

July 20, 2023

Bonnie Schwartz
Pound Ridge Library
271 Westchester Avenue
Pound Ridge, NY 10576

RE: Traffic Study
Pound Ridge Library
271 Westchester Avenue (NY Route 137)
Town of Pound Ridge, Westchester County, NY

Dear Bonnie:

INTRODUCTION

DTS Provident Design Engineering, LLP (DTS Provident), a licensed Professional Engineering firm in the State of New York, has prepared this Traffic Study to evaluate the traffic and safety as well as potential proposed additional parking at the existing Pond Ridge Library located at 271 Westchester Avenue (NY Route 137) in the Town of Pound Ridge, Westchester County, New York. A map of the Site Location is illustrated on Figure No. 1 in Appendix B.

DTS Provident has been retained to analyze the traffic associated with the library including a potential increase in the number of parking spaces and to identify improvements, if any, to mitigate any adverse impact. This Traffic Study has been prepared using industry-standard traffic engineering procedures to document the findings and conclusions of the analysis undertaken to measure the traffic impacts associated with the library and potential modifications.

To perform this Study, traffic counts were performed, speed measurements were conducted, sight distance was measured, capacity analyses were conducted, and crash history was reviewed. The following is a summary of our findings and conclusions.

EXISTING CONDITIONS

Pound Ridge Library is located along Westchester Avenue (NY Route 137) at its intersection with Salem Road (NY Route 124) and Stone Hill Road (NY Route 137) in the Town of Pound Ridge. The intersection is a triangular intersection with a landscaped island in the middle. Both NY Route 137 and NY Route 124 consist of one lane per direction with minimal shoulders. There are no sidewalks in the area. There is a Stop sign facing the westbound approach of NY Route 124 as well as the southwest bound approach of NY Route 137 (Stone Hill Road).

The library is accessed by a paved driveway that wraps around to the back of the building. Various parking spaces are laid out surrounding the site. A gravel path is located at the back of the site that goes through a wooded area and eventually leads to a few residential houses.

EXISTING TRAFFIC COUNTS

In order to analyze the traffic impacts associated with the library, DTS Provident first determined the existing traffic volume conditions. As the library is not open during the Peak AM Roadway Hour (8:00 AM to 9:00 AM), the traffic counts focused on the Peak PM Roadway Period, the busiest period on the roadway. Thus, representatives of DTS Provident conducted turning movement traffic counts on Tuesday June 20, 2023, from 4:00 PM to 6:00 PM. Based upon the traffic counts conducted, the Peak Roadway Hour was determined to be 5:00 PM to 6:00 PM.

In addition to the turning movement counts at the intersection, automatic traffic recorder (ATR) counts were performed along Westchester Avenue for a one-week period, collecting traffic volumes and speeds along the roadway in both directions.

The 2023 Existing Traffic Volumes are illustrated on Figure No. 2 in Appendix B. The ATR counts and data are contained in Appendix E.

TRIP GENERATION AND FUTURE TRAFFIC VOLUME CONDITIONS

Upon establishing the existing traffic volume conditions, DTS Provident grew the existing volumes to the future design year of 2025 using a growth rate of 1.5% per year compounded annually. This growth rate was determined by analyzing NYSDOT traffic growth on Westchester Avenue (NY Route 137) and Stone Hill Road (NY Route 137) over the past several years. These grown volumes form the 2025 No-Build Traffic Volumes which are illustrated on Figure No. 3 in Appendix B.

At this time the library is considering adding additional parking. Although the library does not generate significant traffic, DTS Provident added an additional 10 entering trips and 10 exiting trips to account for the possibility of increased traffic. The vehicular trips were applied to the site driveway and adjacent roads to form the 2025 Build Traffic Volumes which are illustrated on Figure No. 4 in Appendix B.

TRAFFIC CAPACITY ANALYSIS

DTS Provident utilized Synchro software to calculate the capacity analysis of the intersection of the Site Driveway and Westchester Avenue/Stone Hill Road (NY Route 137) & Salem Road (NY Route 124) for the Existing, No-Build, and Build traffic volume conditions. It should be noted that the intersection currently operates as a 3-way stop which is an atypical intersection control for a four-legged intersection and thus is not supported by Highway Capacity Manual (HCM) methodology. In order to evaluate the intersection, DTS Provident conducted traffic simulations within Synchro and used the simulation traffic

report feature to obtain levels of service (LOS) and delays (seconds per vehicle). A Level of Service ‘A’ represents the best roadway operating conditions while a Level of Service ‘F’ represents the worst roadway operating conditions. A description of Level of Service Standards is contained in Appendix A. Table No. 1 below summarizes the capacity analysis results for the Site Driveway.

TABLE NO. 1		
OVERALL LEVEL OF SERVICE SUMMARY		
Intersection	PEAK WEEKDAY PM HOUR	
	No-Build	Build
	LOS	LOS
	Delay (sec/veh)	Delay (sec/veh)
Site Driveway/Stone Hill Road (Route 137) & Westchester Avenue/Salem Drive (Route 124)	a 10.0	b 10.4

Notes:

Levels of Service for unsignalized intersections are denoted by lowercase letters.

Average delay is represented in seconds per vehicle.

Delay is shown for the worst side-street approach

As shown in Table No. 2 above, Levels of Service and delays for the Site Driveway are expected to operate appropriately with minimal delays. A more detailed Level of Service Table is contained in Appendix C and copies of the capacity analysis summary sheets are contained in Appendix D.

SIGHT DISTANCE

DTS Provident conducted a sight distance analysis for the Site Driveway and the intersection. Below is a summary table of the analysis.

