McDonough & Rea Associates, Inc.

Traffic and Transportation Consulting

Kevin P. McDonough (1953-1994)
John H. Rea, P.E.
Jay S. Troutman, Jr., P.E.
Scott T. Kennel

April 26, 2024

Barnegat Township Zoning Board
900 West Bay Avenue
Barnegat, New Jersey 08005

Re: Traffic Study
Residence Club at Barnegat
Lot 9.02 in Block 114
Barnegat Township, Ocean County
MRA File No. 24-102

Dear Board Members:

McDonough & Rea Associates (MRA) has been asked to provide the Barnegat Township Zoning Board with a *Traffic Impact Analysis* for the *Residence Club at Barnegat,* a residential project consisting of 74 one and two-bedroom age restricted apartments to be located on the west side of Gunning River Road on Oak Avenue (also known as Erin Way). *Figure 1* in the *Appendix* illustrates the approximate location of the *Residence Club at Barnegat.*

Plans prepared by Schlatmann Engineering Associates (SEA) show construction of 2 residential buildings serviced by a driveway to Erin Way, supported by 112 parking spaces.

SCOPE OF STUDY

In order to prepare a thorough *Traffic Impact Analysis* for the *Residence Club at Barnegat*, MRA conducted the following tasks:

1. Made field visits to the site to establish existing roadway and traffic conditions in the area.

2. Conducted peak hour traffic counts at the intersection of Gunning River Road and Oak Avenue.

3. Prepared trip generation estimates for the age-restricted apartments based upon Institute of Transportation Engineers (ITE) data.

Please reply to:
☒ **1431 Lakewood Road, Suite C, Manasquan, NJ 08736 • (732) 528-7076 • Fax (732) 528-6673**
☐ **105 Elm Street, Lower Level, Westfield, NJ 07090 • (908) 789-7180 • Fax (908) 789-7181**

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4. Prepared estimates of future traffic demand in the area for the 2034 design year including background traffic growth and traffic to be generated from other projects under development or approved in the area.

5. Conducted level of service and capacity analyses for the Gunning River Road intersection.

6. Reviewed the *Use VariancePlan* with respect to availability and accessibility of the parking supply and conformance to the New Jersey Residential Site Improvement Standards (RSIS).

The following report sets forth the database accumulated and the conclusions reached with respect to the *Residence Club at Barnegat*.

EXISTING CONDITIONS/TRAFFIC VOLUMES

The subject property is vacant and is located on the west side of Gunning River Road along Oak Avenue, south of West Bay Avenue. Gunning River Road is a north/south local collector roadway under the jurisdiction of Ocean County and provides for 1 lane in each direction with shoulders in the area with a posted speed limit of 35 MPH. Oak Avenue currently serves an office complex, *Commons at Hampton Ridge*, bounded by Gunning River Road to the east and Oak Avenue to the south.

Traffic volume data was collected by conducting manual turning movement counts in February 2024 at the intersection of Gunning River Road and Oak Avenue during the critical morning (7:00 AM -10:00 AM) and afternoon (3:00 PM-6:00 PM) peak hours when traffic generated by the apartments and traffic on the adjacent roadway network will be at a maximum. Peak hours in the area occur between 9:00 AM and 10:00 AM and 5:00 PM-6:00 PM. *Table I* illustrates peak hour traffic volumes passing the site frontage.

TABLE I
GUNNING RIVER ROAD
EXISTING PEAK HOUR TRAFFIC VOLUMES

	AM PSH	PM PSH
Northbound	466	534
Southbound	403	572

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TRIP GENERATION AND DISTRIBUTION

Estimates of traffic to be generated by the 74 age restricted units were made after consulting the *11th Edition* of the ITE *Trip Generation Manual.* ITE Land Use Code 252, *Senior Adult Housing-Multi-Family*, trip rates were reviewed and *Table II* illustrates the anticipated peak hour traffic generation from the 74 units.

TABLE II
TRIP GENERATION
74 AGE-RESTRICTED APARTMENTS

	IN	OUT	TOTAL
AM Peak Hour	11	14	25
PM Peak Hour	14	11	25

The foregoing estimates of peak hour traffic generation relate only to the amount of traffic generated during the highest hour of traffic flow in the morning and afternoon. They are not indicative of the total amount of traffic generated by the community over a 4 hour window in the morning or in the afternoon, but only reflect peak hour traffic generation which traffic engineers utilize to measure the impact of a development proposal.

With respect to the anticipated distribution of traffic from the community, based on the location of the property and access to higher order roadways such as the Garden State Parkway, West Bay Avenue, Route 9, etc., traffic was distributed as follows:

- To and from the north on Gunning River Road: 65 percent
- To and from the south on Gunning River Road: 35 percent

ANALYSIS OF FUTURE TRAFFIC

A design year of 2034, 10 years in the future was selected for analysis in accordance with Ocean County Planning Board protocol. Design year 2034 *no-build* traffic volumes were developed after consulting the New Jersey Department of Transportation's (NJDOT) *Historical Background Growth Rate* data for the area.

