

TRAFFIC IMPACT ANALYSIS

Pare Project No. 24076.00

**Centreville Bank Branch
160 East Main Road
Middletown, Rhode Island**

**Prepared for:
Centreville Bank
1218 Main Street
West Warwick, RI 02893**

**Prepared by:
Pare Corporation
8 Blackstone Valley Place
Lincoln, RI 02865**

June 2024

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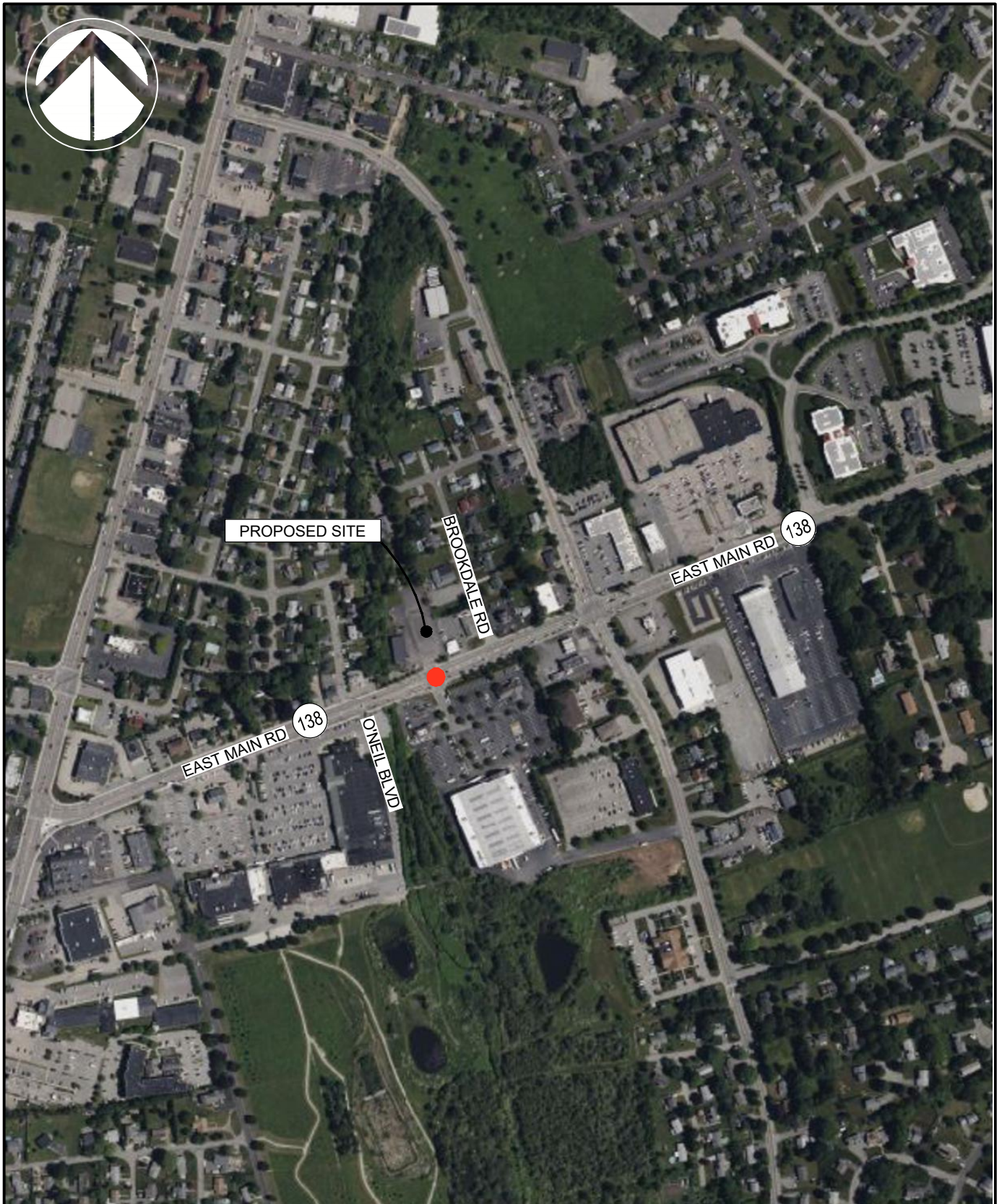
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INTRODUCTION

Pare Corporation (Pare) has completed the following traffic assessment for the anticipated traffic impacts from construction of the proposed 1,734 square foot Centreville Bank branch location at 160 East Main Road in Middletown, Rhode Island. This assessment focuses on the weekday afternoon commuter peak and Saturday midday commuter peak periods based on the area being a significant retail corridor. A locus map of the proposed bank location and the study area is shown in **Figure 1**.

The following information provided within outlines the results of field observations conducted during the weekday afternoon commuter peak and Saturday midday commuter peak periods, describes the existing conditions within the potential area for the proposed bank, and describes potential impacts that the site may have on the traffic network in the future.



● = STUDY INTERSECTIONS



PROJECT NO. 24076.00

DATE: MAY 2024

FIGURE 1
LOCUS MAP

CENTREVILLE BANK BRANCH
MIDDLETOWN, RHODE ISLAND

EXISTING CONDITIONS

The proposed bank location will be situated at 160 East Main Road in Middletown, Rhode Island. The existing vacant lot abuts and shares access from East Main Road with a Midas Auto Repair Shop. The proposed site consists of a 1,734 square-foot bank building with 13 parking spaces and two drive-up ATM lanes.

The study area is defined as the significant roadways and intersections in the vicinity of the site that may be impacted by the proposed bank branch. Listed below are the roadways and intersections included in the study area.

Study Area Roadways:

- East Main Road – from O’Neil Boulevard to Brookdale Road

Study Area Intersections:

- East Main Road at Proposed Site Driveway & BJ’s Driveway

Roadways

East Main Road (R.I. Route 138)

East Main Road is a two-way street, classified as a principal arterial under state jurisdiction. This roadway runs in the general north/south direction, but changes direction to east/west near the project location and within the study area. East Main Road has an overall roadway width of 60 feet, with the typical cross section consisting of two 11-foot-wide travel lanes and a two-foot paved shoulder in each direction, separated by a 12-foot-wide two-way left turn bay. Additionally, there are five-foot-wide paved concrete sidewalks lining both sides of the roadway. The posted speed limit on East Main Road is 35 miles per hour within the study area. Land uses surrounding the study segment of East Main Road are predominately commercial.

Intersections

East Main Road at Site Driveway & BJ’s Driveway



East Main Road at the proposed Site Driveway/BJ’s Driveway.

The intersection of East Main Road and the proposed site driveway forms a four-legged signalized intersection with BJ’s driveway. East Main Road makes up the eastern and western legs of the intersection, while the proposed site driveway makes up the northern leg and BJ’s driveway makes up the southern leg. The eastern and western approaches both contain two through travel lanes and a left-turn-only lane. The southbound approach consists of one travel lane allowing for all available movements. The northbound

approach consists of one through travel lane and one right-turn-only lane. Sidewalks are present along the entire perimeter of the intersection. Striped crosswalks are present across both the eastern

and western legs of the intersection. Pedestrian signals and pushbuttons are available at the crosswalks running across East Main Road. Curb ramps are located on all corners of the intersection; however, current ADA design standards are not consistently met.

The traffic movements at this signalized intersection operate under three general phases of operation, including protected left-turn movements for eastbound and westbound traffic on East Main Road, through movements for eastbound and westbound traffic on East Main Road, and all movements for both the site driveway and the BJ's driveway. The pedestrian phase operates concurrently with the driveway movements and is actuated upon pushbutton activation.

Traffic Counts

Manual turning movement counts (MTMC's) were conducted on Tuesday, April 23, 2024, during the hours of 4:00 p.m. to 6:00 p.m., and again on Saturday, April 27, 2024, during the hours of 11:00 a.m. and 1:00 p.m. for the study intersection of East Main Road at the proposed site driveway and the BJ's driveway. These time periods were selected as they represent the typical peak hour traffic periods along congested retail and commercial corridors.

SAFETY ANALYSES

Crash Data

Crash data was received from the Middletown Police Department for the most recent 3-year period, from April 1, 2021, through April 12, 2024, for the study area near the proposed site, including:

Intersections

- East Main Road at Proposed Site Driveway/BJ’s Driveway
- East Main Road at O’Neil Boulevard
- East Main Road at Brookdale Road

Roadways

- East Main Road – between O’Neil Boulevard to Brookdale Road

Table 1 summarizes the crashes along study area roadway segments and study intersections, by type and severity. The complete crash data summary is provided in **Appendix A**.

Table 1: Crash Data Summary

Roadway Segment	Total Crashes	Crash Severity		Crash Type					
		Non-Fatal Injuries	Fatalities	Rear End	Sideswipe	Head On	Single Vehicle	Angle	Other/Unknown
East Main Road Mid-Block Between O’Neil Boulevard and Brookdale Road	0	0	0	0	0	0	0	0	0
East Main Road At O’Neil Boulevard	0	0	0	0	0	0	0	0	0
East Main Road At Brookdale Road	2	0	0	2	0	0	0	0	0
East Main Road At Site Driveway/BJ’s Driveway	0	0	0	0	0	0	0	0	0
TOTAL	2	0	0	2	0	0	0	0	0

As shown in **Table 1**, there were a total of two crashes within the study area over the last three-year period, less than one crash per year. Both of the crashes occurred at the intersection of East Main Road and Brookdale Road, and both were rear-ending collisions, typical along longer stretches of roadway most likely due to drivers entering or exiting the roadway from Brookdale Street with short notice for vehicles behind them. Of the two crashes, no personal injuries or fatalities were reported.

Sight Distance

On April 18, 2024, a spot speed study was conducted on East Main Road near the study area intersection to assess driving speeds along the roadway. A speed limit of 35 miles per hour is posted along East Main Road where the speed study was conducted. A summary of the speed data results is shown in **Table 2** below. The most notable metric presented in the table is the 85th percentile speed, which was utilized for the sight distance analysis. Based on the speeds observed, the sight distance analysis was conducted using a design speed of 35 miles per hour for East Main Road. Results of the speed study are shown in **Appendix B**.

Table 2: East Main Road Spot Speed study

	Posted Speed	Average Speed	True Median (50 th Percentile)	85 th Percentile	10 MPH Pace	% over Posted
Eastbound	35	30	31	35	27-36	12
Westbound	35	31	31	36	25-34	18

In conjunction with the spot speed study conducted, the available sight distance at the existing driveway was measured. Photos of the sight lines are shown in **Photos 2 and 3** below.



Sight distance looking left (east) from site driveway onto East Main Road.



Sight distance looking right (west) from site driveway onto East Main Road.

According to the latest editions of the American Association of State Highway and Transportation Officials (AASHTO) publication *A Policy on the Geometric Design of Highways and Streets*, the minimum intersection sight distance (ISD) to allow oncoming vehicles to avoid a collision for speeds of 35 miles per hour is 250 feet, which is equal to the minimum stopping sight distance for the major road design speed. In addition, AASHTO gives guidance for a more desirable sight distance for this speed, which will not only avoid collisions, but maintain vehicular flow of at least 70 percent of the original operating speed. Meeting the desirable criteria for sight distance is more applicable to heavily traveled, where maintaining steady traffic flow along the major road is important, such as East Main Road. A summary of the sight distances can be found in **Table 3** below.

Table 3: Sight Distance Summary

		Required ISD (ft)	Desirable ISD (ft)	Measured ISD (ft)
Site Driveway	Looking Left (east)	250	335	375
	Looking right (west)	250	440	>500

As shown, sight distances from the existing driveway looking onto East Main Road not only meet the minimum required intersection sight distance to retain safety, but also meet the desirable intersection sight distances to maintain vehicular traffic flow.