**TABLE NO. 2
SIGHT DISTANCE SUMMARY
LIBRARY DRIVEWAY AND NY ROUTE 137**

DESCRIPTION	FIELD MEASUREMENT	AASHTO RECOMMENDED/ REQUIRED SIGHT DISTANCE FOR 30 MPH (Adjusted for Grade where stated)	AASHTO RECOMMENDED/ REQUIRED SIGHT DISTANCE FOR 35 MPH (Adjusted for Grade where stated)	AASHTO RECOMMENDED/ REQUIRED SIGHT DISTANCE FOR 40 MPH (Adjusted for Grade where stated)
Driveway Exiting sight line looking right (onto Salem Road) to the approaching vehicle	300	335 (if no Stop sign)	390 (if no Stop sign)	445 (if no Stop sign)
Driveway Exiting sight line looking straight (onto Stone Hill Road) to the approaching vehicle	250	335 (if no Stop sign)	390 (if no Stop sign)	445 (if no Stop sign)
Driveway Exiting sight line looking left (onto Westchester Avenue) to the approaching vehicle	200	335	390	445
Rear end sight line (along Salem Road) for the left turn entering vehicle from a vehicle approaching from the same direction along Salem Road	570	200 (Stopping Sight Distance)	250 (Stopping Sight Distance)	305 (Stopping Sight Distance)
Rear end sight line (along Stone Hill Road) for the left turn entering vehicle from a vehicle approaching from the same direction on Stone Hill Road	200	200 (Stopping Sight Distance)	250 (Stopping Sight Distance)	305 (Stopping Sight Distance)
Sight line from the left turn vehicle on Salem Road entering driveway to a vehicle approaching from the opposite direction on Westchester Avenue	370	245	285	325
Rear end sight line for the right turn vehicle entering driveway or vehicle exiting driveway from a vehicle approaching from the same direction along Westchester Avenue	335 (requires vegetation clearance)	215 (Stopping Sight Distance – adjusted for grade)	271 (Stopping Sight Distance – adjusted for grade)	333 (Stopping Sight Distance – adjusted for grade)

*Sight Distance Data obtained from field measurements by representatives of DTS Provident on 07/05/2023

*AASHTO requirements based upon “A Policy on Geometric Design of Highways and Streets” 2018, 7th Edition

The posted speed limit for the northbound direction of Westchester Avenue (NY Route 137) in the vicinity of the library driveway is 30 mph while the southbound direction speed limit is also 30 mph. North and east of the driveway, there are higher speed limits.

In the northbound direction of Westchester Avenue approaching the library driveway, there is a yellow warning sign indicating the “Library Driveway Ahead” as well as a 25 mph Curve Warning sign. Speed measurements conducted for the northbound direction determined an Average Speed of 34 mph and an 85th Percentile Speed of 39 mph, thus most vehicles are traveling greater than the speed limit. For the southbound direction, speed measurements indicated an Average Speed of 30 mph and an 85th Percentile Speed of 34 mph. Thus, for analysis purposes, 30 mph, 35 mph and 40 mph were reviewed.

The key sight distance is between the combination of vehicles traveling northbound on Westchester Avenue and vehicles exiting the driveway looking left. The sight distance recommendations and minimum sight distance requirements based on these speed limits were obtained from American Association of State Highway and Transportation Officials (AASHTO) “A Policy on Geometric Design of Highways and Streets” 2018, 7th Edition. Based on these recommendations and requirements, as well as accounting for the -6% grade on a portion of Westchester Avenue, although the “recommended” intersection sight distance is not met for the driveway, particularly at 40 mph, the “required” sight distance, the Stopping Sight Distance, is met. Thus, the minimum required sight distances are met. However, it is strongly recommended that vegetation be continuously cleared within the right-of-way in the area west of the driveway to provide this sight distance for vehicles exiting the driveway looking to the left. Drivers exiting the library have to pull up closer to the intersection to see to the left. In addition to the vegetation, there is a wall, trees, utilities poles and other items limiting the sight distance along with a curve in the roadway.

It is noted that vehicles approaching in the southbound direction on both Westchester Avenue (NY Route 124) and Stone Hill Road (NY Route 137) have stop signs and thus these vehicles stop before travelling through the intersection. If the stop signs did not exist, then these movements would have sight distance limitations due to the roadway curvature and vegetation including the large tree and fence to the east of the driveway.

CRASH DATA

DTS Provident obtained crash data in the vicinity of the library from the New York State Department of Transportation for the last three available years. There was only one recorded crash at the intersection during this time period. This crash was a head-on collision amongst two motor vehicles on September 5, 2020 at 4:17 PM under dry conditions and resulted in two injuries. The crash occurred on the Stone Hill Road portion of the intersection near Salem Road and thus did not involve the library driveway. The apparent contributing factor for the crash was that one of the vehicles was passing or “lane usage improperly”.

Based on only one crash occurring at the intersection over a three-year period, there is not a high crash rate at this intersection. Some other crashes occurred near the intersection but were also not related to the driveway.

CONCLUSION

Based upon the field observations and information contained herein, it is the considered professional opinion of DTS Provident that the traffic associated with the library and a possible increase in the number of parking spaces will not have an adverse impact upon the adjacent roadway network. Although the minimum sight distance is met, it is strongly recommended that vegetation be continuously cleared within the right-of-way in the area to the west of the driveway to provide this sight distance for vehicles exiting the driveway looking to the left.

Very truly yours,

DTS Provident Design Engineering, LLP

Brian Dempsey P.E., PTOE, RSP1
Partner

Q:\PROJECTS-DTSP\1043 - Pound Ridge Library\Letter\Traffic Impact Study_1043_Pound Ridge Library.docx

APPENDIX A
LEVEL OF SERVICE STANDARDS

1. LEVEL OF SERVICE

CONCEPT

The Highway Capacity Manual, published by the Transportation Research Board of the U.S. Government, established a system by which highway facilities are examined for their adequacy to handle traffic volumes. The terminology "Level of Service" is used to provide a "qualitative" evaluation based on certain "quantitative" calculations which are related to empirical values.

Intersection Capacity, Delay and resultant Levels of Service are dependent upon a number of factors, including the following:

- Area Type
- Intersection geometrics
- Traffic volumes
- Parking conditions
- Pedestrian activity
- Vehicle Mix
- Bus Stop location and activity
- Peak Hour Factor
- Traffic Signal operation, if applicable

Ramp and weaving area Densities and resultant Levels of Service are dependent upon a number of factors, including the following:

- Number of lanes
- Configuration of weaving area
- Length of acceleration/deceleration lanes
- Vehicle speeds
- Traffic volumes
- Vehicle Mix
- Peak Hour Factor

FACTORS

SIGNALIZED INTERSECTIONS

Level of Service for Signalized Intersections is defined in terms of Delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, Level of Service criteria are stated in terms of the Average Control Delay per vehicle for the peak 15-minute period within the hour analyzed.