Site generated and distributed traffic volumes from the *Residence Club at Barnegat* were then surcharged onto 2034 *no-build* volumes and are shown on *Table III*, entitled *2034 Future Build Traffic Volumes*.

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TABLE III
2034 FUTURE BUILD TRAFFIC VOLUMES
GUNNING RIVER ROAD AND OAK AVENUE

ROADWAY	APPROACH	MOVEMENT	AM PSH	PM PSH
Gunning River Road	Northbound	Left	11	4
		Thru	505	538
	Southbound	Thru	428	630
		Right	23	11
Oak Avenue	Eastbound	Left	24	14
		Right	6	6

Traffic engineers calculate levels of service of unsignalized intersections which relate to the quality of traffic flow. Level of service is a measure of average control delay. Average control delay is the time lost due to deceleration and the amount of time from when a vehicle is stopped for a traffic control device (or at the end of the queue) to when the vehicle departs the intersection. Delay is a relative quantity of driver discomfort, frustration, fuel consumption, and loss in travel time.

Levels of service range from "A" to "F" with "A" being the highest or best attainable level of service. Level of service "E" with average control delays of not more than 50 seconds per vehicle at an unsignalized intersection indicates near to or at capacity conditions and is generally considered the limit of acceptable level of service and delay.

Full definitions of levels of service for unsignalized intersections as well as level of service summaries are included in the *Appendix*. The intersections studied by this report were analyzed according to the procedures set forth in the *Highway Capacity Manual 2022*, using the *McTrans Highway Capacity Software (HCS 2023)*.

GUNNING RIVER ROAD AT OAK AVENUE

Exiting movements from the community to Oak Avenue were analyzed using the unsignalized capacity analysis procedure. Findings were that the Oak Avenue eastbound movements to Gunning River Road, for both the AM and PM peak street hours, will operate at level of service "C" from the site driveway to Gunning River Road. The Gunning River Road northbound left turn movement is projected to operate at level of service "A" for both the AM and PM peak hours. Therefore, the Oak Avenue and Gunning River Road intersection will operate well within accepted traffic engineering parameters.

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Copies of the *HCS* printouts are appended to this letter.

USE VARIANCE PLAN AND PARKING

The *Use Variance Plan,* prepared by SEA shows a single point of access to Oak Avenue. Based on the amount of daily traffic generated by the 74 apartments, a single point of access is acceptable under New Jersey RSIS. The *Use Variance Plan* details 112 parking spaces, whereas 143 spaces are the maximum spaces required by RSIS. It is MRA's experience that the parking demand for age-restricted multi-family dwellings is 1 space per dwelling and, therefore, the 1.5 spaces will be more than adequate to serve the development. The *Use Variance Plan* also details 6 ADA parking spaces and 16 electric vehicle spaces.

CONCLUSIONS

It is concluded, based on the analysis set forth in this report, that plans to construct the *Residence Club at Barnegat,* a 74-unit age-restricted apartment complex on Gunning River Road can be approved and operate compatibly with future traffic conditions in the area. The site driveway to Gunning River Road will operate well within accepted traffic engineering parameters.

The *Use Variance Plan* itself has been properly designed with respect to New Jersey RSIS and provides for proper circulation, a more than adequate number of parking stalls, for age-restricted apartments, and is in conformance with proper traffic engineering principals.

A representative from MRA will be in attendance at an upcoming Barnegat Township Zoning Board hearing to provide expert testimony and answer any questions Board members, Board experts or the public may have.

