOS  ueue Length 95th (fit)  ueueue Capacity (vph)  arravation Cap Reductn  orage Cap Reductn  orage Cap Reductn  orage Cap Reductn  orduced v/c Ratio	Switch Phase				
Minimum Split (s) 21.0 Total Split (s) 21.0 Total Split (%) 16% Maximum Green (s) 19.0 Yellow Time (s) 2 0 All-Red Time (s) 0.0 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode Ped Walk Time (s) 13 0 Flash Dont Walk (s) 6.0 Pedestrian Calls (#/hr) 64 Act Effct Green (s) Actuated g/C Ratio w/c Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 95th (ft) Oueue Length 95th (ft) Irrn Bay Length (ft) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Storage Cap Reductn	linimum Split (s) 21.0  otal Split (s) 21.0  otal Split (%) 16%  aximum Green (s) 19.0  ellow Time (s) 2 0  li-Red Time (s) 0.0  sst Time Adjust (s)  otal Lost Time (s) 3  add/Lag  add-Lag Optimize?  elicic Extension (s) 3.0  ecall Mode Ped  falk Time (s) 13.0  esho Dont Walk (s) 6.0  esterior Calls (#/hr) 64  et Effet Green (s)  tutated g/C Ratio cratio  ontrol Delay  ueue Delay  tatal Delay  DS  DS  DPOroach LOS  ueue Length 95th (fit)  ueueue Capacity (vph)  arravation Cap Reductn  orage Cap Reductn  orage Cap Reductn  orage Cap Reductn  orduced v/c Ratio	Minimum Initial (s)	5.0			
Total Split (\$) 21.0 Total Split (\$) 16% Maximum Green (\$) 19.0 Yellow Time (\$) 2.0 All-Red Time (\$) 0.0 Lost Time Adjust (\$) Total Lost Time (\$) Lead/Lag Lead-Lag Optimize? Vehicle Extension (\$) 3.0 Recall Mode Ped Walk Time (\$) 13.0 Flash Dont Walk (\$) 6.0 Pedestrian Calls (#/hr) 64 Act Effct Green (\$) Actuated g/C Ratio v/c Ratio Control Delay Queue Delay Total Delay Los Approach LoS Queue Length 50th (ft) Queue Length 50th (ft) Uneue Length 95th (ft) Internal Link Dist (ft) Turn Bay Length (ft) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn Storage Cap Reductn	otal Split (s) 21.0  otal Split (%) 16%  laximum Green (s) 19.0  ellow Time (s) 2.0  ell-Red Time (s) 0.0  sot Time Adjust (s) obtal Lost Time (s)  sad/Lag  sad-Lag Optimize?  shicle Extension (s) 3.0  sads Dont Walk (s) 6.0  ads Dont Walk (s) 6.0  adstrian Calls (#/hr) 64  at Effct Green (s)  cutualed g/C Ratio  c Ratio  control Delay  sueue Delay  stal Delay  social Delay  sproach LOS  seeue Length 50th (ft)  serval Lingth 95th (ft)  serval Lingth 95th (ft)  serval Lingth 95th (ft)  serval Length (s) (th)  mr Bay Length (ft)  sec Capacity (vph)  arrardion Cap Reductn  dradecd v/c Ratio  drage Cap Reductn  dradecd v/c Ratio					
Total Split (%) 16%  Maximum Green (s) 19.0  Yellow Time (s) 2.0  All-Red Time (s) 0.0  Lost Time Adjust (s)  Total Lost Time (s)  Lead/Lag  Lead-Lag Optimize?  Vehicle Extension (s) 3.0  Recall Mode Ped  Walk Time (s) 13.0  Flash Dont Walk (s) 6.0  Pedestrian Calls (#/hr) 64  Act Effct Green (s)  Actuated g/C Ratio  v/c Ratio  Control Delay  Queue Delay  Total Delay  LOS  Approach Delay  Approach LoS  Queue Length 50th (ft)  Queue Length 95th (ft)  Internal Link Dist (ft)  Turn Bay Length (ft)  Base Capacity (vph)  Starvation Cap Reductn  Starvation Cap Reductn  Storage Cap Reductn  Storage Cap Reductn	otal Split (%) 16% aximum Green (s) 19.0 ellow Time (s) 2.0 ll-Red Time (s) 0.0 sst Time Adjust (s) otal Lost Time (s) sad/Lag sad-Lag Optimize? ehicle Extension (s) 3.0 ecall Mode Ped falk Time (s) 13.0 assh Dont Walk (s) 6.0 edestrian Calls (#/hr) 64 et Effet Green (s) cluated g/C Ratio o Ratio ontrol Delay useue Delay stal Delay opproach LOS useue Length 50th (ft) leue Length 50th (ft) leue Length 95th (ft) leue Length 95th (ft) leue Length (st) less Capacity (vph) arvation Cap Reductn orage Cap Reductn					