Delay is a complex measure and is dependent upon a number of variables, including:

- Cycle length
- Ratio of Green time to Cycle length (G/C)

- Ratio of Volume to Capacity (V/C) for lane group or approach
- Traffic signal progression

UNSIGNALIZED INTERSECTIONS

Level of Service for Unsignalized Intersections is also defined in terms of Delay. The amount of Delay is based upon the availability of "gaps" in the mainline traffic stream and the acceptance of these gaps by motorists waiting on the side street to enter the main street traffic flow.

RAMP AND RAMP JUNCTIONS

Level of Service for ramp freeway junctions and the ramp proper are defined in terms of Density (passenger cars per mile per lane). Density is related to the traffic flow in the area of influence.

WEAVING AREAS

Level of Service for weaving areas is defined in terms of Density (passenger cars per mile per lane). Density is based on the ratio of weaving vehicles to non-weaving vehicles and on vehicle speeds in the weaving area of influence

CRITERIA

The criteria for the various Level of Service designations are as follows:

	SIGNALIZED	UNSIGNALIZED
LEVEL OF SERVICE	Average Control Delay per Vehicle (Seconds)	Average Control Delay per Vehicle (Seconds)
A	10.0 or less	10.0 or less
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	80.1 or greater	50.1 or greater

Level of Service	Ramp-Freeway Junction	Ramp Proper	Weaving Areas	
	Maximum Density pc/mi/ln	Density Range pc/mi/ln	Maximum Density pc/mi/ln	
			Freeway Weaving Area	Multi-lane + C-D Weaving Area
A	≤10	≤11	≤10	≤12
B	>10 - 20	>11 – 18	>10 - 20	>12 - 24
C	>20 - 28	>18 – 26	> 20 - 28	>24 - 32
D	>28 - 35	>26 – 35	>28 - 35	>32 - 36
E	>35	>35 – 45	>35 - 43	>36 - 40
F	Demand exceeds capacity	>45	>43	>40

DESCRIPTION

The following is a brief description of each of the six Level of Service designations as defined by the Highway Capacity Manual:

SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE A

Average Control Delay - 10.0 secs. or less

Describes operations with very low delay. Occurs when progression is extremely favorable and most vehicles arrive during the Green Phase and do not stop at all. Short cycle lengths may also contribute to low delay.

LEVEL OF SERVICE B

Average Control Delay - 10.1 to 20.0 secs.

Generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average delay.

LEVEL OF SERVICE C

Average Control Delay - 20.1 to 35.0 secs.

Higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this Level of Service. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.

LEVEL OF SERVICE D

Average Control Delay - 35.1 to 55.0 secs.

The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high Volume/Capacity (V/C) Ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LEVEL OF SERVICE E

Average Control Delay - 55.1 to 80.0 secs.

The limit of acceptable delay.

Higher delay values generally indicate poor progression, long cycle lengths, and high V/C Ratios. Individual cycle failures are frequent occurrences.

LEVEL OF SERVICE F

Average Control Delay - in excess of 80.0 secs.

Unacceptable to most drivers.

Occurs with oversaturation, i.e., arrival flow rates exceed the capacity of the intersection. May also occur at high V/C Ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.

UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE A

Average Control Delay - 10.0 secs. or less
Operations with little or no delay to minor turning movements.

LEVEL OF SERVICE B

Average Control Delay - 10.1 to 15.0 secs.
Operations with short delays on minor turning movements.

LEVEL OF SERVICE C

Average Control Delay - 15.1 to 25.0 secs.
Operations with average delays on minor turning movements.

LEVEL OF SERVICE D

Average Control Delay - 25.1 to 35.0 secs.
Operations with some delays on minor turning movements.

LEVEL OF SERVICE E

Average Control Delay - 35.1 to 50.0 secs.

Operations with long delays on minor turning movements.

LEVEL OF SERVICE F

Average Control Delay - In excess of 50.0 secs.

Operations where demand exceeds capacity. Very long delays with queuing may be experienced on the minor street approach.

RAMPS AND RAMP JUNCTIONS

LEVEL OF SERVICE A

Maximum Density - 10 pc/mi/ln

Unrestricted operations with no noticeable turbulence in the ramp influence area.

LEVEL OF SERVICE B

Maximum Density - 20 pc/mi/ln

Minimal levels of turbulence exist and speeds of vehicles in the influence area begin to decline.

LEVEL OF SERVICE C

Maximum Density - 28 pc/mi/ln

Level of turbulence becomes noticeable as average speed within the influence area declines. Driving conditions are still relatively comfortable at this level.

LEVEL OF SERVICE D

Maximum Density - 35 pc/mi/ln

Turbulence levels become intrusive. Queues may form on some high volume on-ramps but freeway operation remains stable.

LEVEL OF SERVICE E

Maximum Density - >35 pc/mi/ln

Conditions approaching and reaching capacity. Speeds are reduced and turbulence of merging/diverging vehicles becomes intrusive to all vehicles in the influence area. Flow levels approach capacity limits and minor changes in demand can cause ramp and freeway queues to occur.

LEVEL OF SERVICE F

Maximum Density – Demand flow exceeds limits

Unstable, or breakdown, operation. Approaching demand flows exceed the discharge capacity of the downstream freeway or ramp. Queues are visibly formed on the freeway and on-ramps and will continue to grow as long as the approaching demand exceeds the discharge capacity.