Very truly yours,

John H. Rea, PE
Principal

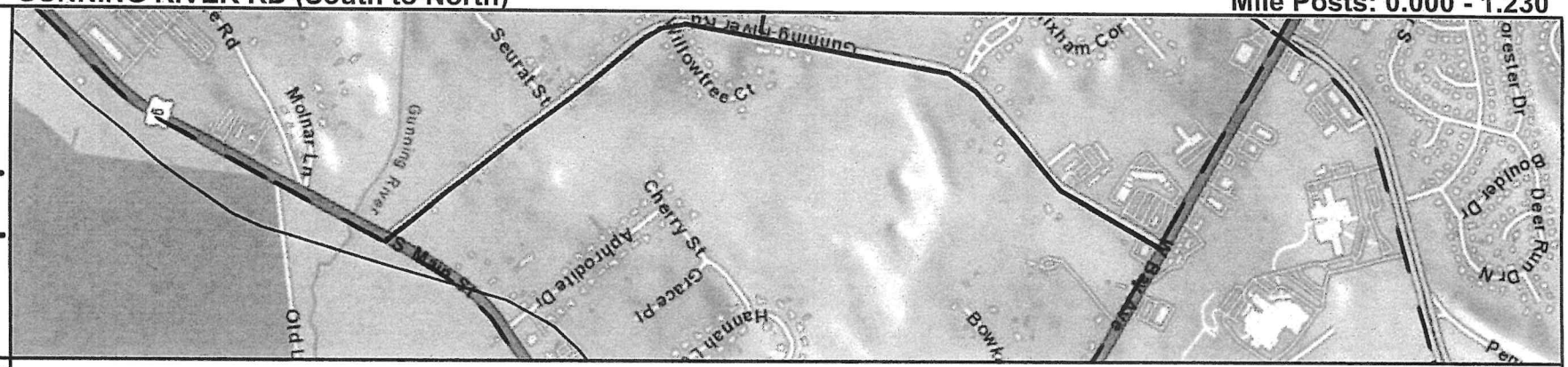
Scott T. Kennel
Sr. Associate

cc: Jerald Cernero
Kenneth F.X. Schlatmann, PE, PP
Craig Rahenkamp, PP

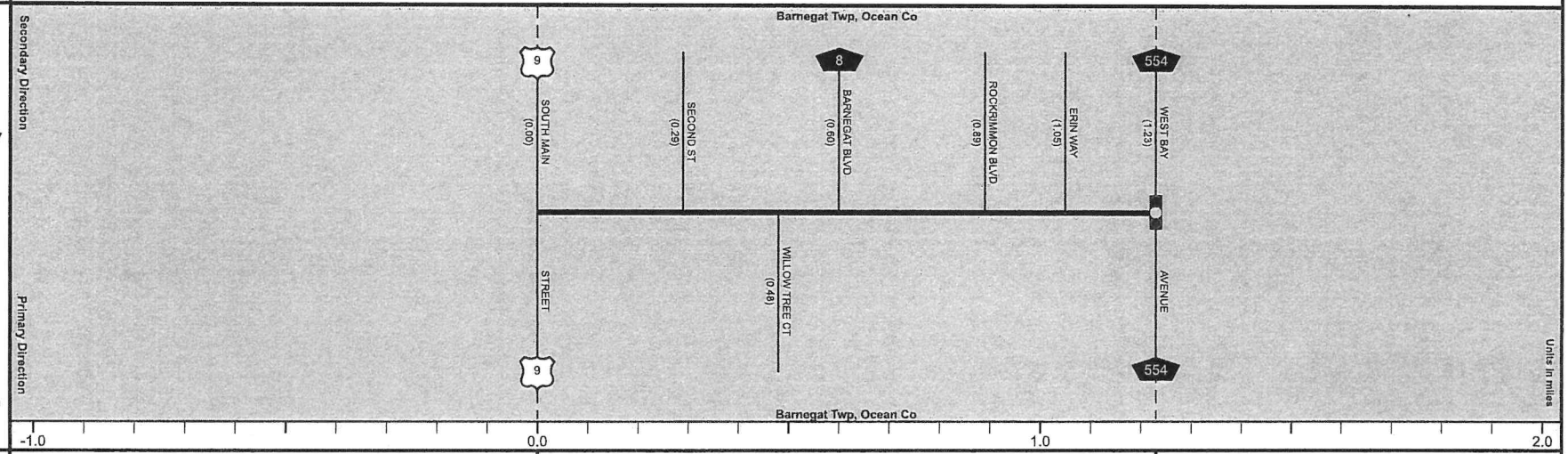
APPENDIX

GUNNING RIVER RD (South to North)

Mile Posts: 0.000 - 1.230



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name		Gunning River Road	
Jurisdiction		County	
Functional Class		Urban Local	
Federal Aid - NHS Sy		Non-Federal Aid	
Control Section			
Speed Limit		35	
Number of Lanes		2	
Med. Type		None	
Med. Width			
Pavement		24	
Shoulder		4 | 6 | 12 | 4	
Traffic Volume			
Traffic Sta. ID			
Structure No.			
Enlarged Views	Begin Gunning River Rd MP=0.00		End Gunning River Rd MP=1.23

Page Created: June, 2020

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RESIDENCE CLUB @ BARNEGAT
GUNNING RIVER ROAD & OAK AVENUE
BARNEGAT TOWNSHIP, OCEAN COUNTY
MRA JOB 24-102 FRIDAY AM COUNT

File Name : 24102 gunning river & oak am1
Site Code : 00024102
Start Date : 2/2/2024