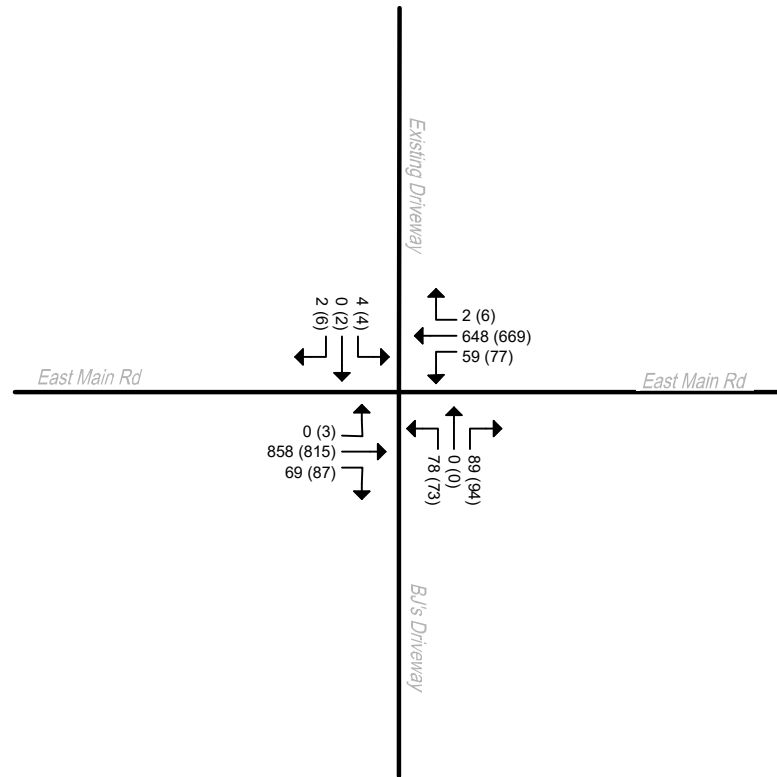
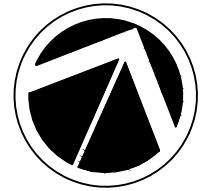
As a general recommendation, Pare suggests regularly scheduled tree trimming and maintenance of existing vegetation on the property to ensure that these sight distances are maintained in the future.

EXISTING TRAFFIC VOLUMES

Manual turning movement counts (MTMC's) were conducted in April during the hours of 4:00 p.m. to 6:00 p.m. during a weekday and 11:00 a.m. to 1:00 p.m. on a Saturday at the intersection of East Main Road at the site driveway and BJ's driveway.

These traffic count periods were selected as they capture the peak traffic periods along East Main Road, which is not only a heavy commuter route, but also a heavily commercialized corridor. Additionally, to account for the seasonal variation in traffic volume along East Main Road, an eight percent seasonal adjustment factor was applied to the existing traffic counts for both the weekday afternoon and weekend midday peak hour periods to bring the volumes to summertime peaks.

Traffic count data is provided in **Appendix C**. Existing traffic volumes, seasonally adjusted, for the weekday afternoon peak hour and Saturday midday peak hour are shown in **Figure 3**.



PM PEAK VOLUMES (SATURDAY PEAK VOLUMES)

PROJECT NO. 24076.00

DATE: MAY 2024



FIGURE 3
EXISTING (2024) TRAFFIC VOLUMES
CENTREVILLE BANK BRANCH TIA

MIDDLETOWN, RHODE ISLAND

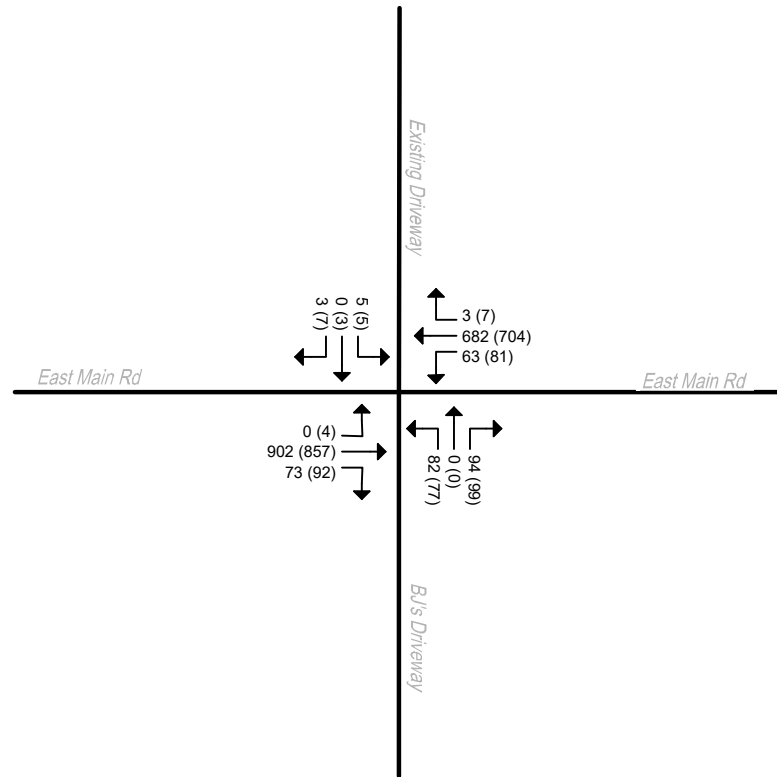
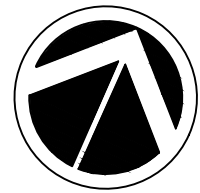
NO-BUILD CONDITIONS

Future no-build traffic volumes are determined by projecting the existing traffic volumes based on a determined annual growth rate and including known potential developments within the study area.

To account for background growth along the roadways within the vicinity of the project site, the existing traffic volumes were projected forward over a five-year horizon from 2024 to 2029. Recent census data was reviewed to determine the appropriate background growth rate. The census data showed a population increase of approximately 0.56% per year from 2010 to 2020 for the Town of Middletown. To be conservative, a growth rate of 1.0 % per year was used for the five-year projection.

The Middletown Planning Department was consulted regarding nearby future developments that may impact the study area traffic network. The Middletown Center Project, a development spanning multiple lots owned by the Town of Middletown at 600 – 740 West Main Road, is a proposed mixed-use development, consisting of a hotel, retail, and 140 residential units. The proposed development design is under review by the Town, and no traffic study for the project has been produced to date. As a result, trips from this development have not been included in this analysis. No other developments were identified.

A copy of the available census data is provided in **Appendix D. Figure 4** shows the 2029 no-build volumes for both peak hours.



PM PEAK VOLUMES (SATURDAY PEAK VOLUMES)

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FIGURE 4
FUTURE (2029) NO-BUILD TRAFFIC VOLUMES
CENTREVILLE BANK BRANCH TIA

MIDDLETOWN, RHODE ISLAND

BUILD CONDITIONS

The future 2029 build conditions represent the future 2029 no-build conditions plus the anticipated trips due to the proposed development.

Trip Generation

Trip generation for the bank was calculated using data contained in the 11th edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) for a drive-in bank with two drive-up lanes. This information is shown in **Table 4** below.

Table 4: Trip Generation Summary

		Number of Trips		
		Weekday	Weekday PM Peak	Saturday Midday Peak
LUC 912 – Drive-In Bank – Two Drive-In Lanes	Entering	125	27	27
	Exiting	125	27	28
	Total	250	54	55

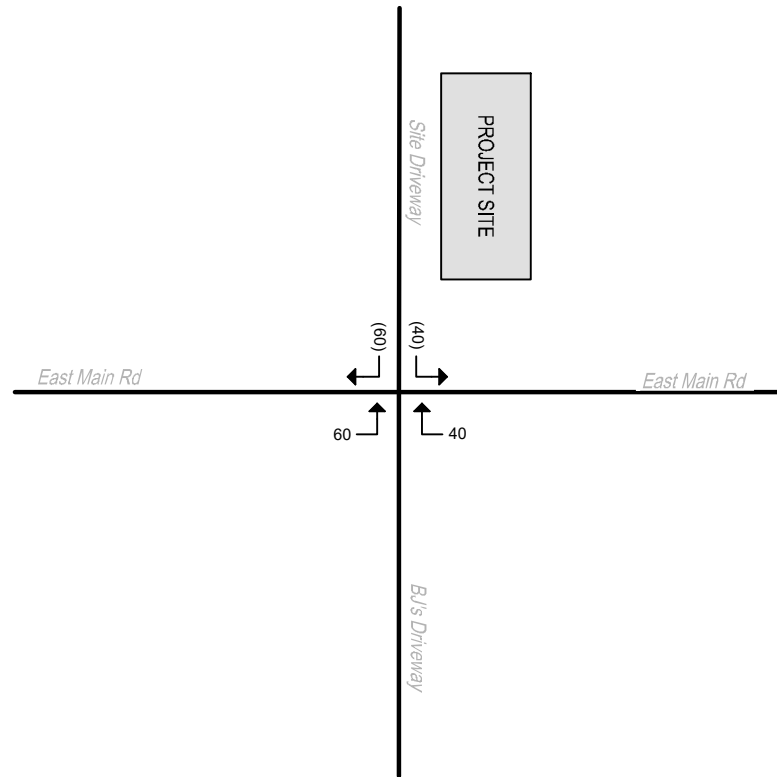
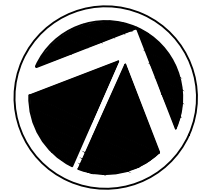
It should be noted that not all trips to land uses such as banks are trips made specifically for that purpose. Frequently, trips to banks are made as an intermediate stop on the way to a primary destination. For example, one might stop at the bank as an intermediate stop between home and a trip to a retail store. These trips are not new trips to the area, but rather trips that are attracted to the site from the existing adjacent traffic stream out of convenience. These trips are referred to as pass-by trips. ITE data suggests that approximately 35 percent of trips to drive-in banks are pass-by trips. However, to be conservative, all trips anticipated to be generated by the proposed bank were considered to be new to the area for this study.

Trip Distribution

Based on existing traffic patterns in the area of the site, it was estimated that approximately 60 percent of the site-generated traffic will be oriented to and from the west on East Main Road and 40 percent will be generated to and from the east.

Complete trip generation calculations are provided in **Appendix E**. The trip distribution for entering and exiting trips given in percentages are shown **Figure 5**, and the resulting site-generated traffic volumes are shown in **Figure 6**.

The anticipated trips from the proposed bank were added on to the future no-build conditions to obtain the future build conditions. The future build traffic volumes are shown in **Figure 7**.



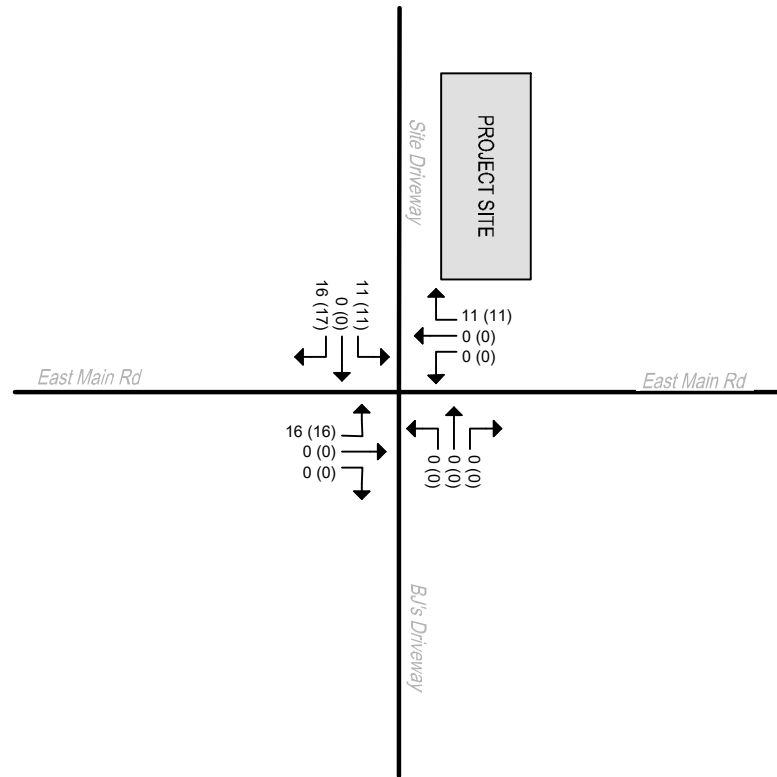
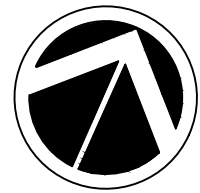
[%] TRIPS ENTERING ([%] TRIPS EXITING)



