



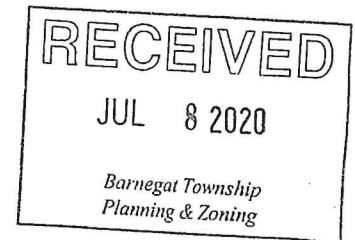
**McDonough & Rea Associates, Inc.**

*Traffic and Transportation Consulting*

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

June 28, 2017

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



Re: Traffic Study  
Barnegat Crossing II  
Lot 24.09 in Block 92.111  
Barnegat Township, Ocean County  
MRA File No. 16-262

Dear Board Members:

McDonough & Rea Associates (MRA) has been asked to provide the Barnegat Township Planning Board with a *Traffic Impact Analysis* for *Barnegat Crossing II*, a residential project consisting of 148 one and two bedroom age restricted apartments to be located on the west side of Lighthouse Drive just south of the signalized intersection of Lighthouse Drive at the southbound Garden State Parkway ramp to Exit 67 (Bay Avenue). *Figure 1* in the *Appendix* illustrates the approximate location of *Barnegat Crossing II*.

Plans prepared by Professional Design Services LLC (PDS) show construction of 2 residential buildings and a 4,000 SF club house building to be serviced by 3 driveways to Lighthouse Drive. The property has approximately 1,400 feet of frontage along the west side of Lighthouse Drive.

**SCOPE OF STUDY**

In order to prepare a thorough *Traffic Impact Analysis* for *Barnegat Crossing II*, 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 following intersections:
  - Lighthouse Drive at Bay Avenue
  - Lighthouse Drive at southbound Garden State Parkway Ramp

**FILE COPY**

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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Barnegat Township Planning Board

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June 28, 2017

3. Prepared trip generation estimates for the age-restricted apartments based upon Institute of Transportation Engineers (ITE) data.
4. Prepared estimates of future traffic demand in the area for the 2027 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 3 site driveways to Lighthouse Drive.
6. Reviewed the *Site Plan* 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 *Barnegat Crossing II*.

**EXISTING CONDITIONS/TRAFFIC VOLUMES**

The subject property is located along the west side of Lighthouse Drive just south of the signalized intersection at Lighthouse Drive and the Garden State Parkway southbound off ramp to Exit 67 (Bay Avenue). The property has approximately 1,400 feet of frontage on the west side of Lighthouse Drive. Lighthouse Drive is a collector roadway in this area which extends from Bay Avenue to the north into the *Ocean Acres* residential area to the south. Lighthouse Drive has signalized intersections at the southbound Garden State Parkway ramps and at Bay Avenue.

Traffic volume counts were conducted by MRA, most recently in May of 2017 (after Memorial Day). *Figure 2* in the *Appendix* illustrates existing AM peak street hour and PM peak street hour traffic flow in the area.

**TRIP GENERATION AND DISTRIBUTION**

Estimates of traffic to be generated by the 148 age restricted units were made after consulting the 9<sup>th</sup> Edition of the ITE *Trip Generation Manual*. *Table I* illustrates the anticipated peak hour traffic generation from the 148 units.

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**TABLE I**  
**TRIP GENERATION**  
**148 AGE-RESTRICTED APARTMENTS**

	<b>IN</b>	<b>OUT</b>	<b>TOTAL</b>
AM Peak Street Hour	10	20	30
PM Peak Street Hour	20	17	37

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, Bay Avenue, Route 9, etc., traffic was distributed as follows:

- To and from the south on Lighthouse Drive: 20 percent
- To and from the Garden State Parkway South: 20 percent
- To and from the Garden State Parkway North: 25 percent
- To and from Bay Avenue east: 25 percent
- To and from Bay Avenue west: 10 percent

Site generated and distributed traffic volumes are shown on *Figure 3* in the *Appendix*.

**ANALYSIS OF FUTURE TRAFFIC**

A design year of 2027, 10 years in the future was selected for analysis in accordance with Ocean County Planning Board protocol. Design year 2027 *no-build* traffic volumes were developed after consulting the New Jersey Department of Transportation's (NJDOT) *Historical Background Growth Rate* data for the area. In addition to the NJDOT *Background Traffic Growth Rate*, traffic to be generated by the mixed-use *Barnegat Crossing* development currently under construction north of this property was directly added to year 2027 traffic volumes. Further, traffic to be generated by an age-restricted detached single family home community on the east side of Lighthouse Drive, opposite this property, was added (250 dwelling units).



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June 28, 2017

Site generated and distributed traffic volumes from *Barnegat Crossing II* were then surcharged onto 2027 *no-build* volumes and are shown on *Figure 4* in the *Appendix* entitled *2027 Future Post-Development Traffic Volumes*.

Traffic engineers calculate levels of service of unsignalized and signalized 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 or 80 seconds per vehicle at a signalized 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 and signalized 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 2010*, using the *McTrans Highway Capacity Software (HCS)*, release 7.2.

***LIGHTHOUSE DRIVE AT GARDEN STATE PARKWAY SOUTHBOUND RAMPS***

At the signalized intersection of Lighthouse Drive and the southbound Garden State Parkway ramps, findings were that this intersection will operate at an acceptable level of service “C” for both the AM peak street hour and PM peak street hour for the 2027 *build* condition. Therefore, this signalized intersection will operate well within accepted traffic engineering parameters.

***UNSIGNALIZED ACCESS POINTS FROM BARNEGAT CROSSING II TO LIGHTHOUSE DRIVE***

Exiting movements from the community to Lighthouse Drive were analyzed using the unsignalized capacity analysis procedure. Findings were that all exiting movements to Lighthouse Drive for both the AM and PM peak street hours will operate at level of service “C” or better from the site driveways to Lighthouse Drive. Therefore, the site driveways will operate well within accepted traffic engineering parameters.