Groups Printed- CARS - TRUCKS - SCHOOL BUS

	Gunning River Road Southbound			Gunning River Road Northbound			Oak Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	74	3	77	1	78	79	0	0	0	156
07:15 AM	69	2	71	0	71	71	0	0	0	142
07:30 AM	73	5	78	1	86	87	0	0	0	165
07:45 AM	66	4	70	2	87	89	3	1	4	163
Total	282	14	296	4	322	326	3	1	4	626
08:00 AM	105	3	108	2	87	89	3	0	3	200
08:15 AM	76	1	77	1	77	78	3	1	4	159
08:30 AM	94	2	96	0	73	73	0	0	0	169
08:45 AM	69	7	76	0	57	57	1	3	4	137
Total	344	13	357	3	294	297	7	4	11	665
09:00 AM	88	3	91	0	78	78	3	0	3	172
09:15 AM	105	2	107	2	136	138	6	1	7	252
09:30 AM	100	6	106	2	130	132	3	0	3	241
09:45 AM	95	4	99	4	114	118	2	1	3	220
Total	388	15	403	8	458	466	14	2	16	885
Grand Total	1014	42	1056	15	1074	1089	24	7	31	2176
Apprch %	96.0	4.0		1.4	98.6		77.4	22.6		
Total %	46.6	1.9	48.5	0.7	49.4	50.0	1.1	0.3	1.4	

	Gunning River Road Southbound			Gunning River Road Northbound			Oak Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 09:45 AM - Peak 1 of 1										
Intersection	09:00 AM									
Volume	388	15	403	8	458	466	14	2	16	885
Percent	96.3	3.7		1.7	98.3		87.5	12.5		
09:15 Volume	105	2	107	2	136	138	6	1	7	252
Peak Factor										0.878
High Int.	09:15 AM			09:15 AM			09:15 AM			
Volume	105	2	107	2	136	138	6	1	7	
Peak Factor			0.942			0.844			0.571	

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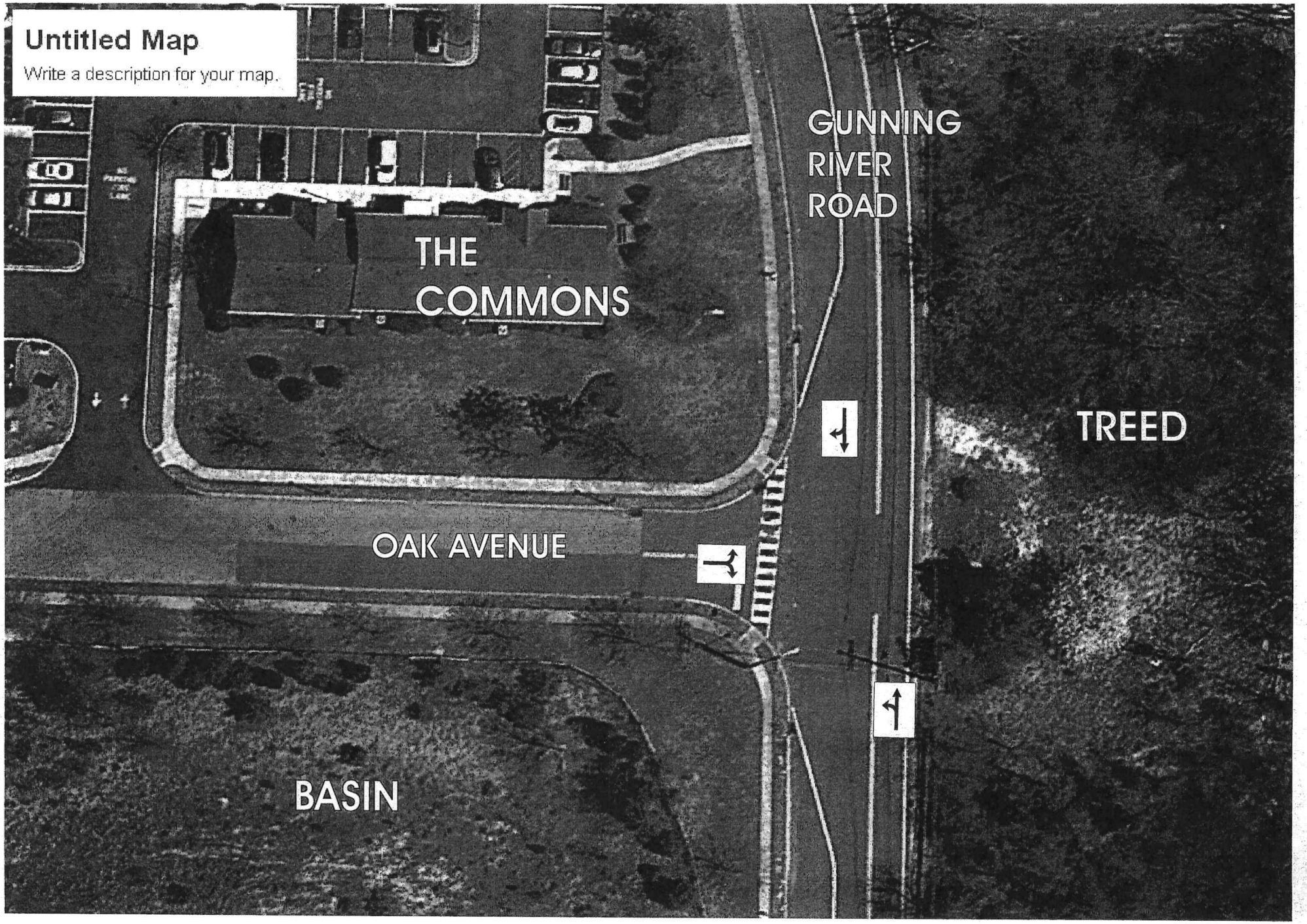
RESIDENCE CLUB @ BARNEGAT
GUNNING RIVER ROAD & OAK AVENUE
BARNEGAT TOWNSHIP, OCEAN COUNTY
MRA JOB 24-102 WEDNESDAY PM COUNT