PROJECT NO. 24076.00

DATE: MAY 2024

FIGURE 5
TRIP DISTRIBUTION
CENTREVILLE BANK BRANCH TIA
MIDDLETOWN, RHODE ISLAND



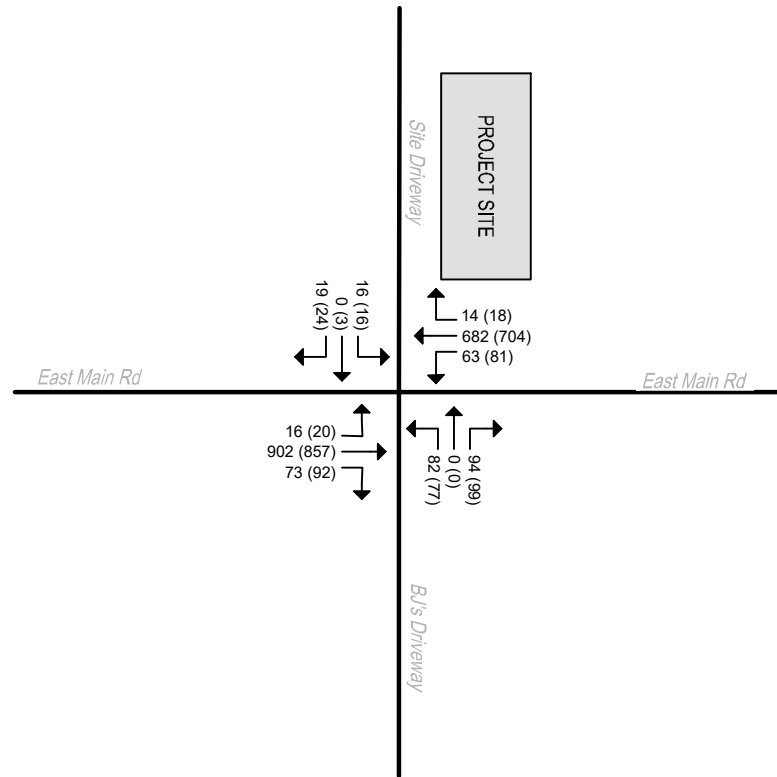
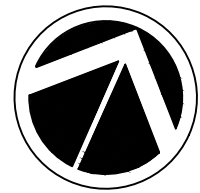
PM PEAK VOLUMES (SATURDAY PEAK VOLUMES)



PROJECT NO. 24076.00

DATE: MAY 2024

FIGURE 6
SITE GENERATED
CENTREVILLE BANK BRANCH TIA
MIDDLETOWN, RHODE ISLAND



PM PEAK VOLUMES (SATURDAY PEAK VOLUMES)

PROJECT NO. 24076.00

DATE: MAY 2024



FIGURE 7
FUTURE (2029) TRAFFIC VOLUMES
CENTREVILLE BANK BRANCH TIA

MIDDLETOWN, RHODE ISLAND

CAPACITY ANALYSES

Capacity analyses were completed for the study intersection under existing, future (2029) no-build, and future (2029) build conditions. Capacity analyses characterize intersections based on their level of service (LOS). LOS is a quality measure describing operational conditions within a traffic stream, generally in terms of service measures such as speed, travel times, traffic interruptions, etc. Six LOS values, from A to F, are defined for each type of facility, with A representing the best operating conditions and F representing the worst operating conditions. The LOS criteria for signalized intersections are provided in **Table 5** below. The complete capacity analyses can be found in **Appendix F**, and the traffic signal plan for the intersection of East Main Road at BJ's driveway can be found in **Appendix G**.

Table 5: LOS Criteria for Signalized

LOS	Signalized Intersection
	Delay Time (sec/veh)
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

Table 6: Afternoon Peak Hour LOS Summary

Intersection	Movement		Existing (2024)		Future (2029) No-Build		Future (2029) Build	
			LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
<i>East Main Road at Site Driveway/BJ's Driveway</i>	EB	L	A (0.0)	0	A (0.0)	0	A (4.4)	<25
	EB	TR	A (9.6)	220	B (10.0)	235	B (10.1)	235
	WB	L	A (4.8)	<25	A (5.0)	<25	A (5.1)	<25
	WB	TR	A (4.1)	94	A (4.2)	101	A (5.8)	153
	NB	LT	D (41.0)	<25	D (41.6)	<25	D (41.9)	<25
	NB	R	A (8.5)	34	A (10.4)	41	B (10.3)	41
	SB	LTR	A (0.5)	<25	A (0.6)	<25	A (1.5)	<25
	Intersection		A (8.9)		A (9.3)		A (9.8)	

1. Delay shown in seconds per vehicle.

2. Queue Length shown in feet assuming 25 feet per vehicle.

As shown in **Tables 6 and 7**, the existing intersection operates at a LOS A for both the weekday afternoon and Saturday midday peak periods, with the East Main Road approaches for both eastbound and westbound all operating at a LOS A. Under existing conditions, the existing driveway and BJ's driveway operate at a LOS D or better under both analyzed periods. Under future no-build conditions, the intersection and all approaches are expected to perform similar to the existing conditions, even with the projected traffic growth along the roadways. The intersection under the build scenario is expected to remain operating at a LOS A, with site-generated traffic added to this intersection expected to have minimal impacts on delay, queuing, and overall level of service at this intersection. Queue lengths for the left turns from East Main Road are less than the storage capacity for the left

turn bays, and the queue lengths for the through lanes along East Main Road are under 250 feet. It is approximately 640 feet to the signalized Aquidneck Shopping Centre intersection and approximately 530 feet to the signalized Valley Road intersection.

Table 7: Saturday Peak Hour LOS Summary

Intersection	Movement		Existing (2024)		Future (2029) No-Build		Future (2029) Build	
			LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
<i>East Main Road at Site Driveway/BJ's Driveway</i>	EB	L	A (4.0)	<25	A (4.2)	<25	A (4.2)	<25
	EB	TR	A (9.1)	221	A (9.5)	237	A (9.5)	237
	WB	L	A (4.6)	27	A (4.8)	28	A (4.9)	28
	WB	TR	A (5.2)	145	A (5.4)	155	A (6.5)	159
	NB	LT	D (38.4)	<25	D (39.0)	<25	D (35.4)	<25
	NB	R	A (9.2)	37	B (11.1)	44	B (11.0)	44
	SB	LTR	C (22.5)	<25	C (23.5)	<25	C (20.4)	<25
	Intersection		A (8.8)		A (9.2)		A (9.6)	

1. Delay shown in seconds per vehicle.
2. Queue Length shown in feet assuming 25 feet per vehicle.

CONCLUSIONS

Pare Corporation conducted analysis of the potential impacts for the construction of a 1,734 square foot Centreville Bank branch located at 160 East Main Road in Middletown, Rhode Island.

As part of the assessment, Pare analyzed safety conditions at and in the vicinity of the proposed site. The study area experienced two total collisions, both occurring at the intersection of East Main Road and Brookdale Road, with no fatalities or injuries reported. Sight distances were measured at the proposed site driveway location. There is an existing driveway at this location for the neighboring Midas facility that will be utilized as the entrance/exit for the bank branch. All sight lines meet the minimum and desirable sight distance requirements. However, Pare does recommend continuing with routine pruning of vegetation and tree trimming along the site frontage within 15 feet of East Main Road to keep sight lines clear.

The bank is expected to add less than 5% of the existing traffic volume at its driveway intersection with East Main Road during the analyzed peak hours. Anticipated distribution of trips to and from the bank branch were estimated using existing distributions of traffic volumes in the vicinity of the proposed site.

Capacity analyses conducted at the study intersection indicated that future build conditions will operate with the same level-of-service as the existing and future no-build conditions. Future build conditions under revised signal timings indicated minor changes in delay, however overall level-of-service as compared to the previous conditions are unchanged. Therefore, traffic can be accommodated at the existing traffic signal in its current operation.

Based on the analyses conducted, it is Pare's professional opinion that the traffic anticipated from the proposed Centreville Bank branch can be safely accommodated.

**Centreville Bank
Centreville Bank Branch, Middletown, RI**

APPENDIX A

Crash Data

Project Name Centreville Bank
Town/City, State Middletown, RI
Crash Data Summary
Project Number 24076
Date 5/20/2024



Crash Ref. No.	Report No.	Date	Time	On Street	Intersecting Street(s)	Directions of Travel	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	22-469-AC	10/14/2022	7:34 AM	East Main Road	Brookdale Road	WB/WB	2	0	0	Rain	Wet	Daylight	Rear-End
2	21-492=AC	10/26/2021	9:37 PM	East Main Road	Brookdale Road	EB/EB	2	0	0	Rain	Wet	Dark-Lighted	Rear-End

**Centreville Bank
Centreville Bank Branch, Middletown, RI**

**APPENDIX B
SPEED STUDY DATA**

Pare Corporation

8 Blackstone Valley Place
Lincoln, RI 02865

www.parecorp.com

Roadway: East Main Rd (RI Rte.138)
City/State: Middletown, RI
Weather: Cloudy
Taken By: AMB

File Name : East Main Rd
Site Code : 2407600_
Start Date : 4/18/2024
Page No : 1

#	EB	WB
1	29	26
2	23	29
3	30	27
4	37	25
5	28	28
6	29	30
7	29	40
8	36	29
9	34	28
10	29	30
11	31	35
12	35	30
13	32	33
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15	33	36
16	31	30
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36	24	28
37	26	40
38	32	38
39	36	40
40	22	31
41	33	31
42	23	32
43	26	29
44	25	30
45	33	31
46	28	25
47	36	37
48	29	38
49	30	34
50	26	36
51	36	
52		

Class	Vehicle Count	85 Percentile	10 MPH Pace Speed	Number in Pace	Percent in Pace	10 MPH Pace Speed	Number in Pace	Percent in Pace	Number of Vehicles Over 35 MPH	Percent of Vehicles Over 35 MPH	Average Speed	True Median (50th Percentile)
EB	51	35	27 - 36	41	80	27 - 36	41	80	6	12	30	31
WB	50	36	25 - 34	39	78	25 - 34	39	78	9	18	31	31
Summary	101	35	27 - 36	78	77	27 - 36	78	77	15	15	31	31

**Centreville Bank
Centreville Bank Branch, Middletown, RI**

**APPENDIX C
TRAFFIC COUNTS**

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781)587-0086 cell (781)439-4999

N/S: Midas Drive/Bj's Drive
 E/W: E. Main Road (Route 138)
 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837A
 Site Code : 24076.00
 Start Date : 4/23/2024
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	#158 Midas Driveway From North				E. Main Road (Route 138) From East				Bj's Plaza Driveway From South				E. Main Road (Route 138) From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	2	0	1	169	15	0	22	0	17	0	22	181	0	1	430
04:15 PM	1	0	1	0	0	167	17	0	25	0	14	0	14	199	0	0	438
04:30 PM	0	0	0	1	0	132	13	0	15	0	25	1	12	204	0	0	403
04:45 PM	0	0	0	0	0	132	9	0	20	0	16	0	15	210	0	0	402
Total	1	0	3	1	1	600	54	0	82	0	72	1	63	794	0	1	1673
05:00 PM	2	0	1	0	1	146	21	0	22	0	12	0	9	172	0	0	386
05:15 PM	1	0	2	1	2	120	14	0	7	0	10	1	12	151	1	2	324
05:30 PM	0	0	3	0	0	114	15	0	18	0	11	0	12	123	0	0	296
05:45 PM	0	0	0	0	0	115	15	0	13	0	10	0	10	133	0	0	296
Total	3	0	6	1	3	495	65	0	60	0	43	1	43	579	1	2	1302
Grand Total	4	0	9	2	4	1095	119	0	142	0	115	2	106	1373	1	3	2975
Apprch %	26.7	0	60	13.3	0.3	89.9	9.8	0	54.8	0	44.4	0.8	7.1	92.6	0.1	0.2	
Total %	0.1	0	0.3	0.1	0.1	36.8	4	0	4.8	0	3.9	0.1	3.6	46.2	0	0.1	
Cars & Peds	4	0	9	2	4	1088	119	0	142	0	111	2	104	1360	1	3	2949
% Cars & Peds	100	0	100	100	100	99.4	100	0	100	0	96.5	100	98.1	99.1	100	100	99.1
Trucks & Buses	0	0	0	0	0	6	0	0	0	0	1	0	1	12	0	0	20
% Trucks & Buses	0	0	0	0	0	0.5	0	0	0	0	0.9	0	0.9	0.9	0	0	0.7
Bikes by Direction	0	0	0	0	0	1	0	0	0	0	3	0	1	1	0	0	6
% Bikes by Direction	0	0	0	0	0	0.1	0	0	0	0	2.6	0	0.9	0.1	0	0	0.2