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



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**SITE PLAN AND PARKING**

The *Site Plan*, prepared by PDS, shows 3 points of access to Lighthouse Drive and parking fields containing a total of 316 parking spaces. The 316 parking spaces represent an overall ratio of 2 parking spaces per residential unit for the 1 and 2 bedroom apartments and are in excess of RSIS requirements. The size of the parking aisles and parking stalls are in accordance with RSIS and full circulation is provided throughout the community. In addition, the plans detail a 20 foot wide emergency access road along the westerly side of the proposed buildings.

**CONCLUSIONS**

It is concluded, based on the analysis set forth in this report, that plans to construct *Barnegat Crossing II*, a 148 unit age-restricted apartment complex on Lighthouse Drive can be approved and operate compatibly with future traffic conditions in the area. The site driveways to Lighthouse Drive will operate well within accepted traffic engineering parameters as will the off-site signalized intersection of Lighthouse Drive at the Garden State Parkway southbound ramps.

The *Site 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 and is in conformance with proper traffic engineering principals.

A representative from MRA will be in attendance at an upcoming Barnegat Township Planning 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

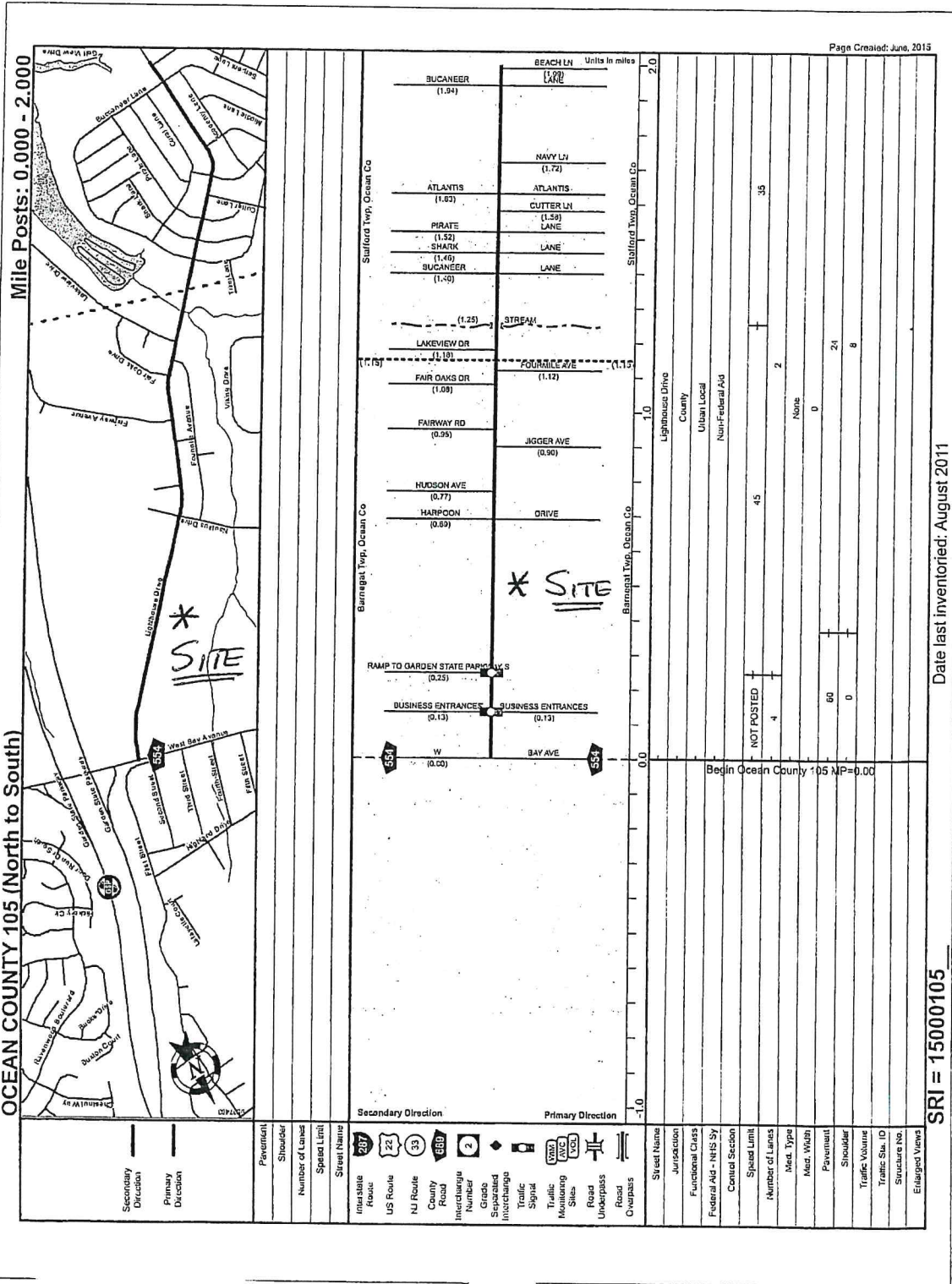
Scott T. Kennel  
Sr. Associate

cc: Ian Borden  
Vito Cardinale  
Sal Alfieri, Esq

# APPENDIX



SUBJECT: BARNEGAT CROSSING II: LOT 24.09 in BL 92.111 - BARNEGAT TWP, OCEAN CO.  
SITE LOCATION MAP





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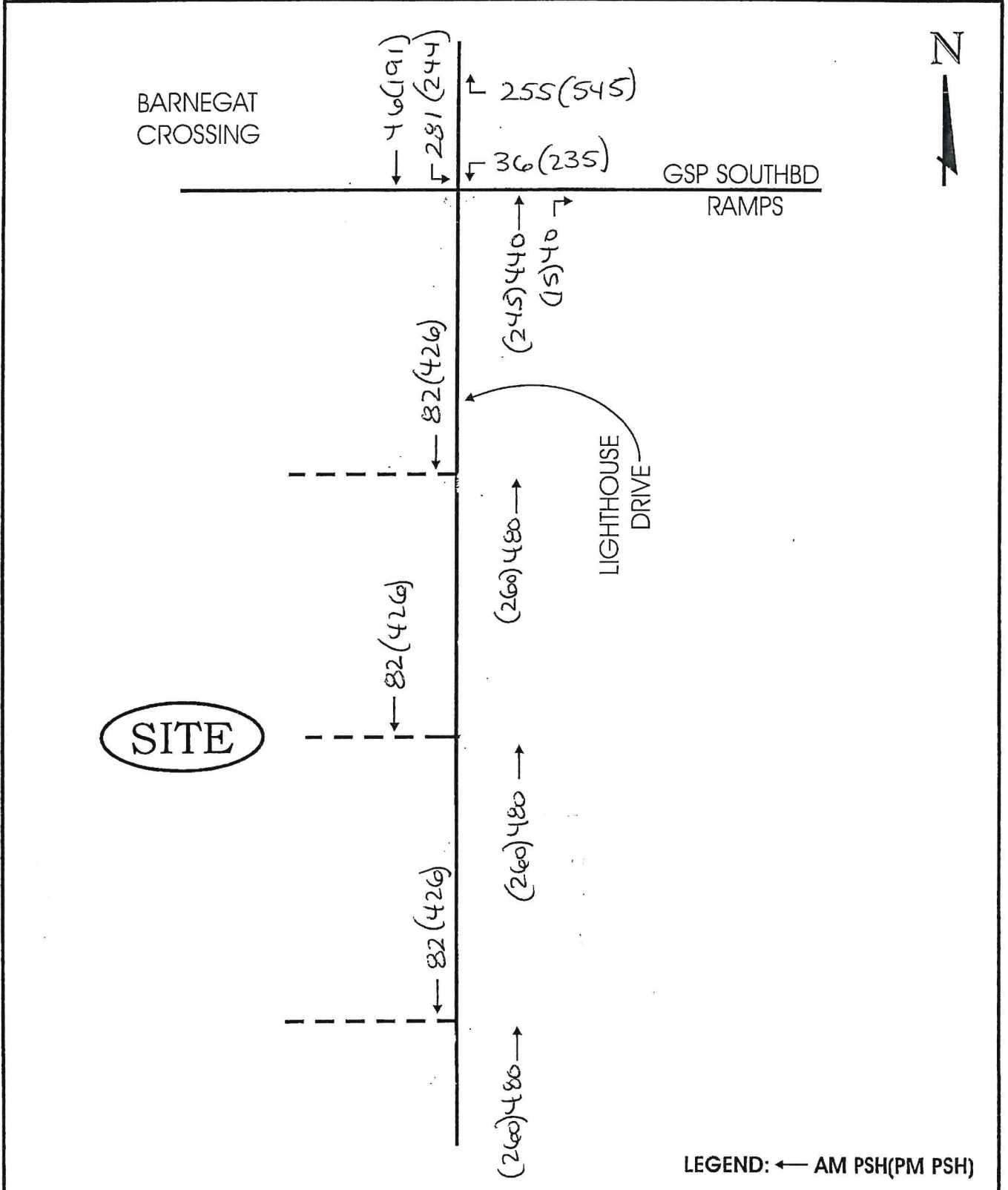
TRAFFIC AND TRANSPORTATION CONSULTING