APPENDIX B
TRAFFIC FIGURES

Q:\PROJECTS-DTSP\1043 - Pound Ridge Library\AutoCAD\Traffic\Figures 8.5x11 Portrait.dwg



DTS • PROVIDENT
Intelligent Land Use

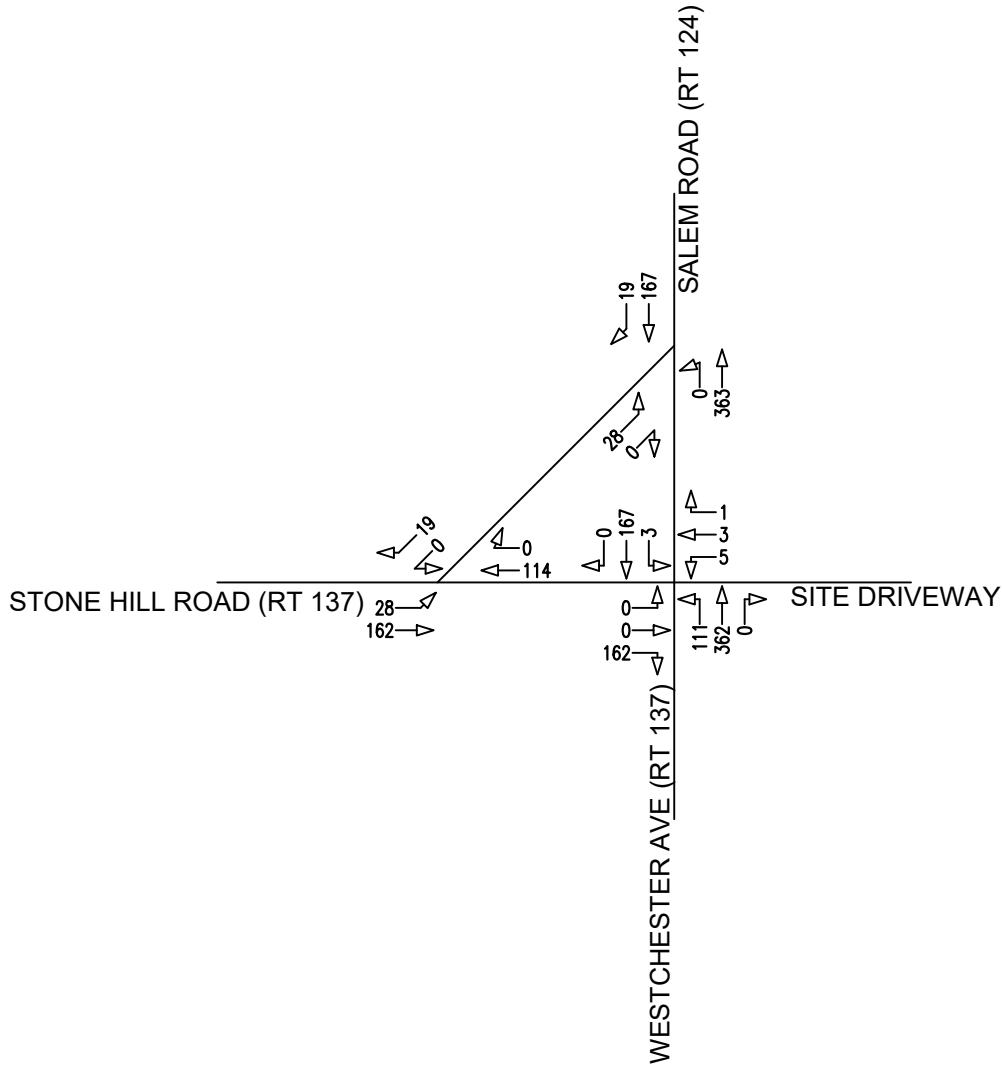
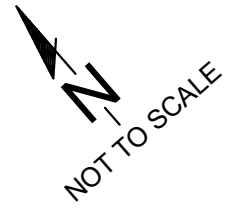
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Site Location

Pound Ridge Library
271 Westchester Ave
Pound Ridge, Westchester County, NY

Project No. 1043
Scale: N.T.S.
July 2023

Figure No. 01



LEGEND

00 - VPH-PEAK PM HOUR (5:00-6:00)

Q:\PROJECTS-DTSP\1043 - Pound Ridge Library\AutoCAD\Traffic\Figures 8.5x11 Portrait.dwg

DTS • PROVIDENT
Intelligent Land Use

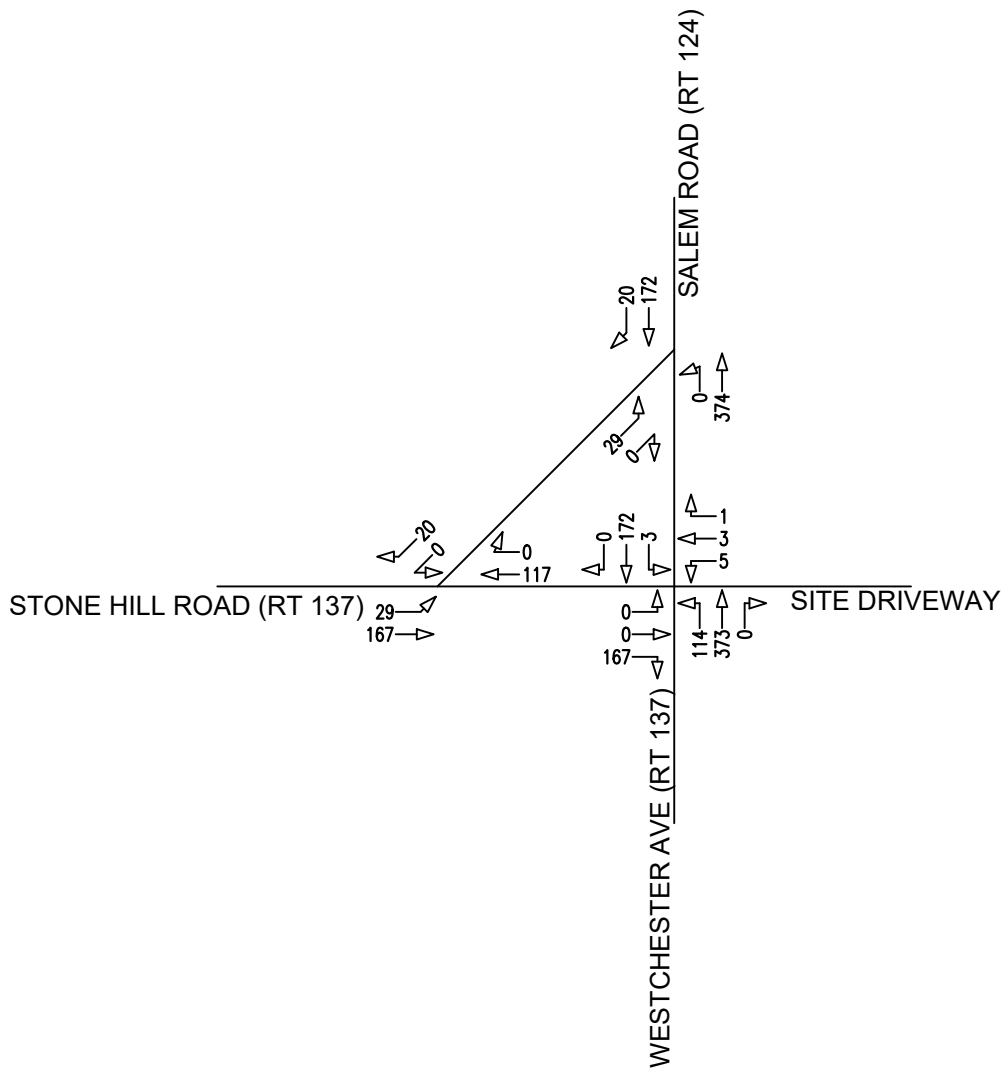
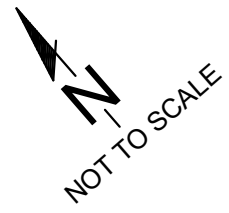
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Existing Traffic Volumes