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 04:00 PM																					
04:00 PM	0	0	2	0	2	1	169	15	0	185	22	0	17	0	39	22	181	0	1	204	430
04:15 PM	1	0	1	0	2	0	167	17	0	184	25	0	14	0	39	14	199	0	0	213	438
04:30 PM	0	0	0	1	1	0	132	13	0	145	15	0	25	1	41	12	204	0	0	216	403
04:45 PM	0	0	0	0	0	0	132	9	0	141	20	0	16	0	36	15	210	0	0	225	402
Total Volume	1	0	3	1	5	1	600	54	0	655	82	0	72	1	155	63	794	0	1	858	1673
% App. Total	20	0	60	20		0.2	91.6	8.2	0		52.9	0	46.5	0.6		7.3	92.5	0	0.1		
PHF	.250	.000	.375	.250	.625	.250	.888	.794	.000	.885	.820	.000	.720	.250	.945	.716	.945	.000	.250	.953	.955
Cars & Peds	1	0	3	1	5	1	596	54	0	651	82	0	68	1	151	63	786	0	1	850	1657
% Cars & Peds	100	0	100	100	100	100	99.3	100	0	99.4	100	0	94.4	100	97.4	100	99.0	0	100	99.1	99.0
Trucks & Buses	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	7	0	0	7	11
% Trucks & Buses	0	0	0	0	0	0	0.5	0	0	0.5	0	0	1.4	0	0.6	0	0.9	0	0	0.8	0.7
Bikes by Direction	0	0	0	0	0	0	1	0	0	1	0	0	3	0	3	0	1	0	0	1	5
% Bikes by Direction	0	0	0	0	0	0	0.2	0	0	0.2	0	0	4.2	0	1.9	0	0.1	0	0	0.1	0.3

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N/S: Midas Drive/Bj's Drive
 E/W: E. Main Road (Route 138)
 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837A
 Site Code : 24076.00
 Start Date : 4/23/2024
 Page No : 1

Groups Printed- Cars & Peds

Start Time	#158 Midas Driveway From North				E. Main Road (Route 138) From East				Bj's Plaza Driveway From South				E. Main Road (Route 138) From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	2	0	1	169	15	0	22	0	17	0	22	181	0	1	430
04:15 PM	1	0	1	0	0	165	17	0	25	0	12	0	14	194	0	0	429
04:30 PM	0	0	0	1	0	132	13	0	15	0	24	1	12	204	0	0	402
04:45 PM	0	0	0	0	0	130	9	0	20	0	15	0	15	207	0	0	396
Total	1	0	3	1	1	596	54	0	82	0	68	1	63	786	0	1	1657
05:00 PM	2	0	1	0	1	143	21	0	22	0	12	0	8	170	0	0	380
05:15 PM	1	0	2	1	2	120	14	0	7	0	10	1	12	150	1	2	323
05:30 PM	0	0	3	0	0	114	15	0	18	0	11	0	12	122	0	0	295
05:45 PM	0	0	0	0	0	115	15	0	13	0	10	0	9	132	0	0	294
Total	3	0	6	1	3	492	65	0	60	0	43	1	41	574	1	2	1292
Grand Total	4	0	9	2	4	1088	119	0	142	0	111	2	104	1360	1	3	2949
Apprch %	26.7	0	60	13.3	0.3	89.8	9.8	0	55.7	0	43.5	0.8	7.1	92.6	0.1	0.2	
Total %	0.1	0	0.3	0.1	0.1	36.9	4	0	4.8	0	3.8	0.1	3.5	46.1	0	0.1	

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 04:00 PM																					
04:00 PM	0	0	2	0	2	1	169	15	0	185	22	0	17	0	39	22	181	0	1	204	430
04:15 PM	1	0	1	0	2	0	165	17	0	182	25	0	12	0	37	14	194	0	0	208	429
04:30 PM	0	0	0	1	1	0	132	13	0	145	15	0	24	1	40	12	204	0	0	216	402
04:45 PM	0	0	0	0	0	0	130	9	0	139	20	0	15	0	35	15	207	0	0	222	396
Total Volume	1	0	3	1	5	1	596	54	0	651	82	0	68	1	151	63	786	0	1	850	1657
% App. Total	20	0	60	20		0.2	91.6	8.3	0		54.3	0	45	0.7		7.4	92.5	0	0.1		
PHF	.250	.000	.375	.250	.625	.250	.882	.794	.000	.880	.820	.000	.708	.250	.944	.716	.949	.000	.250	.957	.963

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 E/W: E. Main Road (Route 138)
 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837A
 Site Code : 24076.00
 Start Date : 4/23/2024
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	#158 Midas Driveway From North				E. Main Road (Route 138) From East				Bj's Plaza Driveway From South				E. Main Road (Route 138) From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	4	0	0	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	5
Total	0	0	0	0	0	3	0	0	0	0	1	0	0	7	0	0	11
05:00 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
Total	0	0	0	0	0	3	0	0	0	0	0	0	1	5	0	0	9
Grand Total	0	0	0	0	0	6	0	0	0	0	1	0	1	12	0	0	20
Apprch %	0	0	0	0	0	100	0	0	0	0	100	0	7.7	92.3	0	0	
Total %	0	0	0	0	0	30	0	0	0	0	5	0	5	60	0	0	

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 04:15 PM																					
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	4	0	0	4	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
05:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
Total Volume	0	0	0	0	0	0	6	0	0	6	0	0	1	0	1	0	9	0	0	9	16
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	100	0	100	0	100	0	0	100	
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.000	.000	.250	.000	.250	.000	.563	.000	.000	.563	.667

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N/S: Midas Drive/Bj's Drive
 E/W: E. Main Road (Route 138)
 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837A
 Site Code : 24076.00
 Start Date : 4/23/2024
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	#158 Midas Driveway From North				E. Main Road (Route 138) From East				Bj's Plaza Driveway From South				E. Main Road (Route 138) From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	1	0	0	0	0	3	0	0	1	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Grand Total	0	0	0	0	0	1	0	0	0	0	3	0	1	1	0	0	6
Apprch %	0	0	0	0	0	100	0	0	0	0	100	0	50	50	0	0	
Total %	0	0	0	0	0	16.7	0	0	0	0	50	0	16.7	16.7	0	0	

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 04:15 PM																					
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	0	0	0	0	0	0	1	0	0	1	0	0	3	0	3	1	1	0	0	2	6
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	100	0	100	50	50	0	0	50	100
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.750	.000	.750	.250	.250	.000	.000	.500	.500

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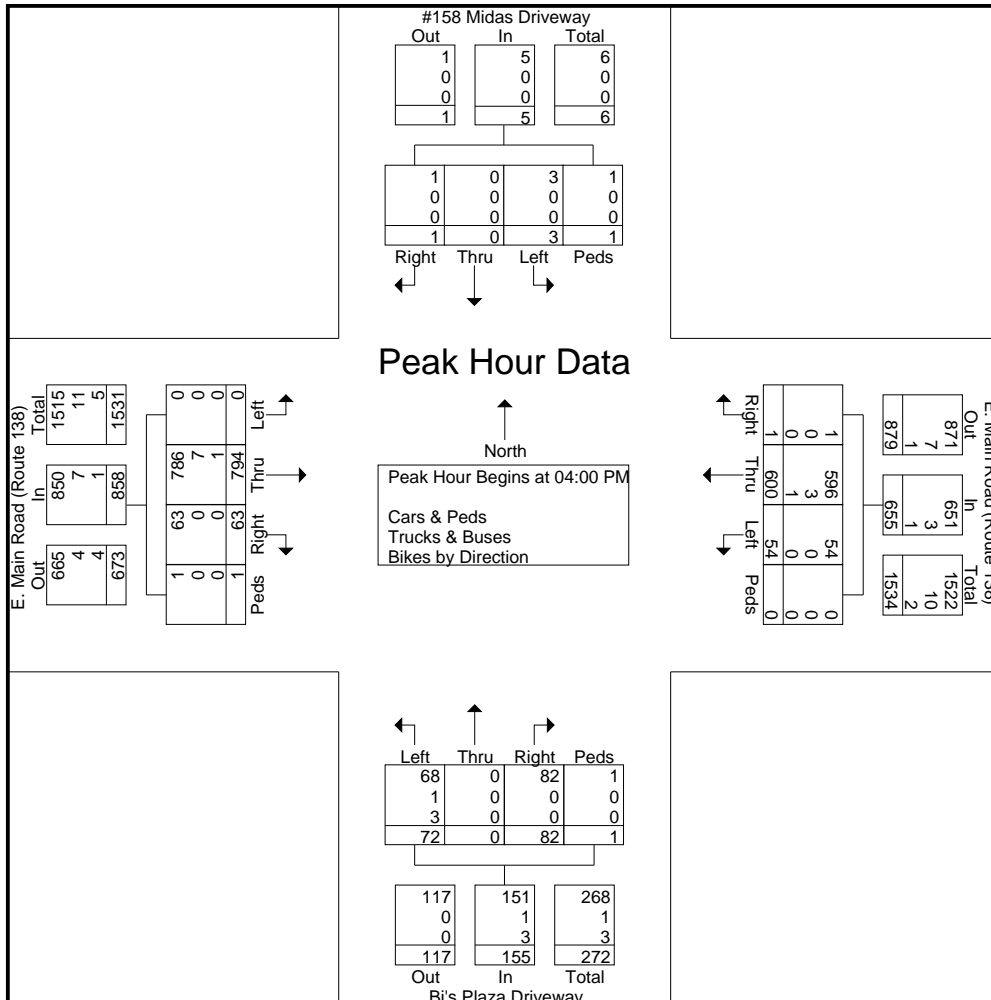
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N/S: Midas Drive/Bj's Drive
 E/W: E. Main Road (Route 138)
 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837A
 Site Code : 24076.00
 Start Date : 4/23/2024
 Page No : 1

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 04:00 PM																					
04:00 PM	0	0	2	0	2	1	169	15	0	185	22	0	17	0	39	22	181	0	1	204	430
04:15 PM	1	0	1	0	2	0	167	17	0	184	25	0	14	0	39	14	199	0	0	213	438
04:30 PM	0	0	0	1	1	0	132	13	0	145	15	0	25	1	41	12	204	0	0	216	403
04:45 PM	0	0	0	0	0	0	132	9	0	141	20	0	16	0	36	15	210	0	0	225	402
Total Volume	1	0	3	1	5	1	600	54	0	655	82	0	72	1	155	63	794	0	1	858	1673
% App. Total	20	0	60	20		0.2	91.6	8.2	0		52.9	0	46.5	0.6		7.3	92.5	0	0.1		
PHF	.250	.000	.375	.250	.625	.250	.888	.794	.000	.885	.820	.000	.720	.250	.945	.716	.945	.000	.250	.953	.955
Cars & Peds	1	0	3	1	5	1	596	54	0	651	82	0	68	1	151	63	786	0	1	850	1657
% Cars & Peds	100	0	100	100	100	100	99.3	100	0	99.4	100	0	94.4	100	97.4	100	99.0	0	100	99.1	99.0
Trucks & Buses	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	7	0	0	7	11
% Trucks & Buses	0	0	0	0	0	0	0.5	0	0	0.5	0	0	1.4	0	0.6	0	0.9	0	0	0.8	0.7
Bikes by Direction	0	0	0	0	0	0	1	0	0	1	0	0	3	0	3	0	1	0	0	1	5
% Bikes by Direction	0	0	0	0	0	0	0.2	0	0	0.2	0	0	4.2	0	1.9	0	0.1	0	0	0.1	0.3