FIGURE 2

JOB NO.  
16-262

DATE:  
JUNE 2017

SUBJECT: BARNEGAT CROSSING II: LOT 24.09 in BL 92.111 - BARNEGAT TWP., OCEAN CO.  
2017 EXISTING TRAFFIC VOLUMES







McDONOUGH & REA ASSOCIATES

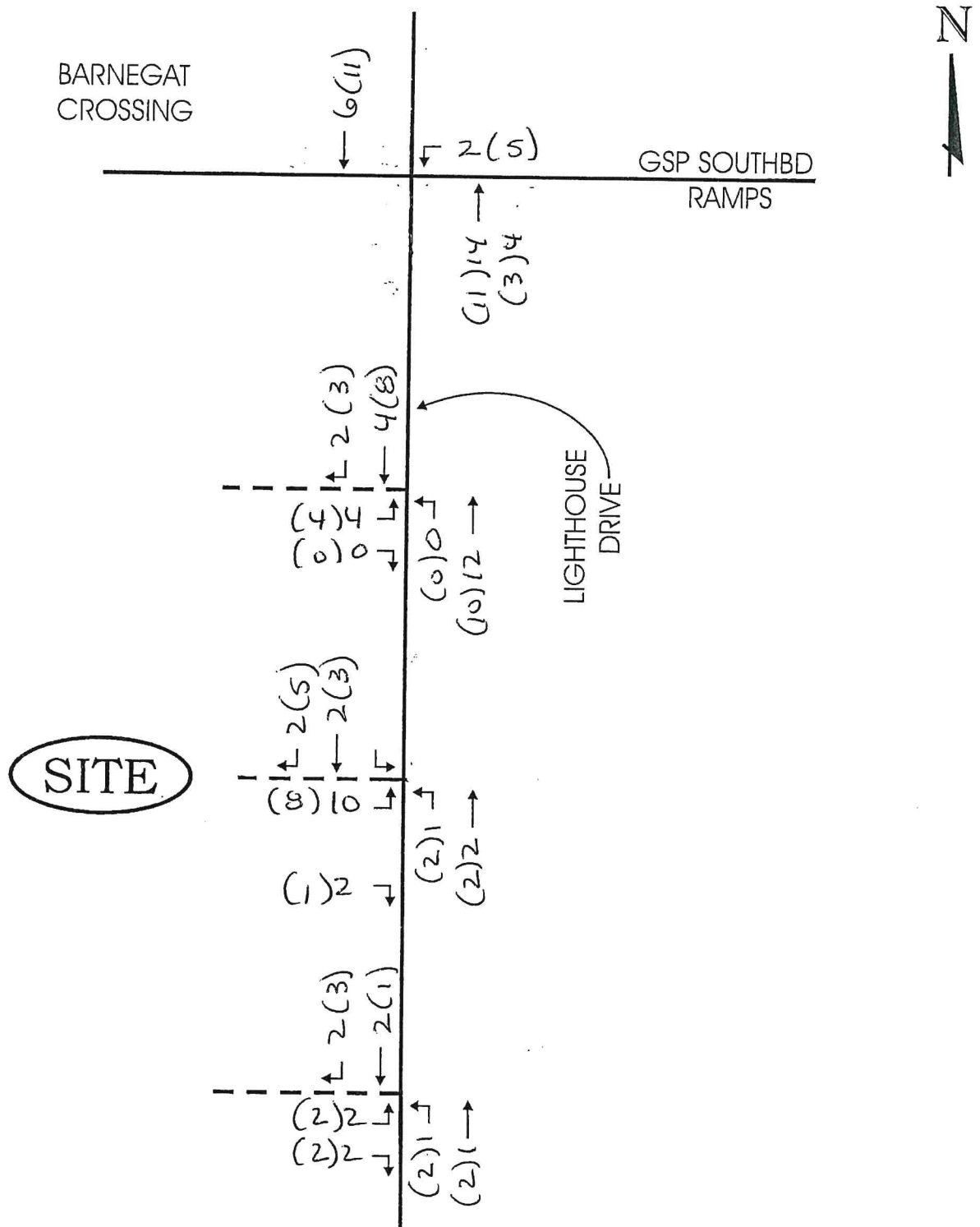
TRAFFIC AND TRANSPORTATION CONSULTING

FIGURE 3

JOB NO.  
16-262

DATE:  
JUNE 2017

SUBJECT: BARNEGAT CROSSING II: LOT 24.09 in BL 92.111 - BARNEGAT TWP., OCEAN CO.  
SITE GENERATED TRAFFIC VOLUMES



LEGEND: ← AM PSH(PM PSH)



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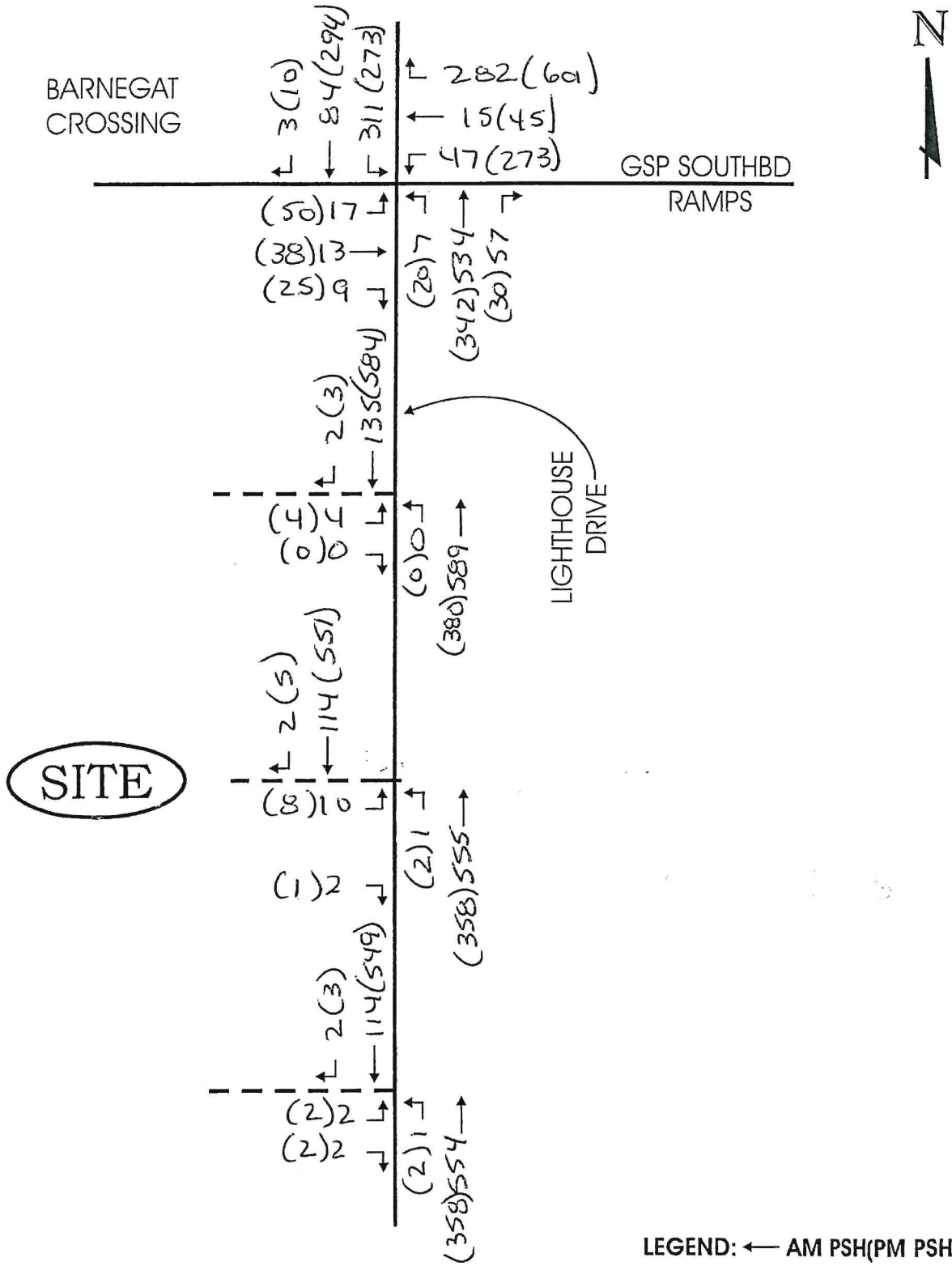
TRAFFIC AND TRANSPORTATION CONSULTING