Pound Ridge Library
271 Westchester Ave
Pound Ridge, Westchester County, NY

Project No. 1043
Scale: N.T.S.
July 2023

Figure No. 02



LEGEND

00 - VPH-PEAK PM HOUR (5:00-6:00)

Q:\PROJECTS-DTSP\1043 - Pound Ridge Library\AutoCAD\Traffic\Figures 8.5x11 Portrait.dwg

DTS • PROVIDENT
Intelligent Land Use

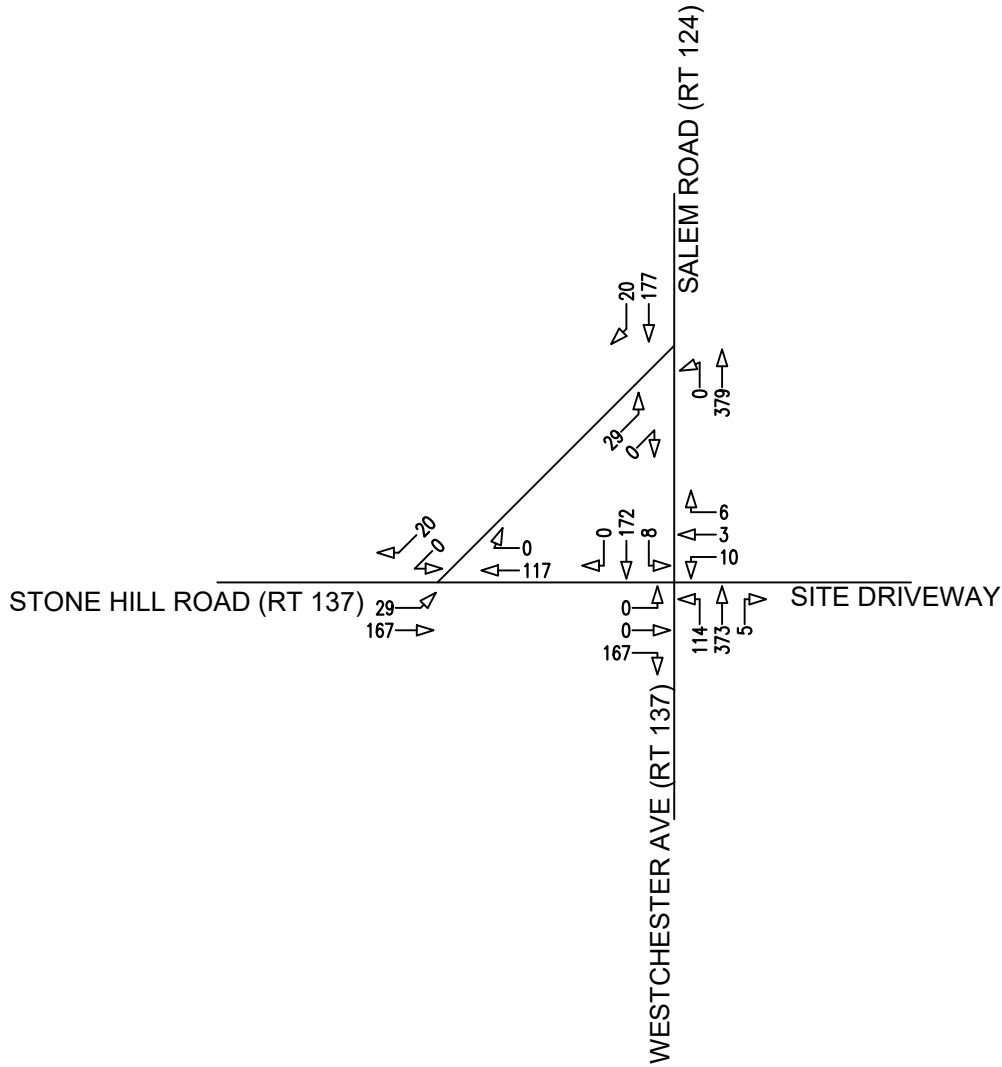
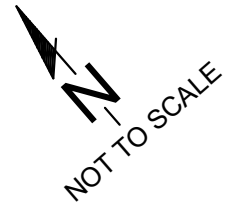
DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

No-Build Traffic Volumes

Pound Ridge Library
271 Westchester Ave
Pound Ridge, Westchester County, NY

Project No. 1043
Scale: N.T.S.
July 2023

Figure No. 03



LEGEND

00 - VPH-PEAK PM HOUR (5:00-6:00)