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 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837AA
 Site Code : 24076.00
 Start Date : 4/27/2024
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	#158 Midas Driveway From North				E. Main Road (Route 138) From East				Bj's Plaza Driveway From South				E. Main Road (Route 138) From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	1	0	1	0	0	144	25	0	20	0	28	0	31	171	2	0	423
11:15 AM	3	0	1	0	4	136	20	0	19	0	25	0	37	166	1	1	413
11:30 AM	3	0	0	3	2	141	15	0	26	0	28	1	26	152	1	0	398
11:45 AM	2	0	2	0	3	156	19	0	26	0	18	0	19	189	1	0	435
Total	9	0	4	3	9	577	79	0	91	0	99	1	113	678	5	1	1669
12:00 PM	2	0	1	0	2	133	19	0	12	0	17	0	20	172	0	1	379
12:15 PM	1	0	0	0	0	160	16	1	25	0	18	0	21	209	1	0	452
12:30 PM	0	1	0	0	0	170	17	0	24	0	14	0	20	184	0	1	431
12:45 PM	0	0	1	2	2	152	12	0	21	0	12	0	18	179	0	1	400
Total	3	1	2	2	4	615	64	1	82	0	61	0	79	744	1	3	1662
Grand Total	12	1	6	5	13	1192	143	1	173	0	160	1	192	1422	6	4	3331
Apprch %	50	4.2	25	20.8	1	88.4	10.6	0.1	51.8	0	47.9	0.3	11.8	87.6	0.4	0.2	
Total %	0.4	0	0.2	0.2	0.4	35.8	4.3	0	5.2	0	4.8	0	5.8	42.7	0.2	0.1	
Cars & Peds	12	1	6	5	13	1187	142	1	172	0	159	1	192	1411	6	4	3312
% Cars & Peds	100	100	100	100	100	99.6	99.3	100	99.4	0	99.4	100	100	99.2	100	100	99.4
Trucks & Buses	0	0	0	0	0	5	1	0	1	0	1	0	0	11	0	0	19
% Trucks & Buses	0	0	0	0	0	0.4	0.7	0	0.6	0	0.6	0	0	0.8	0	0	0.6
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	2	0	2	0	4	3	156	19	0	178	26	0	18	0	44	19	189	1	0	209	435
12:00 PM	2	0	1	0	3	2	133	19	0	154	12	0	17	0	29	20	172	0	1	193	379
12:15 PM	1	0	0	0	1	0	160	16	1	177	25	0	18	0	43	21	209	1	0	231	452
12:30 PM	0	1	0	0	1	0	170	17	0	187	24	0	14	0	38	20	184	0	1	205	431
Total Volume	5	1	3	0	9	5	619	71	1	696	87	0	67	0	154	80	754	2	2	838	1697
% App. Total	55.6	11.1	33.3	0		0.7	88.9	10.2	0.1		56.5	0	43.5	0		9.5	90	0.2	0.2		
PHF	.625	.250	.375	.000	.563	.417	.910	.934	.250	.930	.837	.000	.931	.000	.875	.952	.902	.500	.500	.907	.939
Cars & Peds	5	1	3	0	9	5	617	70	1	693	87	0	66	0	153	80	750	2	2	834	1689
% Cars & Peds	100	100	100	0	100	100	99.7	98.6	100	99.6	100	0	98.5	0	99.4	100	99.5	100	100	99.5	99.5
Trucks & Buses	0	0	0	0	0	0	2	1	0	3	0	0	1	0	1	0	4	0	0	4	8
% Trucks & Buses	0	0	0	0	0	0	0.3	1.4	0	0.4	0	0	1.5	0	0.6	0	0.5	0	0	0.5	0.5
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transportation Data Corporation

Mario Perone, mperone1@verizon.net

tel (781)587-0086 cell (781)439-4999

N/S: Midas Drive/Bj's Drive
 E/W: E. Main Road (Route 138)
 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837AA
 Site Code : 24076.00
 Start Date : 4/27/2024
 Page No : 1

Groups Printed- Cars & Peds

Start Time	#158 Midas Driveway From North				E. Main Road (Route 138) From East				Bj's Plaza Driveway From South				E. Main Road (Route 138) From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	1	0	1	0	0	144	25	0	19	0	28	0	31	170	2	0	421
11:15 AM	3	0	1	0	4	136	20	0	19	0	25	0	37	163	1	1	410
11:30 AM	3	0	0	3	2	139	15	0	26	0	28	1	26	151	1	0	395
11:45 AM	2	0	2	0	3	156	19	0	26	0	18	0	19	187	1	0	433
Total	9	0	4	3	9	575	79	0	90	0	99	1	113	671	5	1	1659
12:00 PM	2	0	1	0	2	132	18	0	12	0	16	0	20	171	0	1	375
12:15 PM	1	0	0	0	0	160	16	1	25	0	18	0	21	208	1	0	451
12:30 PM	0	1	0	0	0	169	17	0	24	0	14	0	20	184	0	1	430
12:45 PM	0	0	1	2	2	151	12	0	21	0	12	0	18	177	0	1	397
Total	3	1	2	2	4	612	63	1	82	0	60	0	79	740	1	3	1653
Grand Total	12	1	6	5	13	1187	142	1	172	0	159	1	192	1411	6	4	3312
Apprch %	50	4.2	25	20.8	1	88.4	10.6	0.1	51.8	0	47.9	0.3	11.9	87.5	0.4	0.2	
Total %	0.4	0	0.2	0.2	0.4	35.8	4.3	0	5.2	0	4.8	0	5.8	42.6	0.2	0.1	

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	2	0	2	0	4	3	156	19	0	178	26	0	18	0	44	19	187	1	0	207	433
12:00 PM	2	0	1	0	3	2	132	18	0	152	12	0	16	0	28	20	171	0	1	192	375
12:15 PM	1	0	0	0	1	0	160	16	1	177	25	0	18	0	43	21	208	1	0	230	451
12:30 PM	0	1	0	0	1	0	169	17	0	186	24	0	14	0	38	20	184	0	1	205	430
Total Volume	5	1	3	0	9	5	617	70	1	693	87	0	66	0	153	80	750	2	2	834	1689
% App. Total	55.6	11.1	33.3	0		0.7	89	10.1	0.1		56.9	0	43.1	0		9.6	89.9	0.2	0.2		
PHF	.625	.250	.375	.000	.563	.417	.913	.921	.250	.931	.837	.000	.917	.000	.869	.952	.901	.500	.500	.907	.936

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 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837AA
 Site Code : 24076.00
 Start Date : 4/27/2024
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	#158 Midas Driveway From North				E. Main Road (Route 138) From East				Bj's Plaza Driveway From South				E. Main Road (Route 138) From West				Int. Total
	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	0	1	0	0	0	0	1	0	0	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
11:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Total	0	0	0	0	0	2	0	0	1	0	0	0	0	7	0	0	10
12:00 PM	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	4
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
12:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Total	0	0	0	0	0	3	1	0	0	0	1	0	0	4	0	0	9
Grand Total	0	0	0	0	0	5	1	0	1	0	1	0	0	11	0	0	19
Apprch %	0	0	0	0	0	83.3	16.7	0	50	0	50	0	0	100	0	0	
Total %	0	0	0	0	0	26.3	5.3	0	5.3	0	5.3	0	0	57.9	0	0	

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
11:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
12:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	0	1	0	0	1	4
Total Volume	0	0	0	0	0	0	3	1	0	4	0	0	1	0	1	0	7	0	0	7	12
% App. Total	0	0	0	0	0	0	75	25	0		0	0	100	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.375	.250	.000	.500	.000	.000	.250	.000	.250	.000	.583	.000	.000	.583	.750

Transportation Data Corporation

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 E/W: E. Main Road (Route 138)
 City, State: Middletown, RI
 Client: Pare/A. Bennett

File Name : 05837AA
 Site Code : 24076.00
 Start Date : 4/27/2024
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	#158 Midas Driveway From North				E. Main Road (Route 138) From East				Bj's Plaza Driveway From South				E. Main Road (Route 138) From West				Int. Total
	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	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approch %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total %																	

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Transportation Data Corporation

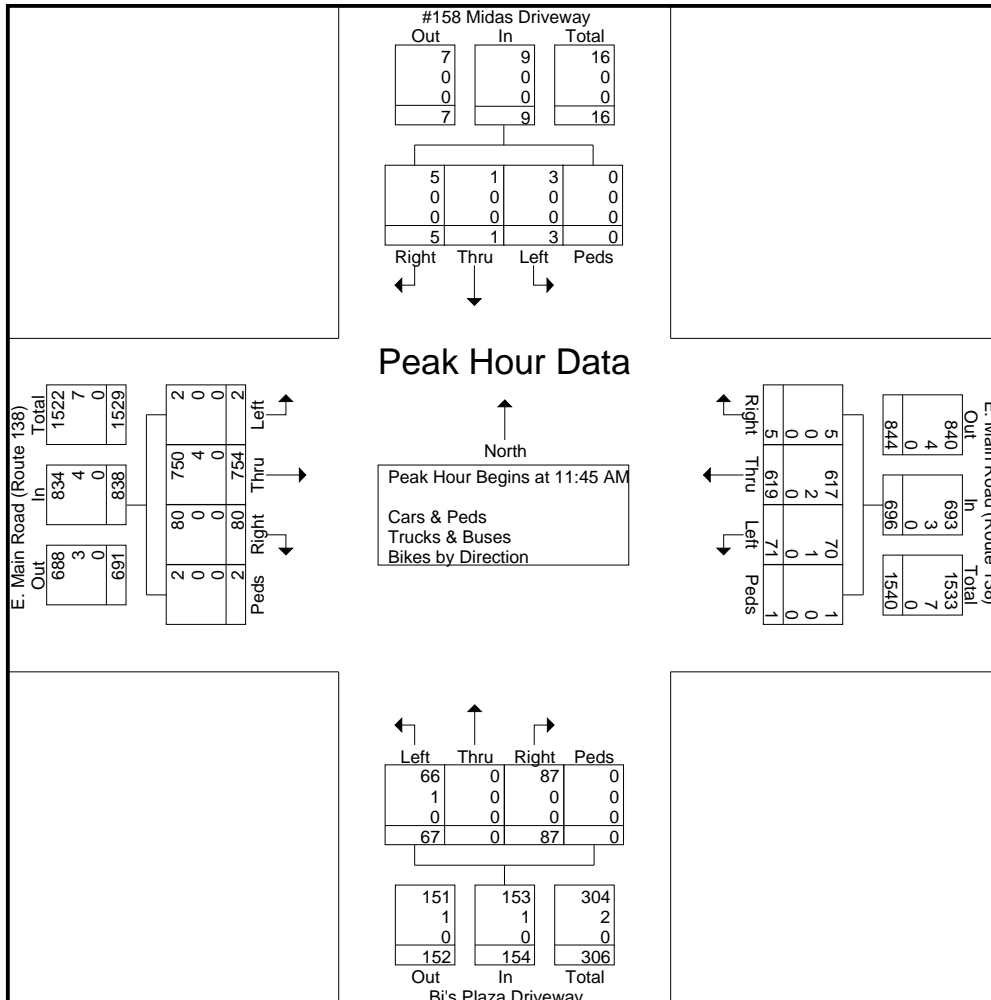
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File Name : 05837AA
 Site Code : 24076.00
 Start Date : 4/27/2024
 Page No : 1

Start Time	#158 Midas Driveway From North					E. Main Road (Route 138) From East					Bj's Plaza Driveway From South					E. Main Road (Route 138) From West					Int. Total
	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 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	2	0	2	0	4	3	156	19	0	178	26	0	18	0	44	19	189	1	0	209	435
12:00 PM	2	0	1	0	3	2	133	19	0	154	12	0	17	0	29	20	172	0	1	193	379
12:15 PM	1	0	0	0	1	0	160	16	1	177	25	0	18	0	43	21	209	1	0	231	452
12:30 PM	0	1	0	0	1	0	170	17	0	187	24	0	14	0	38	20	184	0	1	205	431
Total Volume	5	1	3	0	9	5	619	71	1	696	87	0	67	0	154	80	754	2	2	838	1697
% App. Total	55.6	11.1	33.3	0		0.7	88.9	10.2	0.1		56.5	0	43.5	0		9.5	90	0.2	0.2		
PHF	.625	.250	.375	.000	.563	.417	.910	.934	.250	.930	.837	.000	.931	.000	.875	.952	.902	.500	.500	.907	.939
Cars & Peds	5	1	3	0	9	5	617	70	1	693	87	0	66	0	153	80	750	2	2	834	1689
% Cars & Peds	100	100	100	0	100	100	99.7	98.6	100	99.6	100	0	98.5	0	99.4	100	99.5	100	100	99.5	99.5
Trucks & Buses	0	0	0	0	0	0	2	1	0	3	0	0	1	0	1	0	4	0	0	4	8
% Trucks & Buses	0	0	0	0	0	0	0.3	1.4	0	0.4	0	0	1.5	0	0.6	0	0.5	0	0	0.5	0.5
Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes by Direction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Month Factors by Factor Group for 1/1/2018 - 12/31/2018
Criteria: Type = I-SECTION, Is Perm Station = 1

Factor Group	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
IR	1.27	1.16	1.13	1.01	0.94	0.91	0.85	0.85	0.97	1.00	1.04	1.08
IU	1.14	1.04	1.06	1.14	0.96	0.93	0.96	0.96	2.05	1.14	1.15	1.04
OR	1.23	1.09	1.08	1.01	0.94	1.02	0.96	1.17	0.95	0.97	1.16	1.55
OU	1.13	1.07	1.05	1.02	0.96	0.97	1.00	1.04	1.11	0.99	1.07	1.05
REC	1.31	1.18	1.20	1.08	0.95	0.91	0.81	0.82	0.84	0.99	1.05	1.08
Average Monthly Factor	1.21	1.11	1.10	1.05	0.95	0.95	0.92	0.97	1.18	1.02	1.09	1.16