Maximum Green (s) 19.0 Yellow Time (s) 2 0 All-Red Time (s) 0.0 Lost Time Adjust (s) Total Lost Time (s) Lead/Lag Lead-Lag Optimize? Vehicle Extension (s) 3.0 Recall Mode Ped Walk Time (s) 13 0 Flash Dont Walk (s) 6.0 Pedestrian Calls (#/hr) 64 Act Effct Green (s) Actuated g/C Ratio V/C Ratio Control Delay Queue Delay Total Delay LOS Approach Delay Approach LOS Queue Length 50th (ft) Queue Length 95th (ft) Internal Link Dist (ft) Turn Bay Length (ft) Base Capacity (vph) Starvation Cap Reductn Storage Cap Reductn Storage Cap Reductn	laximum Green (s) 19.0 ellow Time (s) 2.0 ellow Time (s) 2.0 ellow Time (s) 0.0 esst Time Adjust (s) ead/Lag ead-Lag Optimize? elehicle Extension (s) 3.0 ecall Mode Ped falk Time (s) 13.0 esst Time (s) 1					
Yellow Time (s)       2 0         All-Red Time (s)       0.0         Lost Time Adjust (s)       10 0         Total Lost Time (s)       Lead/Lag         Lead-Lag Optimize?       Vehicle Extension (s)         Vehicle Extension (s)       3.0         Recall Mode       Ped         Walk Time (s)       13 0         Flash Dont Walk (s)       6.0         Pedestrian Calls (#/hr)       64         Act Effct Green (s)       Actuated g/C Ratio         v/c Ratio       Control Delay         Queue Delay       Control Delay         LOS       Approach LOS         Queue Length 50th (ft)       Queue Length 95th (ft)         Internal Link Dist (ft)       Queue Length 95th (ft)         Internal Link Dist (ft)       Base Capacity (vph)         Starvation Cap Reductn       Spillback Cap Reductn         Spillback Cap Reductn       Storage Cap Reductn	ellow Time (s) 2 0 II-Red Time (s) 0.0 sost Time Adjust (s) botal Lost Time (s) sad/Lag sad-Lag Optimize? shicle Extension (s) 3.0 secall Mode Ped salk Time (s) 13 0 sash Dont Walk (s) 6.0 sedestrian Calls (#/hr) 64 st Effct Green (s) stuated g/C Ratio c Ratio so Ratio so Ratio so Proach Delay sureue Delay stral Delay sproach LOS serue Length 50th (ft) serue Length 95th (ft) serue Length 95th (ft) serue Length (ft) ses Capacity (vph) sarvation Cap Reducth orage Cap Reductn siduced v/c Ratio					
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Lead-Lag Optimize?  Vehicle Extension (s) 3.0  Recall Mode Ped  Walk Time (s) 13.0  Flash Dont Walk (s) 6.0  Pedestrian Calls (#/hr) 64  Act Effct Green (s)  Actuated g/C Ratio  v/c Ratio  Control Delay  Queue Delay  Total Delay  LOS  Approach LoS  Approach LoS  Queue Length 50th (ft)  Queue Length 95th (ft)  Internal Link Dist (ft)  Base Capacity (vph)  Starvation Cap Reductn  Spillback Cap Reductn  Storage Cap Reductn	ead-Lag Optimize? ehicle Extension (s) 3.0 ecall Mode Ped alk Time (s) 13 0 eash Dont Walk (s) 6.0 edestrian Calls (#/hr) 64 et Effet Green (s) ctuated g/C Ratio c Ratio entrol Delay usue Delay bital Delay Deproach Delay proach LOS usue Length 50th (ft) usue Length 95th (ft) ernal Link Dist (ft) ernal Link Dist (ft) ernal Se Capacity (vph) envation Cap Reductn effect Green (s) envalue Cap Reductn effet Green					
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Queue Length 95th (ft) Internal Link Dist (ft) Turn Bay Length (ft) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn	ueue Length 95th (ft) sernal Link Dist (ft) sernal Link Dist (ft) see Capacity (vph) sernal Cap Reductn sillback Cap Reductn brage Cap Reductn seduced v/c Ratio					
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Turn Bay Length (ft) Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn	rn Bay Length (ft) use Capacity (vph) arvation Cap Reductn uillback Cap Reductn orage Cap Reductn udded v/c Ratio	Internal Link Diet /#\				
Base Capacity (vph) Starvation Cap Reductn Spillback Cap Reductn Storage Cap Reductn	arvation Cap Reductn  all Reductn  arration Cap Reductn  arration					
Starvation Cap Reductn  Spillback Cap Reductn  Storage Cap Reductn	arvation Cap Reductn villback Cap Reductn prage Cap Reductn educed v/c Ratio					
Spillback Cap Reductn Storage Cap Reductn	villback Cap Reductn Drage Cap Reductn Draged v/c Ratio		-			
Storage Cap Reductn	orage Cap Reductn duced v/c Ratio					
	educed v/c Ratio					
עבחחיבת איני עישוות						
	ersection Summary					