Q:\PROJECTS-DTSP\1043 - Pound Ridge Library\AutoCAD\Traffic\Figures 8.5x11 Portrait.dwg

DTS • PROVIDENT
Intelligent Land Use

DTS Provident Design Engineering, LLP
One North Broadway
White Plains, NY 10601
P: 914.428.0010
F: 914.428.0017

Build Traffic Volumes
Pound Ridge Library
271 Westchester Ave
Pound Ridge, Westchester County, NY

Project No. 1043
Scale: N.T.S.
July 2023

Figure No. 04

APPENDIX C
LOS SUMMARY TABLES

TABLE C-1				
PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE				
Westchester Avenue/Salem Drive & Stone Hill road/Site Driveway				
APPROACH		PM Peak Hour		
		2023 EXISTING	2025 NO-BUILD	2025 BUILD
		LOS DELAY (sec)	LOS DELAY (sec)	LOS DELAY (sec)
Westchester Avenue (RT 124)				
NB	TOTAL	a 0.8	a 0.7	a 0.8
Salem Road (RT 124)				
SB	TOTAL	a 9.9	a 10.0	b 10.4
Stone Hill Road (RT 137)				
EB	TOTAL	a 4.2	a 4.3	a 4.2
Site Driveway				
WB	TOTAL	a 7.3	a 7.9	a 7.0
INTERSECTION		a 3.4	a 3.5	a 3.6

APPENDIX D
CAPACITY ANALYSIS

1: RT 124 & RT 137/Driveway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.2	0.1	0.4	0.2	0.3
Total Delay (hr)	0.2	0.0	0.1	0.4	0.8
Total Del/Veh (s)	4.2	7.3	0.8	9.9	3.4

Total Network Performance

Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	1.0
Total Del/Veh (s)	4.2

Intersection: 1: RT 124 & RT 137/Driveway

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	68	31	93
Average Queue (ft)	18	13	42
95th Queue (ft)	48	37	74
Link Distance (ft)	232	228	332
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

1: RT 124 & RT 137/Driveway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.2	0.1	0.4	0.3	0.3
Total Delay (hr)	0.2	0.0	0.1	0.4	0.8
Total Del/Veh (s)	4.3	7.9	0.7	10.0	3.5

Total Network Performance

Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	0.9
Total Del/Veh (s)	4.3

Intersection: 1: RT 124 & RT 137/Driveway

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	68	31	84
Average Queue (ft)	20	13	41
95th Queue (ft)	49	37	69
Link Distance (ft)	232	228	332
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

1: RT 124 & RT 137/Driveway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.2	0.1	0.4	0.3	0.3
Total Delay (hr)	0.2	0.0	0.1	0.5	0.8
Total Del/Veh (s)	4.2	7.0	0.8	10.4	3.6

Total Network Performance

Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.3
Total Delay (hr)	1.0
Total Del/Veh (s)	4.4

Intersection: 1: RT 124 & RT 137/Driveway

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	68	31	84
Average Queue (ft)	18	17	41
95th Queue (ft)	47	42	73
Link Distance (ft)	232	228	332
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

APPENDIX E
SPEED AND VOLUME DATA

SPEED

Westchester Ave/Salem Ave S/O Pound Ridge Library Dwy

Day: Tuesday
Date: 6/20/2023

City: Pound Ridge
Project #: NY23_380018_001n

North Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	3	5	7	1	1	1	0	0	0	0	18
01:00	0	0	0	2	2	3	0	0	0	1	0	0	0	8
02:00	0	0	0	1	4	1	0	0	0	0	0	0	0	6
03:00	0	0	0	0	0	1	1	0	0	0	0	0	0	2
04:00	0	0	1	1	2	3	0	0	0	0	0	0	0	7
05:00	1	0	1	2	7	7	4	4	0	0	0	0	0	26
06:00	0	0	1	3	17	26	8	1	0	0	0	0	0	56
07:00	0	1	1	26	90	61	14	1	0	0	0	0	0	194
08:00	0	0	1	22	103	82	8	0	0	0	0	0	0	216
09:00	0	2	6	23	102	66	13	1	0	0	0	0	0	213
10:00	0	1	4	36	93	54	5	0	0	0	0	0	0	193
11:00	0	3	3	14	103	70	12	0	0	0	0	0	0	205
12:00 PM	1	2	1	36	89	66	4	0	0	0	0	0	0	199
13:00	3	1	4	30	97	63	10	0	0	0	0	0	0	208
14:00	1	1	7	45	107	81	9	1	0	0	0	0	0	252
15:00	0	0	6	67	166	107	13	0	0	0	0	0	0	359
16:00	0	1	2	38	209	170	15	0	0	0	0	0	0	435
17:00	0	0	0	20	222	173	37	2	0	0	0	0	0	454
18:00	0	0	1	21	135	137	14	1	1	0	0	0	0	310
19:00	0	0	4	21	60	57	9	0	0	0	0	0	0	151
20:00	0	0	3	24	56	44	4	0	0	0	0	0	0	131
21:00	0	0	1	9	38	35	2	2	0	0	0	0	0	87
22:00	0	0	0	7	18	14	3	2	0	0	0	0	0	44
23:00	0	0	0	2	10	11	7	0	0	1	0	0	0	31
Totals	6	12	47	453	1735	1339	193	16	2	2				3805
% of Totals	0%	0%	1%	12%	46%	35%	5%	0%	0%	0%				100%

AM Volumes	1	7	18	133	528	381	66	8	1	1	0	0	0	1144
% AM	0%	0%	0%	3%	14%	10%	2%	0%	0%	0%				30%
AM Peak Hour	05:00	11:00	09:00	10:00	08:00	08:00	07:00	05:00		01:00				08:00
Volume	1	3	6	36	103	82	14	4	1	1				216
PM Volumes	5	5	29	320	1207	958	127	8	1	1	0	0	0	2661
% PM	0%	0%	1%	8%	32%	25%	3%	0%	0%	0%				70%
PM Peak Hour	13:00	12:00	14:00	15:00	17:00	17:00	17:00	17:00	18:00	23:00				17:00
Volume	3	2	7	67	222	173	37	2	1	1				454
Directional Peak Periods			AM 7-9				NOON 12-2			PM 4-6		Off Peak Volumes		
All Speeds			Volume		%		Volume		%		Volume		%	
			410	↔	11%	407	↔	11%	889	↔	23%	2099	↔	55%