FIGURE 4

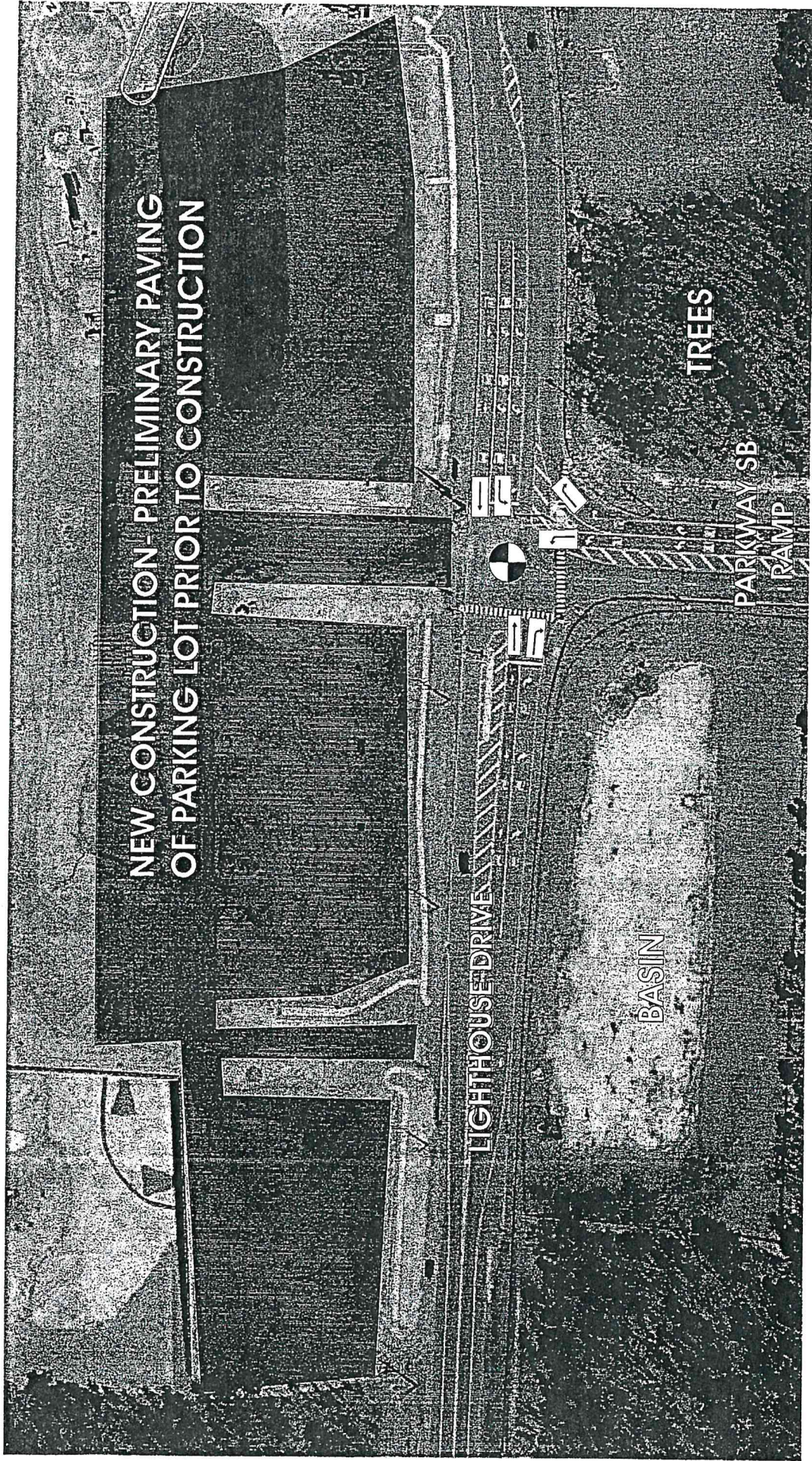
JOB NO.  
16-262

DATE:  
JUNE 2017

BARNEGAT CROSSING II: LOT 24.09 in BL 92.111 - BARNEGAT TWP., OCEAN CO.  
SUBJECT: 2027 FUTURE POST - DEVELOPMENT TRAFFIC VOLUMES



LEGEND: ← AM PSH(PM PSH)



MRA JOB 16-262 LIGHTHOUSE DRIVE & PARKWAY SB RAMP  
BARNEGAT TOWNSHIP, OCEAN COUNTY

McDonough & Rea Associates  
 1431 Lakewood Road Suite C  
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BARNEGAT CROSSING II  
 LIGHTHOUSE DRIVE & PARKWAY SB RAMP  
 BARNEGAT TOWNSHIP, OCEAN COUNTY  
 MRA JOB 16-262 THURSDAY PM COUNT

File Name : 16262 lighthouse & parkway pm1  
 Site Code : 00016262  
 Start Date : 2/2/2017  
 Page No : 1

Groups Printed- CARS - TRUCKS - SCHOOL BUS

Start Time	Lighthouse Drive Southbound			Parkway SB Ramp Westbound			Lighthouse Drive Northbound		
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total
03:00 PM	56	40	96	33	74	107	46	2	48
03:15 PM	50	33	83	29	80	109	38	3	41
03:30 PM	62	43	105	34	105	139	53	8	61
03:45 PM	60	50	110	28	96	124	52	1	53
Total	228	166	394	124	355	479	189	14	203
04:00 PM	59	37	96	40	132	172	55	1	56
04:15 PM	69	44	113	59	138	197	63	3	66
04:30 PM	56	43	99	40	123	163	58	1	59
04:45 PM	44	44	88	49	140	189	58	2	60
Total	228	168	396	188	533	721	234	7	241
05:00 PM	52	42	94	64	118	182	51	4	55
05:15 PM	48	48	96	60	150	210	46	1	47
05:30 PM	44	43	87	50	142	192	52	4	56
05:45 PM	42	31	73	35	113	148	49	1	50
Total	186	164	350	209	523	732	198	10	208
Grand Total	642	498	1140	521	1411	1932	621	31	652
Approch %	56.3	43.7	30.6	27.0	73.0	51.9	95.2	4.8	17.5
Total %	17.2	13.4		14.0	37.9		16.7	0.8	