File Name : 24102 gunning river & oak pm1
Site Code : 00024102
Start Date : 1/31/2024
Page No : 1

Groups Printed- CARS - TRUCKS - SCHOOL BUS

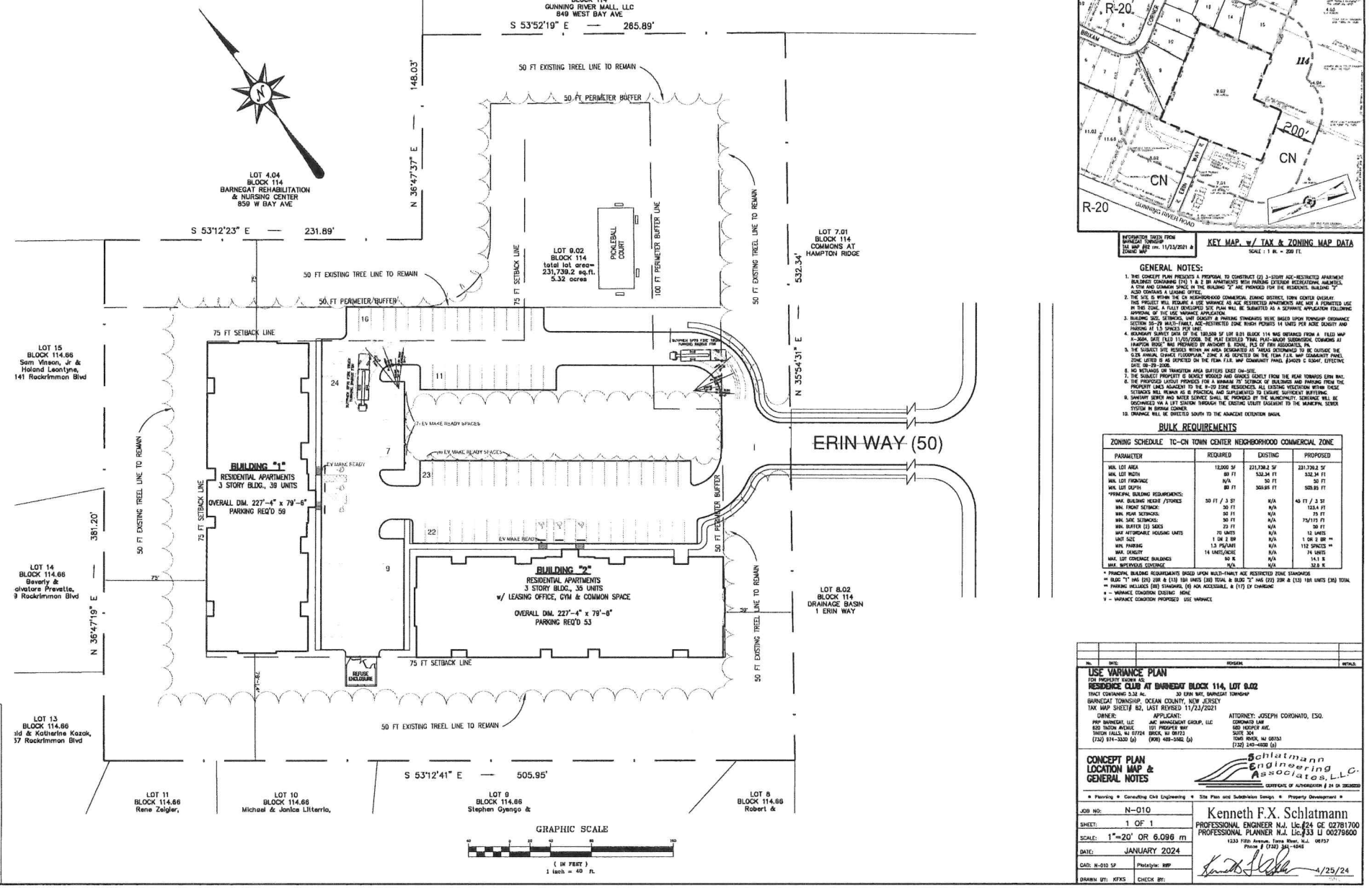
	Gunning River Road Southbound			Gunning River Road Northbound			Oak Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
03:00 PM	129	1	130	1	105	106	3	1	4	240
03:15 PM	146	3	149	0	133	133	4	0	4	286
03:30 PM	111	4	115	0	120	120	9	1	10	245
03:45 PM	113	4	117	2	96	98	5	2	7	222
Total	499	12	511	3	454	457	21	4	25	993
04:00 PM	130	1	131	0	107	107	6	0	6	244
04:15 PM	113	2	115	0	136	136	5	0	5	256
04:30 PM	131	1	132	0	122	122	6	0	6	260
04:45 PM	116	0	116	2	94	96	1	1	2	214
Total	490	4	494	2	459	461	18	1	19	974
05:00 PM	156	0	156	0	136	136	2	1	3	295
05:15 PM	150	0	150	0	120	120	4	1	5	275
05:30 PM	138	1	139	0	146	146	0	0	0	285
05:45 PM	127	0	127	0	132	132	0	0	0	259
Total	571	1	572	0	534	534	6	2	8	1114
Grand Total	1560	17	1577	5	1447	1452	45	7	52	3081
Apprch %	98.9	1.1		0.3	99.7		86.5	13.5		
Total %	50.6	0.6	51.2	0.2	47.0	47.1	1.5	0.2	1.7	