Street Name	Direction	Percentiles					ADT
		15th	50th	Average	85th	95th	
Westchester Ave/Salem Ave	North Bound	30	34	34	39	41	3805
Westchester Ave/Salem Ave	South Bound	26	30	30	34	37	3817

SPEED

Westchester Ave/Salem Ave S/O Pound Ridge Library Dwy

Day: Tuesday
Date: 6/20/2023

City: Pound Ridge
Project #: NY23_380018_001s

South Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	1	0	2	6	0	0	0	0	0	0	0	0	9
01:00	0	0	0	0	2	0	0	0	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	2	0	1	0	0	0	0	0	0	0	3
04:00	0	0	2	3	7	2	0	0	0	0	0	0	0	14
05:00	0	0	1	17	26	3	2	0	0	0	0	0	0	49
06:00	0	0	11	59	91	12	1	0	0	0	0	0	0	174
07:00	0	2	14	179	221	41	1	1	0	0	0	0	0	459
08:00	0	12	46	220	249	31	0	0	0	0	0	0	0	558
09:00	4	8	24	127	142	25	1	0	0	0	0	0	0	331
10:00	0	1	9	82	94	12	1	0	0	0	0	0	0	199
11:00	2	6	18	57	81	18	2	0	0	0	0	0	0	184
12:00 PM	0	0	25	89	85	12	0	0	0	0	0	0	0	211
13:00	3	0	22	70	80	10	1	0	0	0	0	0	0	186
14:00	0	2	20	77	89	18	4	0	0	0	0	0	0	210
15:00	1	6	22	85	99	12	0	0	0	0	0	0	0	225
16:00	0	2	13	121	105	18	0	0	0	0	0	0	0	259
17:00	2	0	10	122	162	22	4	0	0	0	0	0	0	322
18:00	0	4	10	55	88	18	2	0	0	0	0	0	0	177
19:00	0	0	2	35	44	21	1	0	0	0	0	0	0	103
20:00	0	0	5	20	25	5	0	0	0	0	0	0	0	55
21:00	0	0	0	16	17	8	0	0	0	0	0	0	0	41
22:00	0	0	1	13	9	2	0	0	0	0	0	0	0	25
23:00	0	0	1	4	9	5	2	0	0	0	0	0	0	21
Totals	12	44	256	1455	1731	296	22	1						3817
% of Totals	0%	1%	7%	38%	45%	8%	1%	0%						100%

AM Volumes	6	30	125	748	919	145	8	1	0	0	0	0	0	1982	
% AM	0%	1%	3%	20%	24%	4%	0%	0%						52%	
AM Peak Hour	09:00	08:00	08:00	08:00	08:00	07:00	05:00	07:00						08:00	
Volume	4	12	46	220	249	41	2	1						558	
PM Volumes	6	14	131	707	812	151	14	0	0	0	0	0	0	1835	
% PM	0%	0%	3%	19%	21%	4%	0%							48%	
PM Peak Hour	13:00	15:00	12:00	17:00	17:00	17:00	14:00							17:00	
Volume	3	6	25	122	162	22	4							322	
Directional Peak Periods		AM 7-9				NOON 12-2			PM 4-6			Off Peak Volumes			
All Speeds		Volume		%		Volume		%		Volume		%		Volume	
		1017		27%		397		10%		581		15%		1822	
		↔				↔				↔				↔	

Street Name	Direction	Percentiles					ADT
		15th	50th	Average	85th	95th	
Westchester Ave/Salem Ave	North Bound	30	34	34	39	41	3805
Westchester Ave/Salem Ave	South Bound	26	30	30	34	37	3817

SPEED

Westchester Ave/Salem Ave S/O Pound Ridge Library Dwy

Day: Tuesday
Date: 6/20/2023

City: Pound Ridge
Project #: NY23_380018_001

Summary

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	1	0	5	11	7	1	1	1	0	0	0	0	27
01:00	0	0	0	2	4	3	0	0	0	1	0	0	0	10
02:00	0	0	0	1	4	1	0	0	0	0	0	0	0	6
03:00	0	0	0	2	0	2	1	0	0	0	0	0	0	5
04:00	0	0	3	4	9	5	0	0	0	0	0	0	0	21
05:00	1	0	2	19	33	10	6	4	0	0	0	0	0	75
06:00	0	0	12	62	108	38	9	1	0	0	0	0	0	230
07:00	0	3	15	205	311	102	15	2	0	0	0	0	0	653
08:00	0	12	47	242	352	113	8	0	0	0	0	0	0	774
09:00	4	10	30	150	244	91	14	1	0	0	0	0	0	544
10:00	0	2	13	118	187	66	6	0	0	0	0	0	0	392
11:00	2	9	21	71	184	88	14	0	0	0	0	0	0	389
12:00 PM	1	2	26	125	174	78	4	0	0	0	0	0	0	410
13:00	6	1	26	100	177	73	11	0	0	0	0	0	0	394
14:00	1	3	27	122	196	99	13	1	0	0	0	0	0	462
15:00	1	6	28	152	265	119	13	0	0	0	0	0	0	584
16:00	0	3	15	159	314	188	15	0	0	0	0	0	0	694
17:00	2	0	10	142	384	195	41	2	0	0	0	0	0	776
18:00	0	4	11	76	223	155	16	1	1	0	0	0	0	487
19:00	0	0	6	56	104	78	10	0	0	0	0	0	0	254
20:00	0	0	8	44	81	49	4	0	0	0	0	0	0	186
21:00	0	0	1	25	55	43	2	2	0	0	0	0	0	128
22:00	0	0	1	20	27	16	3	2	0	0	0	0	0	69
23:00	0	0	1	6	19	16	9	0	0	1	0	0	0	52
Totals	18	56	303	1908	3466	1635	215	17	2	2				7622
% of Totals	0%	1%	4%	25%	45%	21%	3%	0%	0%	0%				100%