Start Time	Lighthouse Drive Southbound			Parkway SB Ramp Westbound			Lighthouse Drive Northbound		
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total
04:15 PM	221	173	394	212	519	731	230	10	240
Volume	56.1	43.9	113	29.0	71.0	197	95.8	4.2	66
Percent	69	44		59	138		63	3	
Peak Factor	0.415	0.415	0.872	0.415	0.415	0.928	0.415	0.415	0.908
High Int. Volume	69	44	113	59	138	197	63	3	66
Peak Factor	0.415	0.415	0.872	0.415	0.415	0.928	0.415	0.415	0.908



McDonough & Rea Associates  
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 (732) 528-7076

File Name : 16262 lighthouse & bay pm1  
 Site Code : 00016262  
 Start Date : 5/31/2017  
 Page No : 1

BARNEGAT CROSSING II  
 LIGHTHOUSE DR & W. BAY AVE/1ST ST  
 BARNEGAT TOWNSHIP, OCEAN COUNTY  
 MRA JOB 16-262 WEDNESDAY PM COUNT

Start Time	First Street Southbound			West Bay Avenue Westbound			Lighthouse Drive Northbound			West Bay Avenue Eastbound			Int. Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total			
04:00 PM	8	1	1	86	200	12	13	0	135	148	1	151	25	177	633
04:15 PM	8	6	1	80	179	10	10	3	143	156	0	130	14	144	584
04:30 PM	5	0	1	98	172	11	16	0	149	165	0	141	19	160	612
04:45 PM	9	1	2	89	193	17	30	2	158	190	0	124	12	136	637
Total	30	8	5	353	744	50	69	5	585	659	1	546	70	617	2466
05:00 PM	9	5	0	97	222	27	16	2	166	184	0	135	9	144	688
05:15 PM	9	1	0	92	208	14	13	1	172	186	1	156	13	170	680
05:30 PM	5	3	0	73	187	21	11	2	161	174	0	134	10	144	607
05:45 PM	12	1	2	65	179	15	13	1	154	168	1	132	10	143	585
Total	35	10	2	327	796	77	53	6	653	712	2	557	42	601	2560
Grand Total	65	18	7	680	1540	127	122	11	1238	1371	3	1103	112	1218	5026
Approch %	72.2	20.0	7.8	29.0	65.6	5.4	8.9	0.8	90.3	9.2	0.2	90.6	9.2	2.2	
Total %	1.3	0.4	0.1	13.5	30.6	2.5	2.4	0.2	24.6	27.3	0.1	21.9	2.2	24.2	

Start Time	First Street Southbound			West Bay Avenue Westbound			Lighthouse Drive Northbound			West Bay Avenue Eastbound			Int. Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total	App. Total			
04:00 PM	32	7	3	376	795	69	75	5	645	725	1	556	53	610	2617
04:15 PM	76.2	16.7	7.1	30.3	64.1	5.6	10.3	0.7	89.0	184	0.2	91.1	8.7	144	688
04:30 PM	9	5	0	97	222	27	16	2	166	184	0	135	9	144	688
05:00 PM	9	5	0	97	222	27	30	2	158	190	1	156	13	170	0.951
Total	9	5	0	97	222	27	30	2	158	190	1	156	13	170	0.951
Peak Factor				0.896	0.896		0.954		0.954			0.897		0.897	

BARNEGAT CROSSING II  
 LIGHTHOUSE DR & W. BAY AVE/1ST ST  
 BARNEGAT TOWNSHIP, OCEAN COUNTY  
 MIRA JOB 16-262 WEDNESDAY AM COUNT

McDonough & Rea Associates  
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 Manasquan NJ 08736  
 (732) 528-7076

File Name : 16262 lighthouse & bay am1  
 Site Code : 00016262  
 Start Date : 5/31/2017  
 Page No : 1

Groups Printed- CARS - TRUCKS - SCHOOL BUS

Start Time	First Street Southbound			West Bay Avenue Westbound			Lighthouse Drive Northbound			West Bay Avenue Eastbound			Int. Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
07:00 AM	10	1	0	74	81	4	7	0	164	171	1	207	14	222	563
07:15 AM	13	0	0	92	79	4	8	0	175	168	0	170	13	183	539
07:30 AM	14	6	1	93	71	4	11	1	141	153	0	161	19	180	522
07:45 AM	10	2	1	57	78	3	15	0	111	126	0	155	12	167	444
Total	47	9	2	316	309	15	41	1	576	618	1	693	58	752	2068
08:00 AM	12	0	4	99	112	6	10	2	123	135	0	131	25	156	524
08:15 AM	17	4	0	90	76	5	14	2	108	124	0	172	14	186	502
08:30 AM	17	4	1	83	103	1	15	1	101	117	0	169	25	194	520
08:45 AM	11	1	2	60	125	5	9	0	87	96	0	142	15	157	457
Total	57	9	7	332	416	17	48	5	419	472	0	614	79	693	2003
Grand Total	104	18	9	648	725	32	89	6	995	1090	1	1307	137	1445	4071
Approach %	79.4	13.7	6.9	46.1	51.6	2.3	8.2	0.6	91.3	26.8	0.1	90.4	9.5	35.5	
Total %	2.6	0.4	0.2	15.9	17.8	0.8	2.2	0.1	24.4		0.0	32.1	3.4		

Start Time	First Street Southbound			West Bay Avenue Westbound			Lighthouse Drive Northbound			West Bay Avenue Eastbound			Int. Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
07:00 AM	47	9	2	316	309	15	41	1	576	618	1	693	58	752	2068
07:15 AM	49.4	74	4	49.4	48.3	2.3	7	0	93.2	171	0.1	92.2	7.7	222	563
07:30 AM	14	6	1	92	78	3	15	0	111	126	0	155	12	167	444
07:45 AM	10	2	1	57	78	3	15	0	111	126	0	155	12	167	444
Total	14	6	1	92	79	4	7	0	164	171	1	207	14	222	0.918
High Int. Volume	14	6	1	92	79	4	7	0	164	171	1	207	14	222	0.918
Peak Factor										0.904				0.847	