# 1: Alewife Brook Parkway & Broadway

- Volume exceeds capacity, queue is theoretically infinite.
   Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.

  Queue shown is maximum after two cycles.

Splits and Phases: 1: Alewife Brook Parkway & Broadway



Intersection	01570	NAME OF TAXABLE	3000	95514	E THE SE	HICKITYS!
Int Delay, s/veh	3.4					-
		-				
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	7+		M	
Traffic Vol, veh/h	25	584	465	42	78	27
Future Vol, veh/h	25	584	465	42	78	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized		None		C. C. Charles		
Storage Length				-	0	
Veh in Median Storage,	# -	0	0		0	
Grade, %		0	0		0	•
Peak Hour Factor	92	92	84	84	92	92
Heavy Vehicles, %	0	1	2	0	0	0
Mymt Flow	27	635	554	50	85	29
MYTHE TION	LI	000	004	JU	UJ.	23
TTO THE					44	
	lajor1		Major2		Vinor2	Con Partie
Conflicting Flow All	604	0	7.7	0	1268	579
Stage 1					579	
Stage 2					689	-
Critical Hdwy	4.1				6.4	6.2
Critical Hdwy Stg 1	-				5.4	
Critical Hdwy Stg 2	00.9			FAUE	5.4	Bur.
Follow-up Hdwy	2.2				3.5	3.3
Pot Cap-1 Maneuver	984				188	519
Stage 1	007				564	013
Stage 2	OZODA	usawa			502	
		- 7			302	-
Platoon blocked, %	001		ocesonte		400	640
Mov Cap-1 Maneuver	984	MG.			180	519
Mov Cap-2 Maneuver	-	-		7.5	180	*
Stage 1		198		Hi.	540	15
Stage 2		-		-	502	
Anneogoh	ED	SHEE	IAID		OD.	200000
Approach	EB	Sec.	WB		SB	r mark
HCM Control Delay, s	0.4		0		38.9	
HCM LOS					E	
	WEST	EBL	EBT	WBT	WBR.	SBLn1
Minor Lane/Major Mymt	40000000000					
Minor Lane/Major Mvmt			1 100-1			71h
Capacity (veh/h)		984			•	216
Capacity (veh/h) HCM Lane V/C Ratio		984 0.028	-			0.528
Capacity (veh/h) HCM Lane V/C Ratio HCM Control Delay (s)		984 0.028 8.8	0			0.528 38.9
Capacity (veh/h) HCM Lane V/C Ratio		984 0.028	-		20	0.528

Intersection	Maria	William?	3_1155	343	FALL	
int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		र्स	<b>^}</b>		W	
Traffic Vol, veh/h	17	555	440	44	75	25
Future Vol. veh/h	17	555	440	44	75	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized		None	-	None		None
Storage Length				-	0	-
Veh in Median Storage	# -	0	0		0	
Grade, %		0	0		0	
Peak Hour Factor	88	88	89	89	92	92
Heavy Vehicles, %	0	3	7	0	0	0
Mvmt Flow	19	631	494	49	82	27
Major/Minor	Major1	<b>E820</b>	Major2		Vinor2	4-73
Conflicting Flow All	543	0	-	0	1188	519
Stage 1	The state				519	
Stage 2		-			669	
Critical Hdwy	4.1	0.0			6.4	6.2
Critical Hdwy Stg 1		ales-ju			5.4	
Critical Hdwy Stg 2	-				5.4	
Follow-up Hdwy	2.2				3.5	3.3
Pot Cap-1 Maneuver	1036			TEA.	210	561
Stage 1	1000		-		601	301
Stage 2		#1	de la		513	7
Platoon blocked, %	dine di e				010	
Mov Cap-1 Maneuver	1036				204	561
Mov Cap-1 Maneuver	1000				204	301
Stage 1			i i		584	
			1		513	
Stage 2	11100		No.		013	
Anamach	EB	NI SANCE	WB		SB	
Approach HCM Control Delay, s	0.3	NAME OF TAXABLE	0		31.3	
HCM Control Delay, s	0.3		U		31.3 D	
HOM LOS					U	
Minor Lane/Major Mym		EBL	FRT	WBT	WAD	SRI n1
Capacity (veh/h)	North Contract of	1036	LD.I		MPIZ	
HCM Lane V/C Ratio		0.019				0.447
	E05-301		-			
HCM Control Delay (s)		8.5	0		TAKE:	
HCM Lane LOS	6465 T0721	A	Α			D
HCM 95th %tile Q(veh)		0.1		-	-	2.2