	Gunning River Road Southbound			Gunning River Road Northbound			Oak Avenue Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour From 03:00 PM to 05:45 PM - Peak 1 of 1										
Intersection	05:00 PM									
Volume	571	1	572	0	534	534	6	2	8	1114
Percent	99.8	0.2		0.0	100.0		75.0	25.0		
05:00 Volume	156	0	156	0	136	136	2	1	3	295
Peak Factor										0.944
High Int.	05:00 PM			05:30 PM			05:15 PM			
Volume	156	0	156	0	146	146	4	1	5	
Peak Factor			0.917			0.914			0.400	



MRA JOB 24-102 GUNNING RIVER ROAD & OAK AVENUE
BARNEGAT TOWNSHIP, OCEAN COUNTY

RESIDENCE CLUB AT BARNEGAT



INFORMATION TAKEN FROM BARNEGAT TOWNSHIP TAX MAP REVISED 11/23/2021 & ZONING MAP

KEY MAP, w/ TAX & ZONING MAP DATA
SCALE : 1 IN. = 200 FT.

GENERAL NOTES:

1. THIS CONCEPT PLAN PRESENTS A PROPOSAL TO CONSTRUCT (2) 3-STORY AGE-RESTRICTED APARTMENT BUILDINGS CONTAINING (74) 1 & 2 BR APARTMENTS WITH PARKING EXTERIOR RECREATIONAL AMENITIES. A GYM AND COMMON SPACE IN THE BUILDING "2" ARE PROVIDED FOR THE RESIDENTS. BUILDING "2" ALSO CONTAINS A LEASING OFFICE.
2. THE SITE IS WITHIN THE CN NEIGHBORHOOD COMMERCIAL ZONING DISTRICT, ERIN CENTER OVERLAY. THIS PROJECT WILL REQUIRE A USE VARIANCE AS AGE RESTRICTED APARTMENTS ARE NOT A PERMITTED USE IN THIS ZONE. A FULLY DEVELOPED SITE PLAN WILL BE SUBMITTED AS A SEPARATE APPLICATION FOLLOWING APPROVAL OF THE USE VARIANCE APPLICATION.
3. BUILDING SIZE, SETBACKS, UNIT DENSITY & PARKING STANDARDS WERE BASED UPON TOWNSHIP ORDINANCE SECTION 55-78 MULTI-FAMILY, AGE-RESTRICTED ZONE WHICH PERMITS 14 UNITS PER ACRE DENSITY AND PARKING AT 1.5 SPACES PER UNIT.
4. BOUNDARY SURVEY DATA OF THE 180,589 SF LOT 8.01 BLOCK 114 WAS OBTAINED FROM A FILED MAP #-3684, DATE FILED 11/01/2006. THE PLAT ENTITLED "FINAL PLAT-MAJOR SUBDIVISION, COMMONS AT HAMPTON RIDGE" WAS PREPARED BY ANTHONY B. KOWAL, PLS OF ERH ASSOCIATES, PA.
5. THE SUBJECT SITE RESIDES WITHIN AN AREA DESIGNATED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN." ZONE X AS DEPICTED ON THE FEMA F.I.R. MAP COMMUNITY PANEL ZONE LISTED IS AS DEPICTED ON THE FEMA F.I.R. MAP COMMUNITY PANEL #34029 C 0304F, EFFECTIVE DATE 08-29-2008.
6. NO WETLANDS OR TRANSITION AREA BUFFERS EXIST ON-SITE.
7. THE SUBJECT PROPERTY IS GENTLY WOODED AND SLOPES GENTLY FROM THE REAR TOWARDS ERIN WAY.
8. THE PROPOSED LAYOUT PROVIDES FOR A MINIMUM 75' SETBACK OF BUILDINGS AND PARKING FROM THE PROPERTY LINES ADJACENT TO THE R-20 ZONE RESIDENCES. ALL EXISTING VEGETATION WITHIN THESE SETBACKS WILL REMAIN AS IS PRACTICAL AND SUPPLEMENTED TO ENSURE SUFFICIENT BUFFERING.
9. SANITARY SEWER AND WATER SERVICE SHALL BE PROVIDED BY THE MUNICIPALITY. SEWERAGE WILL BE DISCHARGED VIA A LIFT STATION THROUGH THE EXISTING UTILITY EASEMENT TO THE MUNICIPAL SEWER SYSTEM IN ERINAY CORNER.
10. DRAINAGE WILL BE DIRECTED SOUTH TO THE ADJACENT DETENTION BASIN.