AM Volumes	7	37	143	881	1447	526	74	9	1	1	0	0	0	3126
% AM	0%	0%	2%	12%	19%	7%	1%	0%	0%	0%				41%
AM Peak Hour	09:00	08:00	08:00	08:00	08:00	08:00	07:00	05:00		01:00				08:00
Volume	4	12	47	242	352	113	15	4	1	1				774
PM Volumes	11	19	160	1027	2019	1109	141	8	1	1	0	0	0	4496
% PM	0%	0%	2%	13%	26%	15%	2%	0%	0%	0%				59%
PM Peak Hour	13:00	15:00	15:00	16:00	17:00	17:00	17:00	17:00	18:00	23:00				17:00
Volume	6	6	28	159	384	195	41	2	1	1				776
Directional Peak Periods			AM 7-9				NOON 12-2			PM 4-6			Off Peak Volumes	
All Speeds			Volume		%		Volume		%		Volume		%	
			1427	↔	19%	804	↔	11%	1470	↔	19%	3921	↔	51%

Street Name	Direction	Percentiles					ADT
		15th	50th	Average	85th	95th	
Westchester Ave/Salem Ave	Summary	27	32	32	37	40	7622

VOLUME

Westchester Ave/Salem Ave S/O Pound Ridge Library Dwy

Day: Tuesday
 Date: 6/20/2023

City: Pound Ridge
 Project #: NY23_380018_001

DAILY TOTALS					NB	SB	EB	WB	Total		
					3,805	3,817	0	0	7,622		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	4	2	0	0	6	12:00	48	56	0	0	104
00:15	7	2	0	0	9	12:15	44	38	0	0	82
00:30	2	5	0	0	7	12:30	50	61	0	0	111
00:45	5	18	0	0	5	12:45	57	199	56	211	410
01:00	2	1	0	0	3	13:00	44	47	0	0	91
01:15	4	0	0	0	4	13:15	45	43	0	0	88
01:30	0	1	0	0	1	13:30	67	53	0	0	120
01:45	2	8	0	2	2	13:45	52	208	43	186	394
02:00	0	0	0	0	0	14:00	62	44	0	0	106
02:15	3	0	0	0	3	14:15	75	53	0	0	128
02:30	1	0	0	0	1	14:30	52	52	0	0	104
02:45	2	6	0	0	2	14:45	63	252	61	210	462
03:00	0	2	0	0	2	15:00	92	52	0	0	144
03:15	1	0	0	0	1	15:15	92	55	0	0	147
03:30	1	1	0	0	2	15:30	88	67	0	0	155
03:45	0	2	0	3	0	15:45	87	359	51	225	584
04:00	2	1	0	0	3	16:00	102	60	0	0	162
04:15	2	2	0	0	4	16:15	119	54	0	0	173
04:30	0	4	0	0	4	16:30	95	60	0	0	155
04:45	3	7	7	14	10	16:45	119	435	85	259	694
05:00	1	5	0	0	6	17:00	133	84	0	0	217
05:15	9	14	0	0	23	17:15	115	83	0	0	198
05:30	9	13	0	0	22	17:30	111	78	0	0	189
05:45	7	26	17	49	24	17:45	95	454	77	322	776
06:00	7	20	0	0	27	18:00	89	43	0	0	132
06:15	15	37	0	0	52	18:15	93	57	0	0	150
06:30	21	57	0	0	78	18:30	62	37	0	0	99
06:45	13	56	60	174	73	18:45	66	310	40	177	487
07:00	21	85	0	0	106	19:00	57	31	0	0	88
07:15	47	120	0	0	167	19:15	34	31	0	0	65
07:30	61	123	0	0	184	19:30	31	26	0	0	57
07:45	65	194	131	459	196	19:45	29	151	15	103	254
08:00	53	143	0	0	196	20:00	43	18	0	0	61
08:15	54	132	0	0	186	20:15	38	12	0	0	50
08:30	67	165	0	0	232	20:30	25	11	0	0	36
08:45	42	216	118	558	160	20:45	25	131	14	55	186
09:00	57	95	0	0	152	21:00	30	8	0	0	38
09:15	62	101	0	0	163	21:15	16	20	0	0	36
09:30	52	82	0	0	134	21:30	22	7	0	0	29
09:45	42	213	53	331	95	21:45	19	87	6	41	128
10:00	48	51	0	0	99	22:00	14	12	0	0	26
10:15	38	51	0	0	89	22:15	11	6	0	0	17
10:30	51	43	0	0	94	22:30	11	4	0	0	15
10:45	56	193	54	199	110	22:45	8	44	3	25	69
11:00	50	45	0	0	95	23:00	10	7	0	0	17
11:15	58	47	0	0	105	23:15	7	7	0	0	14
11:30	51	47	0	0	98	23:30	11	6	0	0	17
11:45	46	205	45	184	91	23:45	3	31	1	21	52
TOTALS	1144	1982			3126	TOTALS	2661	1835			4496
SPLIT %	36.6%	63.4%			41.0%	SPLIT %	59.2%	40.8%			59.0%

DAILY TOTALS					NB	SB	EB	WB	Total
					3,805	3,817	0	0	7,622
AM Peak Hour	07:45	07:45	07:45	PM Peak Hour	16:45	16:45	16:45		
AM Pk Volume	239	571	810	PM Pk Volume	478	330	808		
Pk Hr Factor	0.892	0.865	0.873	Pk Hr Factor	0.898	0.971	0.931		
7 - 9 Volume	410	1017	1427	4 - 6 Volume	889	581	1470		
7 - 9 Peak Hour	07:45	07:45	07:45	4 - 6 Peak Hour	16:45	16:45	16:45		
7 - 9 Pk Volume	239	571	810	4 - 6 Pk Volume	478	330	808		
Pk Hr Factor	0.892	0.865	0.873	Pk Hr Factor	0.898	0.971	0.931		