**BARNEGAT CROSSING II  
LIGHTHOUSE DRIVE & WEST BAY AVENUE  
BARNEGAT TOWNSHIP, OCEAN COUNTY  
MIRA JOB 16-262 THURSDAY PM COUNT**

McDonough & Rea Associates  
1431 Lakewood Road Suite C  
Manasquan NJ 08736  
(732) 528-7076

File Name : 16262 w bay & lighthouse pm1  
Site Code : 00016262  
Start Date : 1/5/2017  
Page No : 1

**Groups Printed- CARS - TRUCKS - SCHOOL BUS**

Start Time	1st Street Southbound			West Bay Avenue Westbound			Lighthouse Drive Northbound			West Bay Avenue Eastbound			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
03:00 PM	8	0	1	101	180	10	18	3	86	107	1	16	114	521
03:15 PM	8	2	1	77	182	11	10	1	95	106	0	123	138	525
03:30 PM	2	3	0	99	192	7	19	2	119	140	1	115	130	573
03:45 PM	16	4	0	105	207	11	20	2	106	128	1	158	176	647
<b>Total</b>	<b>34</b>	<b>9</b>	<b>2</b>	<b>382</b>	<b>761</b>	<b>39</b>	<b>67</b>	<b>8</b>	<b>406</b>	<b>481</b>	<b>3</b>	<b>493</b>	<b>558</b>	<b>2266</b>
04:00 PM	7	1	0	83	170	13	13	2	123	138	1	129	140	552
04:15 PM	11	1	0	88	190	10	23	2	147	172	1	109	132	604
04:30 PM	5	1	2	100	184	11	13	3	160	176	2	129	138	617
04:45 PM	3	3	0	75	186	10	13	2	155	170	0	141	153	600
<b>Total</b>	<b>26</b>	<b>6</b>	<b>2</b>	<b>346</b>	<b>730</b>	<b>44</b>	<b>62</b>	<b>9</b>	<b>585</b>	<b>656</b>	<b>4</b>	<b>508</b>	<b>563</b>	<b>2373</b>
05:00 PM	14	2	1	103	188	15	19	1	149	169	0	123	129	621
05:15 PM	7	5	0	77	199	11	16	0	162	178	1	122	131	608
05:30 PM	15	4	0	68	191	8	13	0	146	159	1	125	139	584
05:45 PM	10	3	0	65	164	18	9	0	162	171	0	125	136	567
<b>Total</b>	<b>46</b>	<b>14</b>	<b>1</b>	<b>313</b>	<b>742</b>	<b>52</b>	<b>57</b>	<b>1</b>	<b>619</b>	<b>677</b>	<b>2</b>	<b>495</b>	<b>535</b>	<b>2380</b>
<b>Grand Total</b>	<b>106</b>	<b>29</b>	<b>5</b>	<b>1041</b>	<b>2233</b>	<b>135</b>	<b>186</b>	<b>18</b>	<b>1610</b>	<b>1814</b>	<b>9</b>	<b>1496</b>	<b>1656</b>	<b>7019</b>
<b>Approch %</b>	<b>75.7</b>	<b>20.7</b>	<b>3.6</b>	<b>30.5</b>	<b>65.5</b>	<b>4.0</b>	<b>10.3</b>	<b>1.0</b>	<b>88.8</b>	<b>25.8</b>	<b>0.5</b>	<b>90.3</b>	<b>9.1</b>	
<b>Total %</b>	<b>1.5</b>	<b>0.4</b>	<b>0.1</b>	<b>14.8</b>	<b>31.8</b>	<b>1.9</b>	<b>2.6</b>	<b>0.3</b>	<b>22.9</b>	<b>25.8</b>	<b>0.1</b>	<b>21.3</b>	<b>2.2</b>	<b>23.6</b>

Start Time	1st Street Southbound			West Bay Avenue Westbound			Lighthouse Drive Northbound			West Bay Avenue Eastbound			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
04:30 PM	29	11	3	355	757	47	61	6	626	693	3	515	551	2446
Volume	29	11	3	355	757	47	61	6	626	693	3	515	551	2446
Percent	67.4	25.6	7.0	30.6	65.3	4.1	8.8	0.9	90.3	25.8	0.5	93.5	6.0	
Peak Factor	14	2	1	103	188	15	19	1	149	169	0	123	6	129
High Int. 05:00 PM	14	2	1	103	188	15	19	1	149	169	0	123	6	129
Volume	14	2	1	103	188	15	19	1	149	169	0	123	6	129
Peak Factor	14	2	1	103	188	15	19	1	149	169	0	123	6	129
High Int. 04:45 PM	14	2	1	103	188	15	19	1	149	169	0	123	6	129
Volume	14	2	1	103	188	15	19	1	149	169	0	123	6	129
Peak Factor	14	2	1	103	188	15	19	1	149	169	0	123	6	129



ITE Land Use: Size of Development:	252, Senior Adult Housing - Attached 148 Dwelling Units			BARN. XING II 9th		Equation	Trips	Split
	Average Rate	Studies	Avg. Size	R <sup>2</sup>	Trips			
Weekday Daily	3.44	5	46	0.81	509.1	T = 2.980	x+ 21.050	50
AM Peak Street Hour	0.20	10	138	0.98	29.6	T = 0.200	x- 10.130	50
PM Peak Street Hour	0.25	10	138	0.96	37.0	T = 0.240	x+ 1.640	34
AM Peak Hour of Generator	0.39	8	80	0.70	57.7	Ln(T) = 0.840	Ln(x) - 0.300	54
PM Peak Hour of Generator	0.35	7	75	0.82	51.8	Ln(T) = 0.990	Ln(x) - 1.110	46
Saturday Daily	2.61	5	46	0.67	386.3	T = 2.120	x+ 22.300	55
Saturday Peak Hour of Generator	0.31	6	63	0.97	45.9	T = 0.310	x+ 0.460	50
Sunday Daily	2.84	5	46	0.75	420.3	T = 2.290	x+ 25.070	57
Sunday Peak Hour of Generator	0.41	5	46	0.63	60.7	T = 0.480	x- 2.760	43
								50
								N/A