BULK REQUIREMENTS

ZONING SCHEDULE TC-CN TOWN CENTER NEIGHBORHOOD COMMERCIAL ZONE

PARAMETER	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	12,000 SF	231,739.2 SF	231,739.2 SF
MIN. LOT WIDTH	80 FT	532.34 FT	532.34 FT
MIN. LOT FRONTAGE	N/A	50 FT	50 FT
MIN. LOT DEPTH	80 FT	503.95 FT	503.95 FT
*PRINCIPAL BUILDING REQUIREMENTS:			
MAX. BUILDING HEIGHT / STORIES	50 FT / 3 ST	N/A	45 FT / 3 ST
MIN. FRONT SETBACK:	30 FT	N/A	123.4 FT
MIN. REAR SETBACKS:	50 FT	N/A	75 FT
MIN. SIDE SETBACKS:	30 FT	N/A	75'/115 FT
MIN. BUFFER (3) SIDES	25 FT	N/A	50 FT
MAX AFFORDABLE HOUSING UNITS	70 UNITS	N/A	52 UNITS
UNIT SIZE	1 OR 2 BR	N/A	1 OR 2 BR **
MIN. PARKING	1.5 PS/UNIT	N/A	112 SPACES **
MAX. DENSITY	14 UNITS/ACRE	N/A	74 UNITS
MAX. LOT COVERAGE BUILDINGS	50 %	N/A	14.1 %
MAX IMPERVIOUS COVERAGE	N/A	N/A	32.8 %

* PRINCIPAL BUILDING REQUIREMENTS BASED UPON MULTI-FAMILY AGE RESTRICTED ZONE STANDARDS
** BLDG "1" HAS (26) 2BR & (13) 1BR UNITS (39) TOTAL & BLDG "2" HAS (22) 2BR & (13) 1BR UNITS (35) TOTAL
** PARKING INCLUDES (88) STANDARD, (6) ADA ACCESSIBLE, & (17) EV CHARGING
a – VARIANCE CONDITION EXISTING NONE
v – VARIANCE CONDITION PROPOSED USE VARIANCE

No.	DATE:	REVISION	INITIALS

USE VARIANCE PLAN
FOR PROPERTY KNOWN AS:
RESIDENCE CLUB AT BARNEGAT BLOCK 114, LOT 8.02
TRACT CONTAINING 5.32 Ac. — 30 ERIN WAY, BARNEGAT TOWNSHIP
BARNEGAT TOWNSHIP, OCEAN COUNTY, NEW JERSEY
TAX MAP SHEET# 82, LAST REVISED 11/23/2021

OWNER:
PRP BARNEGAT, LLC
820 TATON AVENUE
TATON FALLS, NJ 07724
(732) 974-3330 (p)

APPLICANT:
JMC MANAGEMENT GROUP, LLC
101 PROSPER WAY
BRICK, NJ 08723
(908) 489-5982 (p)

ATTORNEY: JOSEPH CORONATO, ESQ.
CORONATO LAW
600 HOOPER AVE.
SUITE 304
TOMS RIVER, NJ 08753
(732) 240-4600 (p)

CONCEPT PLAN
LOCATION MAP &
GENERAL NOTES

Schlatmann Engineering Associates, L.L.C.
CERTIFICATE OF AUTHORIZATION # 24 GA 28036200
• Planning • Consulting Civil Engineering • Site Plan and Subdivision Design • Property Development •

JOB NO:	N-010
SHEET:	1 OF 1
SCALE:	1"=20' OR 6.096 m
DATE:	JANUARY 2024
CAD: N-010 SP	Plotstyle: NAP
DRAWN BY: KFXS	CHECK BY:

Kenneth F.X. Schlatmann
PROFESSIONAL ENGINEER N.J. Lic.#24 GE 02781700
PROFESSIONAL PLANNER N.J. Lic.#33 LI 00279600
1233 Fifth Avenue, Toms River, N.J. 08757
Phone # (732) 341-4848

1/25/24

ONESHOT OF DOCUMENTS

LEVEL OF SERVICE CRITERIA
FOR
TWO-WAY STOP-CONTROLLED INTERSECTIONS[1]

Level of Service	Average Control Delay
A	$\leq$ 10.0 Seconds Per Vehicle
B	> 10.0 and $\leq$ 15.0 Seconds Per Vehicle
C	> 15.0 and $\leq$ 25.0 Seconds Per Vehicle
D	> 25.0 and $\leq$ 35.0 Seconds Per Vehicle
E	> 35.0 and $\leq$ 50.0 Seconds Per Vehicle
F	> 50.0 Seconds Per Vehicle

[1] Transportation Research Board, Highway Capacity Manual 2022, National Research Council, Washington, DC, 2022.