**Centreville Bank
Centreville Bank Branch, Middletown, RI**

**APPENDIX D
CENSUS DATA**

Centreville Bank Branch
Middletown, RI
Background Growth Calculation
PARE Project No. 24076.00
April 24, 2024



**US Census Data
City of Middletown**

	Population
2020	17075
2010	16150
Years	10

ANNUAL GROWTH RATE 0.56%

SAY 1.00%

Source:

<https://www.census.gov/quickfacts/fact/table/middletowntownnewportcountyrhodeisland>

**Centreville Bank
Centreville Bank Branch, Middletown, RI**

**APPENDIX E
TRIP GENERATION & DISTRIBUTION**

Centreville Bank Branch
 Middletown, RI
 Existing and Proposed Traffic Volumes
 PARE Project No. 24076.00
 April 24, 2024



2024-2029
 TRAFFIC VOLUME SUMMARY
 Future No-Build Growth Factor = 1.0%

Weekday PM Peak Hour 4:00 - 6:00 AM					
East Main Road at Site Driveway/BJ's Driveway					
	2024 Existing	Outside Developments	2029 Future No-Build	Total Site Generated	2029 Future Build
EB - L	0	0	0	16	16
EB - T	794	0	835	0	835
EB - R	63	0	67	0	67
WB - L	54	0	57	0	57
WB - T	600	0	631	0	631
WB - R	1	0	2	11	13
NB - L	72	0	76	0	76
NB - T	0	0	0	0	0
NB - R	82	0	87	0	87
SB - L	3	0	4	11	15
SB - T	0	0	0	0	0
SB - R	1	0	2	16	18

Weekend Midday Peak Hour 11:00 - 1:00 PM					
East Main Road at Site Driveway/BJ's Driveway					
	2024 Existing	Outside Developments	2029 Future No-Build	Total Site Generated	2029 Future Build
EB - L	2	0	3	16	19
EB - T	754	0	793	0	793
EB - R	80	0	85	0	85
WB - L	71	0	75	0	75
WB - T	619	0	651	0	651
WB - R	5	0	6	11	17
NB - L	67	0	71	0	71
NB - T	0	0	0	0	0
NB - R	87	0	92	0	92
SB - L	3	0	4	11	15
SB - T	1	0	2	0	2
SB - R	5	0	6	17	23

Drive-in Bank (912)

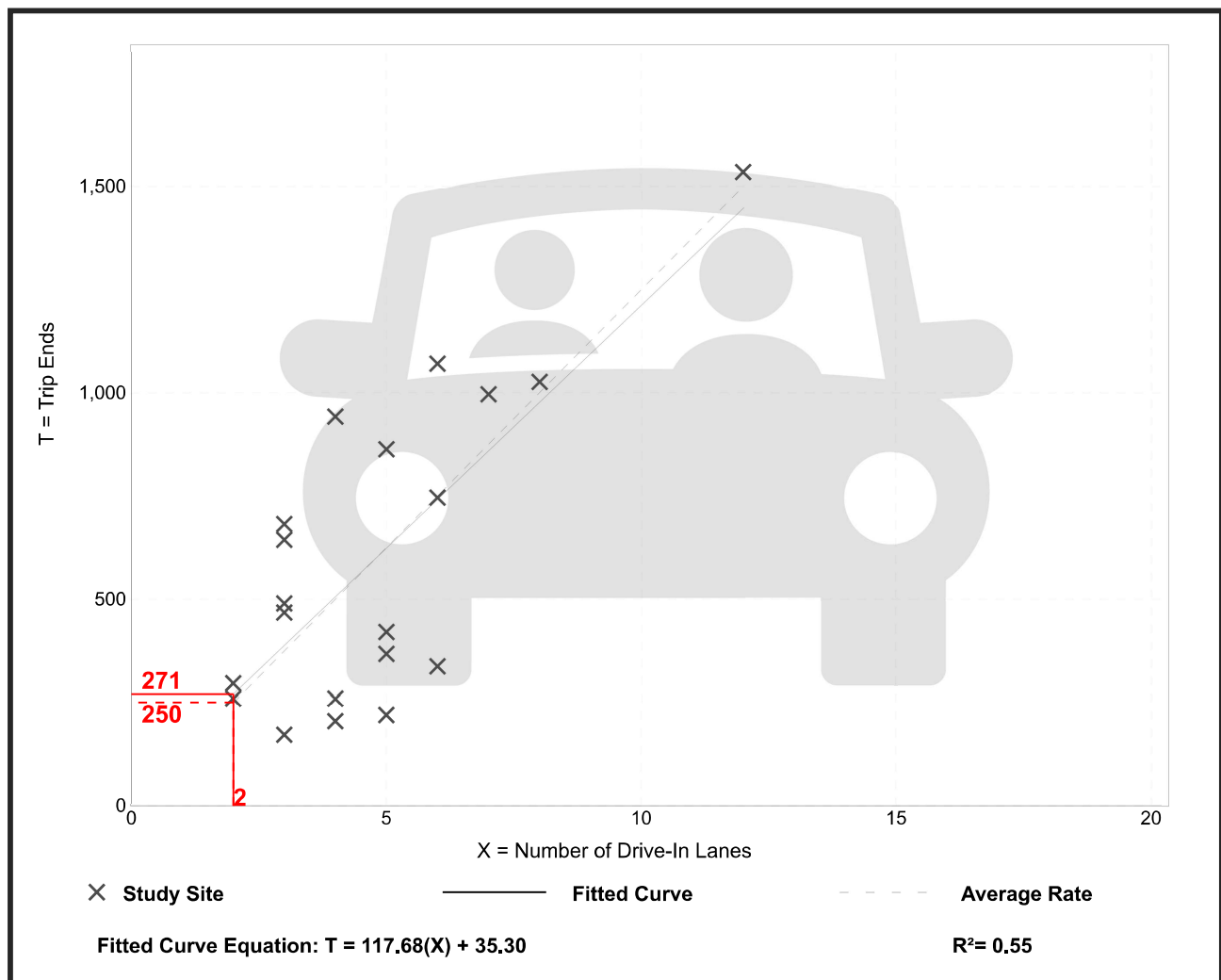
Vehicle Trip Ends vs: Drive-In Lanes
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 20
Avg. Num. of Drive-In Lanes: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Drive-In Lane

Average Rate	Range of Rates	Standard Deviation
125.03	44.00 - 235.50	55.01

Data Plot and Equation



Drive-in Bank (912)

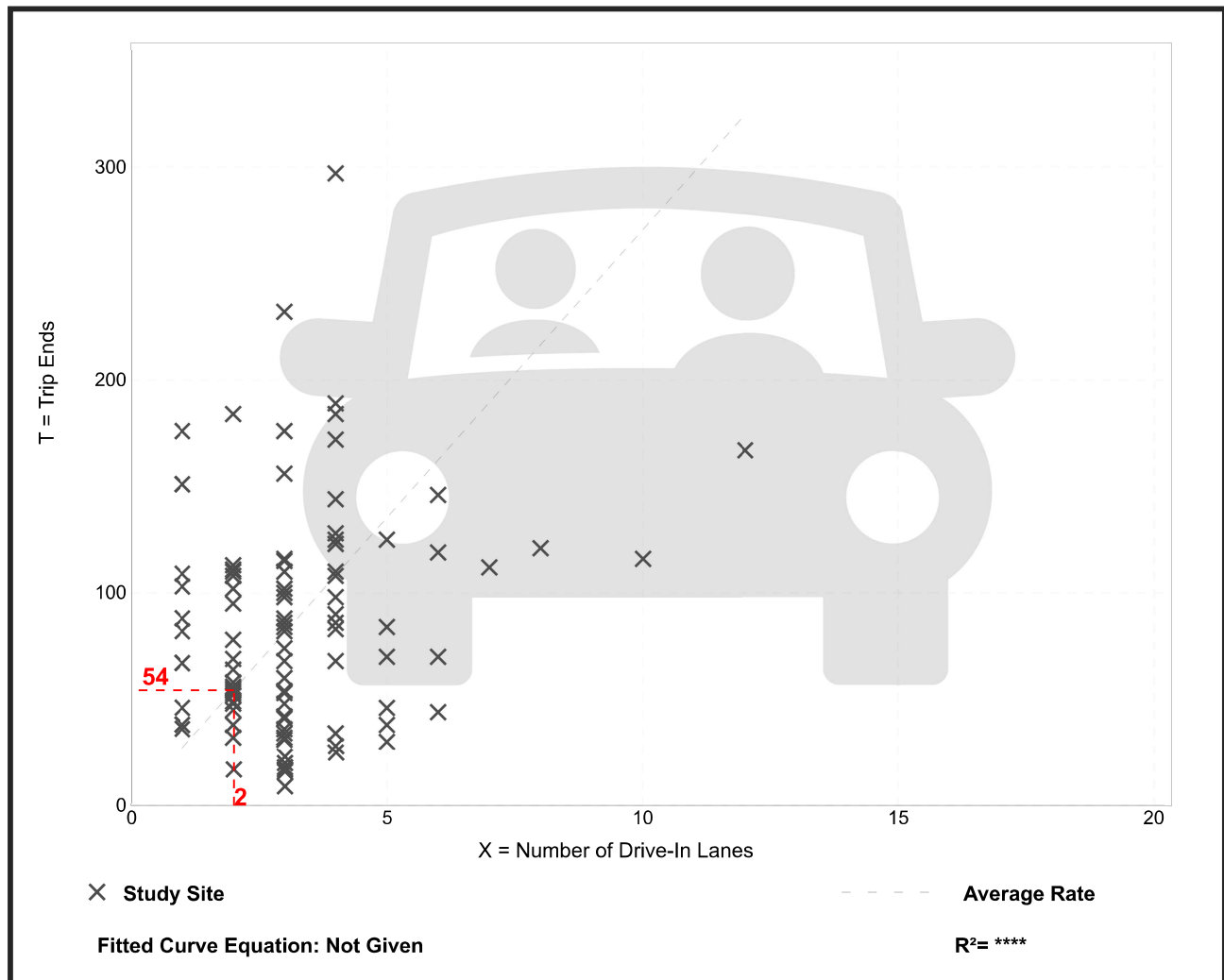
Vehicle Trip Ends vs: Drive-In Lanes
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 109
 Avg. Num. of Drive-In Lanes: 3
 Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per Drive-In Lane

Average Rate	Range of Rates	Standard Deviation
27.07	3.00 - 176.00	22.13

Data Plot and Equation



Drive-in Bank (912)