Intersection	1000	HZK.	Parties.		HE SEE	13273
Int Delay, s/veh	0.1					
2020303030303030303030		1110000	MOT	MOD	ODI	DOC
Movement	EBL		WBT	WBR	SBL	SBR
Lane Configurations		4	1>	0.4	M	
Traffic Vol, veh/h	8	609	458	34	0	0
Future Vol, veh/h	8	609	458	34	0	0
Conflicting Peds, #/hr	_ 0		_ 0	_ 0	0	0
Sign Control	Free		Free	Free	Stop	Stop
RT Channelized		None	100	None	-	110110
Storage Length	-			•	0	-
Veh in Median Storage	9,# -	-	0		0	
Grade, %		0	0		0	-
Peak Hour Factor	92		92	92	92	92
Heavy Vehicles, %	2		2	2	2	2
Mvmt Flow	9	662	498	37	0	0
Major/Minor	Malad	-	Anio-7	HE WAR	Macell	
	Major1		Major2		Minor2	FAT
Conflicting Flow All	535	0		0	1197	517
Stage 1	LOW ST			-	517	
Stage 2			-		680	
Critical Hdwy	4.12		-		6.42	6.22
Critical Hdwy Stg 1	-	-	•	-	5.42	25
Critical Hdwy Stg 2			300		5.42	107-
Follow-up Hdwy	2.218	•	-	-	3.518	3,318
Pot Cap-1 Maneuver	1033				205	558
Stage 1	-	-		-	598	
Stage 2	-				503	
Platoon blocked, %			-			
	1033				202	558
Mov Cap-2 Maneuver	. 500			-	202	000
Stage 1					590	
	•		25-00			
Stage 2					503	unatheur.
					9.11	
Approach	EB	SPAN	WB	No.	SB	SECOND !
HCM Control Delay, s	0.1		0		0	
HCM LOS					A	
					^	
Mandanas	THE	COL	Fr	I.V.C.T	14/000	201
Minor Lane/Major Mym		EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)		1033				THE S
HCM Lane V/C Ratio		0.008				
HCM Control Delay (s)		8.5	0	4	-	0
HCM Lane LOS		Α	Α			Α
HCM 95th %tile Q(veh)	N.V.	0	8 15			<b>ELPN</b>
	a Day loss I					-13-10

	777					
Intersection		. 64.0	L		778	DIAE.
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	LUL	4	7+	MINIT	N/	SUN
Traffic Vol, veh/h	8	572	429	36	0	0
Future Vol, veh/h	8	572	429	36	0	0
Conflicting Peds, #/hr	0	0	429	0	0	0
		Free	Free			
Sign Control RT Channelized	Free			Free	Stop	Stop
		None		None	- 0	
Storage Length	. 41	_	-	and the second	0	
Veh in Median Storage	,# -	0	0	- 12 <del>-</del>	0	
Grade, %		0	0	-	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	622	466	39	0	0
Major/Minor	Major1	NO.	Major2	AU S	Minor2	
Conflicting Flow All	505	0		0	1126	486
Stage 1	-				486	-
Stage 2	110/200	V.8000		E COLC	640	
Critical Hdwy	4,12	- SYNVE			6.42	6.22
Critical Hdwy Stg 1	7,14			A 1/10	5.42	
	IF COLUMN			SZYDLIA	5.42	
Critical Hdwy Stg 2	2 240	1102		10 B		
Follow-up Hdwy	2.218			immoe		
Pot Cap-1 Maneuver	1060		-	•	227	581
Stage 1	700				618	
Stage 2		F. S.		•	525	
Platoon blocked, %		•		-		
Mov Cap-1 Maneuver	1060	95%			224	581
Mov Cap-2 Maneuver				-	224	
Stage 1	ding.			PER	610	4
Stage 2					525	
					TO THE	
Approach	EB	Lora C	WB.	1300000	OD.	
Approach  HCM Control Dolov a					SB	1000
HCM Control Delay, s	0.1		0		0	
HCM LOS					Α	
Taking a Di						
Minor Lane/Major Mym	1500	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)		1060				
HCM Lane V/C Ratio		0.008	-	Participant,		
HCM Control Delay (s)		8.4	0			0
HCM Lane LOS		Α.4	A	119.0		A
HCM 95th %tile Q(veh)		0	^		12679	٨
LICIVI BULL WILLE CI(VEN)		U	7	•		