HCS Two-Way Stop-Control Report

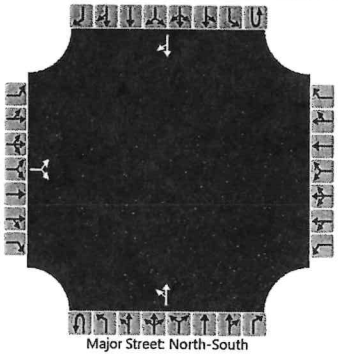
General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	2/15/2024
Analysis Year	2024
Time Analyzed	AM
Intersection Orientation	North-South
Project Description	24-102AE EXIST

Site Information

Intersection	GUNNING rIVER & OAK
Jurisdiction	
East/West Street	OAK AV
North/South Street	GUNNING RIVER
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		14		2						8	458				388	15
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			18							9						
Capacity, c (veh/h)			298							1107						
v/c Ratio			0.06							0.01						
95% Queue Length, Q_{95} (veh)			0.2							0.0						
Control Delay (s/veh)			17.8							8.3	0.1					
Level of Service (LOS)			C							A	A					
Approach Delay (s/veh)		17.8								0.2						
Approach LOS		C								A						

HCS Two-Way Stop-Control Report

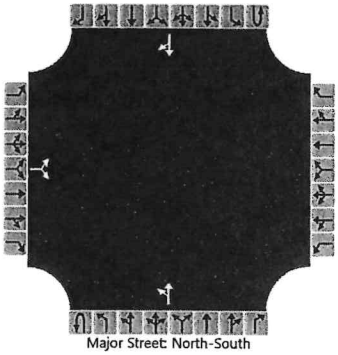
General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	2/15/2024
Analysis Year	2024
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	24-102PE EXIST

Site Information

Intersection	GUNNING rIVER & OAK
Jurisdiction	
East/West Street	OAK AV
North/South Street	GUNNING RIVER
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		6		2						0	534				571	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							0						
Capacity, c (veh/h)			229							943						
v/c Ratio			0.04							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			21.3							8.8	0.0					
Level of Service (LOS)			C							A	A					
Approach Delay (s/veh)		21.3								0.0						
Approach LOS		C								A						

HCS Two-Way Stop-Control Report

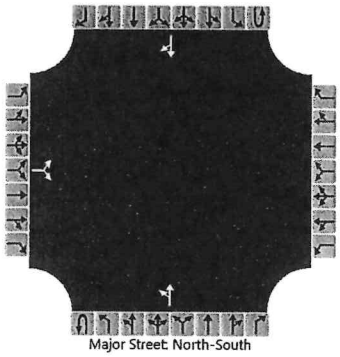
General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	2/15/2024
Analysis Year	2024
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	24-102PE EXIST

Site Information

Intersection	GUNNING rIVER & OAK
Jurisdiction	
East/West Street	OAK AV
North/South Street	GUNNING RIVER
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		6		2						0	534				571	1
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							0						
Capacity, c (veh/h)			246							965						
v/c Ratio			0.03							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			20.2							8.7	0.0					
Level of Service (LOS)			C							A	A					
Approach Delay (s/veh)		20.2								0.0						
Approach LOS		C								A						

HCS Two-Way Stop-Control Report

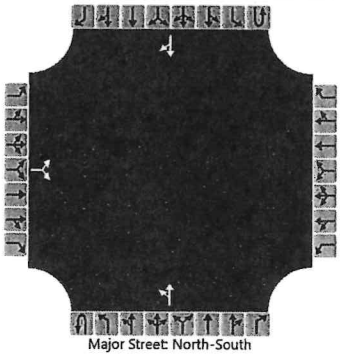
General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	2/15/2024
Analysis Year	2034
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	24-102PFB BUILD

Site Information

Intersection	GUNNING rIVER & OAK
Jurisdiction	
East/West Street	OAK AV
North/South Street	GUNNING RIVER
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		14		5						4	588				630	11
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			20							4						
Capacity, c (veh/h)			207							906						
v/c Ratio			0.10							0.00						
95% Queue Length, Q_{95} (veh)			0.3							0.0						
Control Delay (s/veh)			24.3							9.0	0.1					
Level of Service (LOS)			C							A	A					
Approach Delay (s/veh)		24.3								0.1						
Approach LOS		C								A						