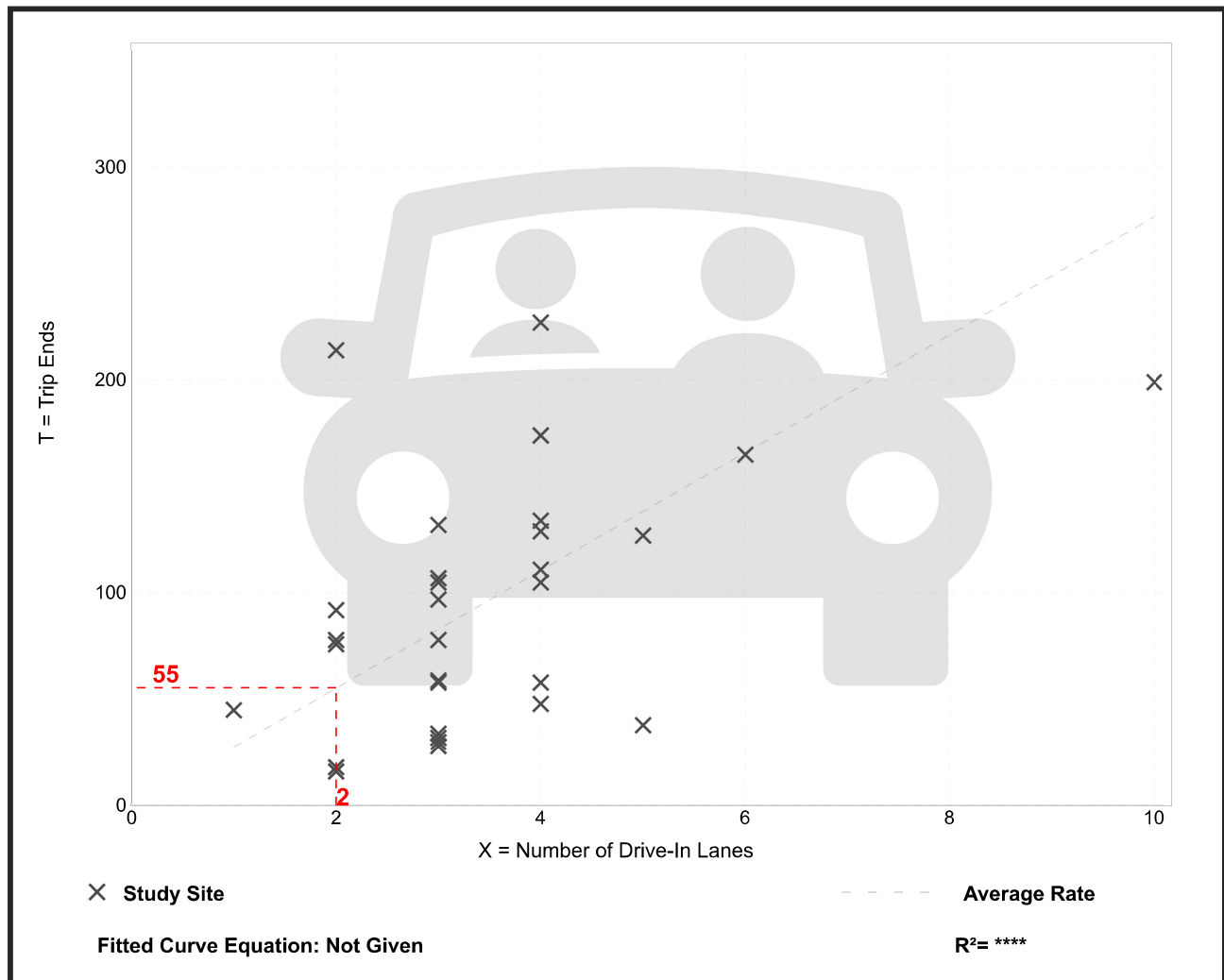
Vehicle Trip Ends vs: Drive-In Lanes
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. Num. of Drive-In Lanes: 3
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per Drive-In Lane

Average Rate	Range of Rates	Standard Deviation
27.67	7.60 - 107.00	17.13

Data Plot and Equation























**Centreville Bank
Centreville Bank Branch, Middletown, RI**

**APPENDIX F
TRAFFIC CAPACITY ANALYSES**

Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

Existing (2024) PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	858	69	59	648	2	78	0	89	4	0	2
Future Volume (vph)	0	858	69	59	648	2	78	0	89	4	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	45			85			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00										
Frt		0.986			0.998				0.850		0.943	
Flt Protected				0.950				0.950			0.972	
Satd. Flow (prot)	1900	3520	0	1805	3567	0	0	1787	1615	0	1742	0
Flt Permitted				0.223				0.745			0.810	
Satd. Flow (perm)	1900	3520	0	424	3567	0	0	1401	1615	0	1451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			2				81		95	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1437			1496			364			327	
Travel Time (s)		32.7			34.0			8.3			7.4	
Confl. Peds. (#/hr)	1		1									
Peak Hour Factor	0.25	0.95	0.72	0.79	0.89	0.25	0.72	0.25	0.82	0.38	0.25	0.25
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	903	96	75	728	8	108	0	109	11	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	999	0	75	736	0	0	108	109	0	19	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			3	1		3	
Permitted Phases	2			6			3		3	3		
Detector Phase	5	2		1	6		3	3	1	3	3	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		6.0	6.0	5.0	6.0	6.0	
Minimum Split (s)	10.0	15.0		10.0	15.0		22.0	22.0	10.0	22.0	22.0	
Total Split (s)	16.0	42.0		16.0	42.0		22.0	22.0	16.0	22.0	22.0	
Total Split (%)	20.0%	52.5%		20.0%	52.5%		27.5%	27.5%	20.0%	27.5%	27.5%	
Maximum Green (s)	11.0	37.0		11.0	37.0		17.0	17.0	11.0	17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	2.2	2.8		2.2	2.8		2.8	2.8	2.2	2.8	2.8	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)							4.0	4.0		4.0	4.0	
Flash Dont Walk (s)							17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)							3	3		3	3	
Act Effct Green (s)		53.1		60.9	61.9			11.4	19.9		11.4	
Actuated g/C Ratio		0.66		0.76	0.77			0.14	0.25		0.14	
v/c Ratio		0.43		0.18	0.27			0.54	0.24		0.07	

Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

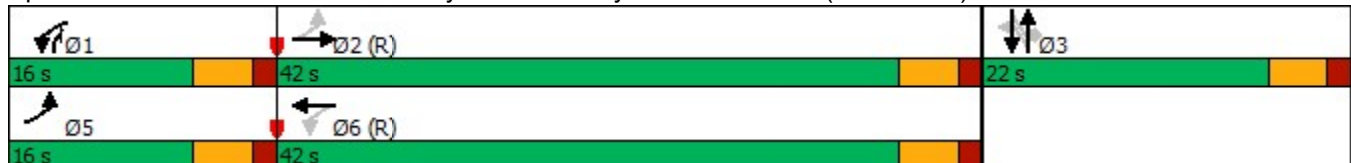
Existing (2024) PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		9.6		4.8	4.1			41.0	8.5		0.5	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay		9.6		4.8	4.1			41.0	8.5		0.5	
LOS		A		A	A			D	A		A	
Approach Delay		9.6			4.1			24.7			0.5	
Approach LOS		A			A			C			A	
Queue Length 50th (ft)		128		8	51			51	10		0	
Queue Length 95th (ft)		220		21	94			23	34		0	
Internal Link Dist (ft)		1357			1416			284			247	
Turn Bay Length (ft)				175								
Base Capacity (vph)		2341		512	2758			297	562		383	
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		0.43		0.15	0.27			0.36	0.19		0.05	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	75 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.54
Intersection Signal Delay:	8.9
Intersection LOS:	A
Intersection Capacity Utilization:	48.9%
ICU Level of Service:	A
Analysis Period (min):	15





















Splits and Phases: 1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)



Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

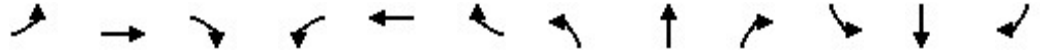
Existing (2024) Saturday Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	815	87	77	669	6	73	0	94	4	2	6
Future Volume (vph)	3	815	87	77	669	6	73	0	94	4	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	45			85			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.997				0.850		0.953	
Flt Protected	0.950			0.950				0.950			0.981	
Satd. Flow (prot)	1805	3527	0	1787	3599	0	0	1770	1615	0	1776	0
Flt Permitted	0.367			0.231				0.738			0.867	
Satd. Flow (perm)	697	3527	0	435	3599	0	0	1375	1615	0	1570	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			3				80		10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1437			1496			364			327	
Travel Time (s)		32.7			34.0			8.3			7.4	
Peak Hour Factor	0.50	0.90	0.95	0.93	0.91	0.42	0.93	0.25	0.84	0.38	0.25	0.63
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	6	906	92	83	735	14	78	0	112	11	8	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	998	0	83	749	0	0	78	112	0	29	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			3	1		3	
Permitted Phases	2			6			3		3	3		
Detector Phase	5	2		1	6		3	3	1	3	3	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		6.0	6.0	5.0	6.0	6.0	
Minimum Split (s)	10.0	15.0		10.0	15.0		22.0	22.0	10.0	22.0	22.0	
Total Split (s)	16.0	42.0		16.0	42.0		22.0	22.0	16.0	22.0	22.0	
Total Split (%)	20.0%	52.5%		20.0%	52.5%		27.5%	27.5%	20.0%	27.5%	27.5%	
Maximum Green (s)	11.0	37.0		11.0	37.0		17.0	17.0	11.0	17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	2.2	2.8		2.2	2.8		2.8	2.8	2.2	2.8	2.8	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)							4.0	4.0		4.0	4.0	
Flash Dont Walk (s)							17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)							3	3		3	3	
Act Effct Green (s)	57.0	54.0		61.3	60.8			10.4	19.0		10.4	
Actuated g/C Ratio	0.71	0.68		0.77	0.76			0.13	0.24		0.13	
v/c Ratio	0.01	0.42		0.19	0.27			0.44	0.25		0.14	
Control Delay	4.0	9.1		4.6	5.2			38.4	9.2		22.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

Existing (2024) Saturday Peak

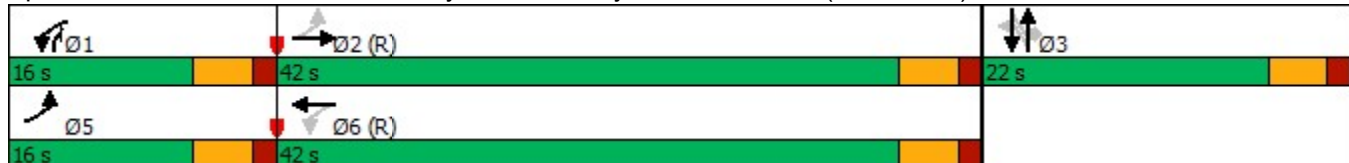


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	4.0	9.1		4.6	5.2			38.4	9.2		22.5	
LOS	A	A		A	A			D	A		C	
Approach Delay		9.1			5.1			21.2			22.5	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	1	120		8	46			37	12		9	
Queue Length 95th (ft)	3	221		27	145			18	37		5	
Internal Link Dist (ft)		1357			1416			284			247	
Turn Bay Length (ft)	45			175								
Base Capacity (vph)	688	2385		522	2736			292	544		341	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.01	0.42		0.16	0.27			0.27	0.21		0.09	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	75 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.44
Intersection Signal Delay:	8.8
Intersection LOS:	A
Intersection Capacity Utilization	52.2%
ICU Level of Service	A
Analysis Period (min)	15




















Splits and Phases: 1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)



Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

Future (2029) No-Build PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	902	73	63	682	3	82	0	94	5	0	3
Future Volume (vph)	0	902	73	63	682	3	82	0	94	5	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	45			85			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00										
Frt		0.986			0.998				0.850		0.935	
Flt Protected				0.950				0.950			0.975	
Satd. Flow (prot)	1900	3520	0	1805	3568	0	0	1787	1615	0	1732	0
Flt Permitted				0.206				0.741			0.820	
Satd. Flow (perm)	1900	3520	0	391	3568	0	0	1394	1615	0	1457	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			3				70		95	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1437			1496			364			327	
Travel Time (s)		32.7			34.0			8.3			7.4	
Confl. Peds. (#/hr)	1		1									
Peak Hour Factor	0.25	0.95	0.72	0.79	0.89	0.25	0.72	0.25	0.82	0.38	0.25	0.25
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	949	101	80	766	12	114	0	115	13	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1050	0	80	778	0	0	114	115	0	25	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			3	1		3	
Permitted Phases	2			6			3		3	3		
Detector Phase	5	2		1	6		3	3	1	3	3	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		6.0	6.0	5.0	6.0	6.0	
Minimum Split (s)	10.0	15.0		10.0	15.0		22.0	22.0	10.0	22.0	22.0	
Total Split (s)	16.0	42.0		16.0	42.0		22.0	22.0	16.0	22.0	22.0	
Total Split (%)	20.0%	52.5%		20.0%	52.5%		27.5%	27.5%	20.0%	27.5%	27.5%	
Maximum Green (s)	11.0	37.0		11.0	37.0		17.0	17.0	11.0	17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	2.2	2.8		2.2	2.8		2.8	2.8	2.2	2.8	2.8	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)							4.0	4.0		4.0	4.0	
Flash Dont Walk (s)							17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)							3	3		3	3	
Act Effct Green (s)		52.8		60.6	61.6			11.7	20.2		11.7	
Actuated g/C Ratio		0.66		0.76	0.77			0.15	0.25		0.15	
v/c Ratio		0.45		0.20	0.28			0.56	0.25		0.09	

Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

Future (2029) No-Build PM Peak

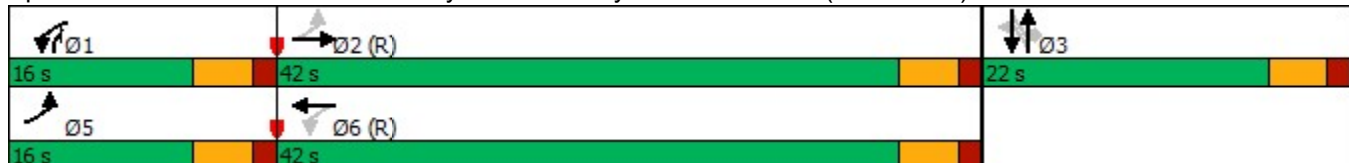


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		10.0		5.0	4.2			41.6	10.4		0.6	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay		10.0		5.0	4.2			41.6	10.4		0.6	
LOS		B		A	A			D	B		A	
Approach Delay		10.0			4.3			25.9			0.6	
Approach LOS		B			A			C			A	
Queue Length 50th (ft)		140		9	56			54	17		0	
Queue Length 95th (ft)		235		22	101			24	41		0	
Internal Link Dist (ft)		1357			1416			284			247	
Turn Bay Length (ft)				175								
Base Capacity (vph)		2328		490	2749			296	559		384	
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		0.45		0.16	0.28			0.39	0.21		0.07	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	75 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	9.3
Intersection LOS:	A
Intersection Capacity Utilization	50.6%
ICU Level of Service	A
Analysis Period (min)	15




















Splits and Phases: 1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)



Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

Future (2029) No-Build Saturday Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	857	92	81	704	7	77	0	99	5	3	7
Future Volume (vph)	4	857	92	81	704	7	77	0	99	5	3	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	45			85			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.997				0.850		0.959	
Flt Protected	0.950			0.950				0.950			0.982	
Satd. Flow (prot)	1805	3527	0	1787	3599	0	0	1770	1615	0	1789	0
Flt Permitted	0.352			0.214				0.734			0.868	
Satd. Flow (perm)	669	3527	0	403	3599	0	0	1367	1615	0	1582	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			4				70		11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1437			1496			364			327	
Travel Time (s)		32.7			34.0			8.3			7.4	
Peak Hour Factor	0.50	0.90	0.95	0.93	0.91	0.42	0.93	0.25	0.84	0.38	0.25	0.63
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	8	952	97	87	774	17	83	0	118	13	12	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	1049	0	87	791	0	0	83	118	0	36	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			3	1		3	
Permitted Phases	2			6			3		3	3		
Detector Phase	5	2		1	6		3	3	1	3	3	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		6.0	6.0	5.0	6.0	6.0	
Minimum Split (s)	10.0	15.0		10.0	15.0		22.0	22.0	10.0	22.0	22.0	
Total Split (s)	16.0	42.0		16.0	42.0		22.0	22.0	16.0	22.0	22.0	
Total Split (%)	20.0%	52.5%		20.0%	52.5%		27.5%	27.5%	20.0%	27.5%	27.5%	
Maximum Green (s)	11.0	37.0		11.0	37.0		17.0	17.0	11.0	17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	2.2	2.8		2.2	2.8		2.8	2.8	2.2	2.8	2.8	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)							4.0	4.0		4.0	4.0	
Flash Dont Walk (s)							17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)							3	3		3	3	
Act Effct Green (s)	56.7	53.7		61.1	60.6			10.6	19.3		10.6	
Actuated g/C Ratio	0.71	0.67		0.76	0.76			0.13	0.24		0.13	
v/c Ratio	0.01	0.44		0.21	0.29			0.46	0.27		0.17	
Control Delay	4.2	9.5		4.8	5.4			39.0	11.1		23.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

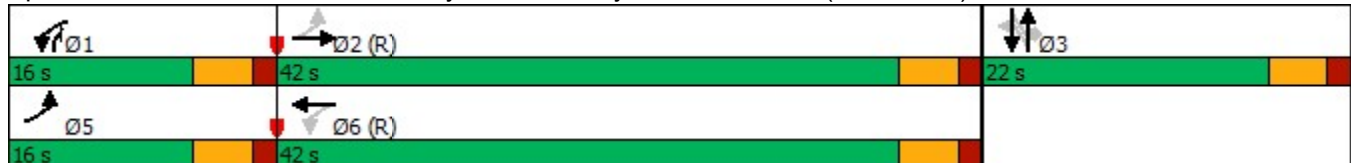
Future (2029) No-Build Saturday Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	4.2	9.5		4.8	5.4			39.0	11.1		23.5	
LOS	A	A		A	A			D	B		C	
Approach Delay		9.4			5.3			22.6			23.5	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	1	132		9	51			39	18		11	
Queue Length 95th (ft)	3	237		28	155			19	44		6	
Internal Link Dist (ft)		1357			1416			284			247	
Turn Bay Length (ft)	45			175								
Base Capacity (vph)	668	2374		500	2727			290	540		344	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.01	0.44		0.17	0.29			0.29	0.22		0.10	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	75 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.46
Intersection Signal Delay:	9.2
Intersection LOS:	A
Intersection Capacity Utilization	54.3%
ICU Level of Service	A
Analysis Period (min)	15





















Splits and Phases: 1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)



Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

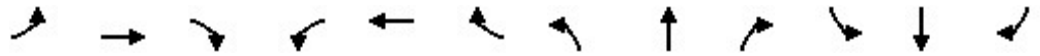
Future (2029) Build PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	902	73	63	682	14	82	0	94	16	0	19
Future Volume (vph)	16	902	73	63	682	14	82	0	94	16	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	45			85			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00										
Frt		0.986			0.997				0.850		0.931	
Flt Protected	0.950			0.950				0.950			0.976	
Satd. Flow (prot)	1805	3520	0	1805	3564	0	0	1787	1615	0	1726	0
Flt Permitted	0.355			0.210				0.729			0.810	
Satd. Flow (perm)	674	3520	0	399	3564	0	0	1371	1615	0	1433	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			4				70			95
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1437			1496			364				327
Travel Time (s)		32.7			34.0			8.3				7.4
Confl. Peds. (#/hr)	1		1									
Peak Hour Factor	0.92	0.95	0.72	0.79	0.89	0.82	0.72	0.25	0.82	0.78	0.25	0.85
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%
Adj. Flow (vph)	17	949	101	80	766	17	114	0	115	21	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	1050	0	80	783	0	0	114	115	0	43	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			3	1		3	
Permitted Phases	2			6			3		3	3		
Detector Phase	5	2		1	6		3	3	1	3	3	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		6.0	6.0	5.0	6.0	6.0	
Minimum Split (s)	10.0	15.0		10.0	15.0		22.0	22.0	10.0	22.0	22.0	
Total Split (s)	16.0	42.0		16.0	42.0		22.0	22.0	16.0	22.0	22.0	
Total Split (%)	20.0%	52.5%		20.0%	52.5%		27.5%	27.5%	20.0%	27.5%	27.5%	
Maximum Green (s)	11.0	37.0		11.0	37.0		17.0	17.0	11.0	17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	2.2	2.8		2.2	2.8		2.8	2.8	2.2	2.8	2.8	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)							4.0	4.0		4.0	4.0	
Flash Dont Walk (s)							17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)							3	3		3	3	
Act Effct Green (s)	55.8	52.7		59.9	59.5			11.7	20.3		11.7	
Actuated g/C Ratio	0.70	0.66		0.75	0.74			0.15	0.25		0.15	
v/c Ratio	0.03	0.45		0.20	0.30			0.57	0.25		0.15	

Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

Future (2029) Build PM Peak

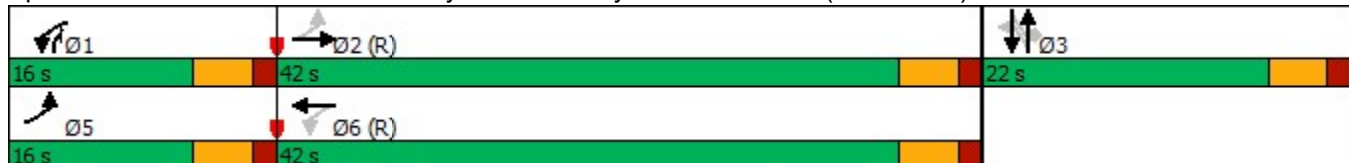


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	4.4	10.1		5.1	5.8			41.9	10.3		1.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	4.4	10.1		5.1	5.8			41.9	10.3		1.5	
LOS	A	B		A	A			D	B		A	
Approach Delay		10.0			5.7			26.1			1.5	
Approach LOS		B			A			C			A	
Queue Length 50th (ft)	2	141		9	56			54	17		0	
Queue Length 95th (ft)	8	235		22	153			24	41		0	
Internal Link Dist (ft)		1357			1416			284			247	
Turn Bay Length (ft)	45			175								
Base Capacity (vph)	663	2325		495	2650			291	561		379	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.03	0.45		0.16	0.30			0.39	0.20		0.11	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	75 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	9.8
Intersection LOS:	A
Intersection Capacity Utilization	52.7%
ICU Level of Service	A
Analysis Period (min)	15





















Splits and Phases: 1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)



Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

Future (2029) Build Saturday Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	857	92	81	704	18	77	0	99	16	3	24
Future Volume (vph)	20	857	92	81	704	18	77	0	99	16	3	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45		0	175		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	45			85			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.995				0.850		0.935	
Flt Protected	0.950			0.950				0.950			0.984	
Satd. Flow (prot)	1805	3527	0	1787	3592	0	0	1770	1615	0	1748	0
Flt Permitted	0.347			0.218				0.872			0.873	
Satd. Flow (perm)	659	3527	0	410	3592	0	0	1624	1615	0	1551	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			5				70		29	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1437			1496			364			327	
Travel Time (s)		32.7			34.0			8.3			7.4	
Peak Hour Factor	0.85	0.90	0.95	0.93	0.91	0.74	0.93	0.25	0.84	0.83	0.25	0.84
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	24	952	97	87	774	24	83	0	118	19	12	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1049	0	87	798	0	0	83	118	0	60	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			3	1		3	
Permitted Phases	2			6			3		3	3		
Detector Phase	5	2		1	6		3	3	1	3	3	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		6.0	6.0	5.0	6.0	6.0	
Minimum Split (s)	10.0	15.0		10.0	15.0		22.0	22.0	10.0	22.0	22.0	
Total Split (s)	16.0	42.0		16.0	42.0		22.0	22.0	16.0	22.0	22.0	
Total Split (%)	20.0%	52.5%		20.0%	52.5%		27.5%	27.5%	20.0%	27.5%	27.5%	
Maximum Green (s)	11.0	37.0		11.0	37.0		17.0	17.0	11.0	17.0	17.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	2.2	2.8		2.2	2.8		2.8	2.8	2.2	2.8	2.8	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Walk Time (s)							4.0	4.0		4.0	4.0	
Flash Dont Walk (s)							17.0	17.0		17.0	17.0	
Pedestrian Calls (#/hr)							3	3		3	3	
Act Effct Green (s)	56.8	53.7		60.1	58.4			10.6	19.3		10.6	
Actuated g/C Ratio	0.71	0.67		0.75	0.73			0.13	0.24		0.13	
v/c Ratio	0.04	0.44		0.21	0.30			0.38	0.27		0.26	
Control Delay	4.2	9.5		4.9	6.5			35.4	11.0		20.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	

Lanes, Volumes, Timings

1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)

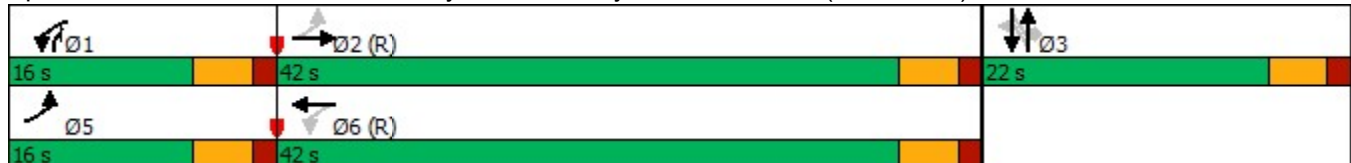
Future (2029) Build Saturday Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	4.2	9.5		4.9	6.5			35.4	11.0		20.4	
LOS	A	A		A	A			D	B		C	
Approach Delay		9.4			6.4			21.1			20.4	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	2	132		9	52			39	18		14	
Queue Length 95th (ft)	10	237		28	159			19	44		3	
Internal Link Dist (ft)		1357			1416			284			247	
Turn Bay Length (ft)	45			175								
Base Capacity (vph)	662	2371		504	2622			345	542		352	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.04	0.44		0.17	0.30			0.24	0.22		0.17	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	75 (94%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.44
Intersection Signal Delay:	9.6
Intersection LOS:	A
Intersection Capacity Utilization	53.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: BJ's Driveway/Site Driveway & East Main Rd (RI Rte.138)



**Centreville Bank
Centreville Bank Branch, Middletown, RI**

**APPENDIX G
TRAFFIC SIGNAL PLANS**