Intersection		SECTION	SUN	Section 1		ha a
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W	LDIX	HOL	<b>†</b>	<u> </u>	OUN
Traffic Vol, veh/h	0	51	0	67	54	0
Future Vol, veh/h	0	51	0	67	54	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	Otop	None	-		1166	
Storage Length	0	110116		HOHE -		NONE
Veh in Median Storage	-		U/GIF-	0	0	
Grade, %	0		11 12	0	0	
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mymt Flow	0	55	0	73	59	0
WWITTIOW	U	00	U	13	99	U
(default disease	i dr		1	and de		
Major/Minor Conflicting Flow All	Minor2		Major1		Major2	0
	132	59		0		0
Stage 1	59	-			7 -	-
Stage 2	73					
Critical Hdwy	6.42	6.22	370.5			
Critical Hdwy Stg 1	5.42		_			ela alpeda e e e
Critical Hdwy Stg 2	5.42	0.040		•	TORK -	1111
Follow-up Hdwy	3.518			etro-ch-kr	-	
Pot Cap-1 Maneuver	862	1007	0		•	0
Stage 1	964		0			0
Stage 2	950	1	0	9 1	10:	0
Platoon blocked, %						
Mov Cap-1 Maneuver	862	1007			1	
Mov Cap-2 Maneuver	862			-		
Stage 1	964		1			
Stage 2	950	-			-	
Approach	EB	N. S.	NB		SB	100
HCM Control Delay, s	8.8		0		0	100 ST 12
HCM LOS	A				U	
	ditti					
Minor Lane/Major Mvm	t	NBTE	Rind	SBT	- Total	-
Capacity (veh/h)			1007	301		
HCM Lane V/C Ratio			0.055			
HCM Control Delay (s)		w. Ive	8.8			
HCM Lane LOS		1	0.0 A			
HCM 95th %tile Q(veh)			0.2	A TIDE		
TOW SOUL WING CH (AGIL)			U.Z	1.7.3		

Intersection	1995 79	P VIII	E SKOT	7.100	1.010	4 5,40
Int Delay, s/veh	2.6			-		
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Ŋſ		1.70	<b>1</b>	<b>A</b>	ODIX
Traffic Vol, veh/h	0		0	61	53	0
Future Vol, veh/h	0	47	0	61	53	
Conflicting Peds, #/hr	0	0				0
Sign Control			0	_ 0	_ 0	0
	Stop		Free	Free	Free	Free
RT Channelized		None	1000	None		None
Storage Length	0	-	•	-		5.3
Veh in Median Storage	e,# 0			0	0	
Grade, %	0	-		0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	51	0	66	58	0
						U
Major/Minor	Minor2		Major1	N	/ajor2	m-515-89
Conflicting Flow All	124	58	_	0	13.	0
Stage 1	58					<b>1</b>
Stage 2	66			-	ZIII KON	
Critical Hdwy	6.42	6.22			3570	
Critical Hdwy Stg 1	5.42	0.22			1111-7	1100
					_	
Critical Hdwy Stg 2	5.42		7 Y-1			
Follow-up Hdwy	3.518		-	-		
Pot Cap-1 Maneuver	871	1008	0			0
Stage 1	965	-	0	•	-	0
Stage 2	957		0	HIE.		0
Platoon blocked, %						
Mov Cap-1 Maneuver	871	1008				
Mov Cap-2 Maneuver	871	,000		Vanish Co.		
Stage 1	965					
		PRO L			365	
Stage 2	957	-				
					-	
Approach	EB		NB		SB	
-ICM Control Delay, s	8.8		0		0	
HCM LOS	Α					
		4				
Minor Lane/Major Mvm	t	NBTE		SBT	304	\$5000
Capacity (veh/h)			1008			Private land
ICM Lane V/C Ratio			0.051			
HCM Control Delay (s)			8.8			
HCM Lane LOS	-		A			
HCM 95th %tile Q(veh)			0.2			
addi idalo dilacii)			U.Z	-		