AM PSH  
 IN 10  
 OUT 20  
 TOTAL 30

PM PSH  
 IN 20  
 OUT 17  
 TOTAL 37



McDONOUGH & REA ASSOCIATES

TRAFFIC AND TRANSPORTATION CONSULTING

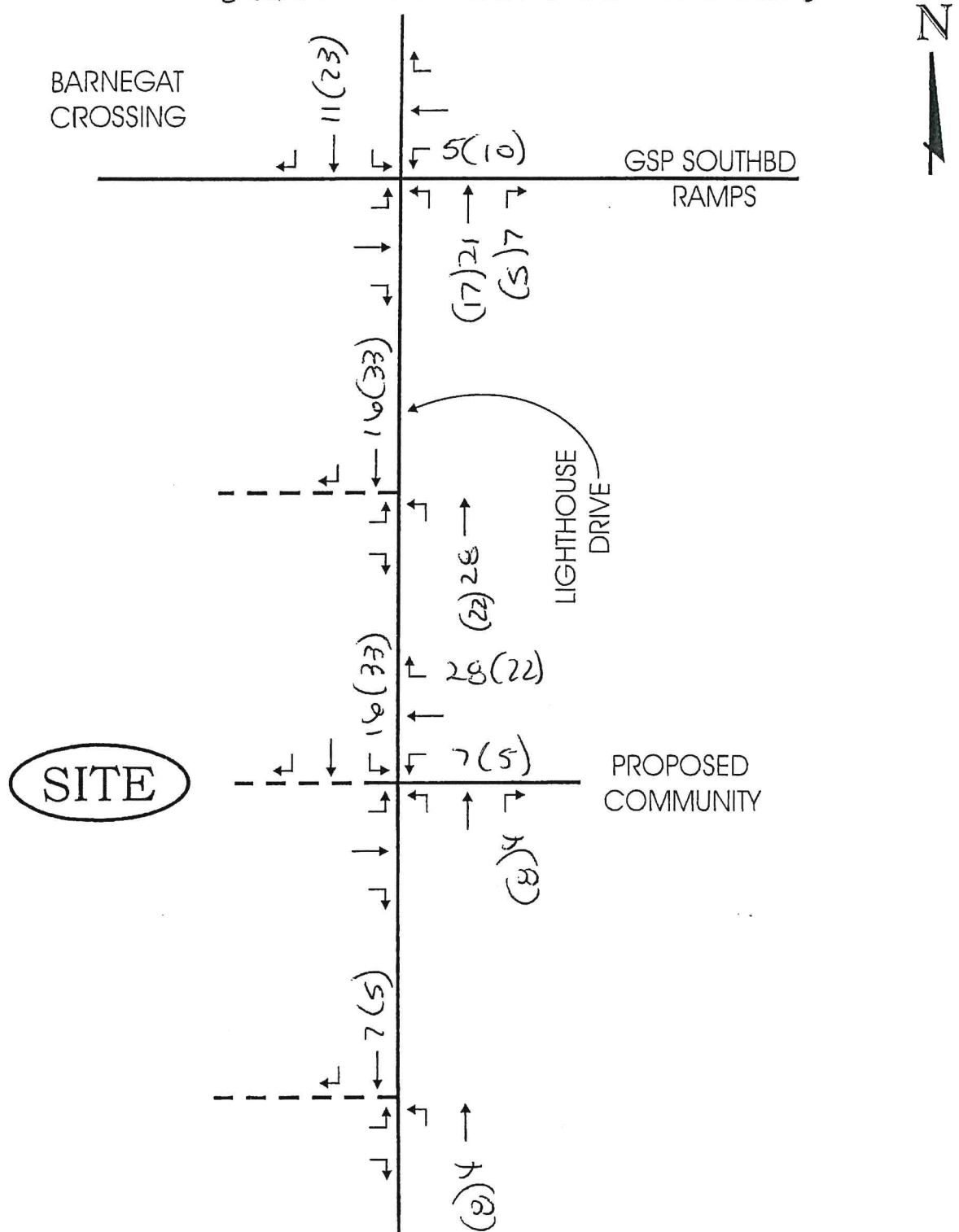
FIGURE 3

JOB NO.  
16-262

DATE:  
JUNE 2017

BARNEGAT CROSSING II: LOT 24.09 in BL 92.111 - BARNEGAT TWP., OCEAN CO.  
SUBJECT: SITE GENERATED TRAFFIC VOLUMES

LENNAR 250 AGE REST. DWELLINGS



ITE Land Use: Size of Development:	251, Senior Adult Housing - Detached 250 Dwelling Units		LENNAX - EAST 9th		Equation	Trips	Split
	Average Rate	Studies	Avg. Size	R <sup>2</sup>			
Weekday Daily	3.68	8	780	0.96	$\ln(T) = 0.890 \ln(x) + 2.060$	1068.6	50
AM Peak Street Hour	0.22	23	607	0.93	T = 0.170	72.5	35
PM Peak Street Hour	0.27	24	605	0.89	$\ln(T) = 0.750 \ln(x) + 0.350$	89.2	61
AM Peak Hour of Generator	0.29	16	427	0.95	T = 0.250	82.2	43
PM Peak Hour of Generator	0.34	16	427	0.89	T = 0.250	102.8	56
Saturday Daily	2.73	3	798	NG	Not Given	N/A	50
Saturday Peak Hour of Generator	0.23	3	1547	NG	Not Given	N/A	48
Sunday Daily	2.32	3	798	NG	Not Given	N/A	50
Sunday Peak Hour of Generator	0.21	2	1171	NG	Not Given	N/A	51

AM PSH                     
 IN OUT TOTAL  
 20 35 55

PM PSH                     
 IN OUT TOTAL  
 41 27 68



McDONOUGH & REA ASSOCIATES

TRAFFIC AND TRANSPORTATION CONSULTING

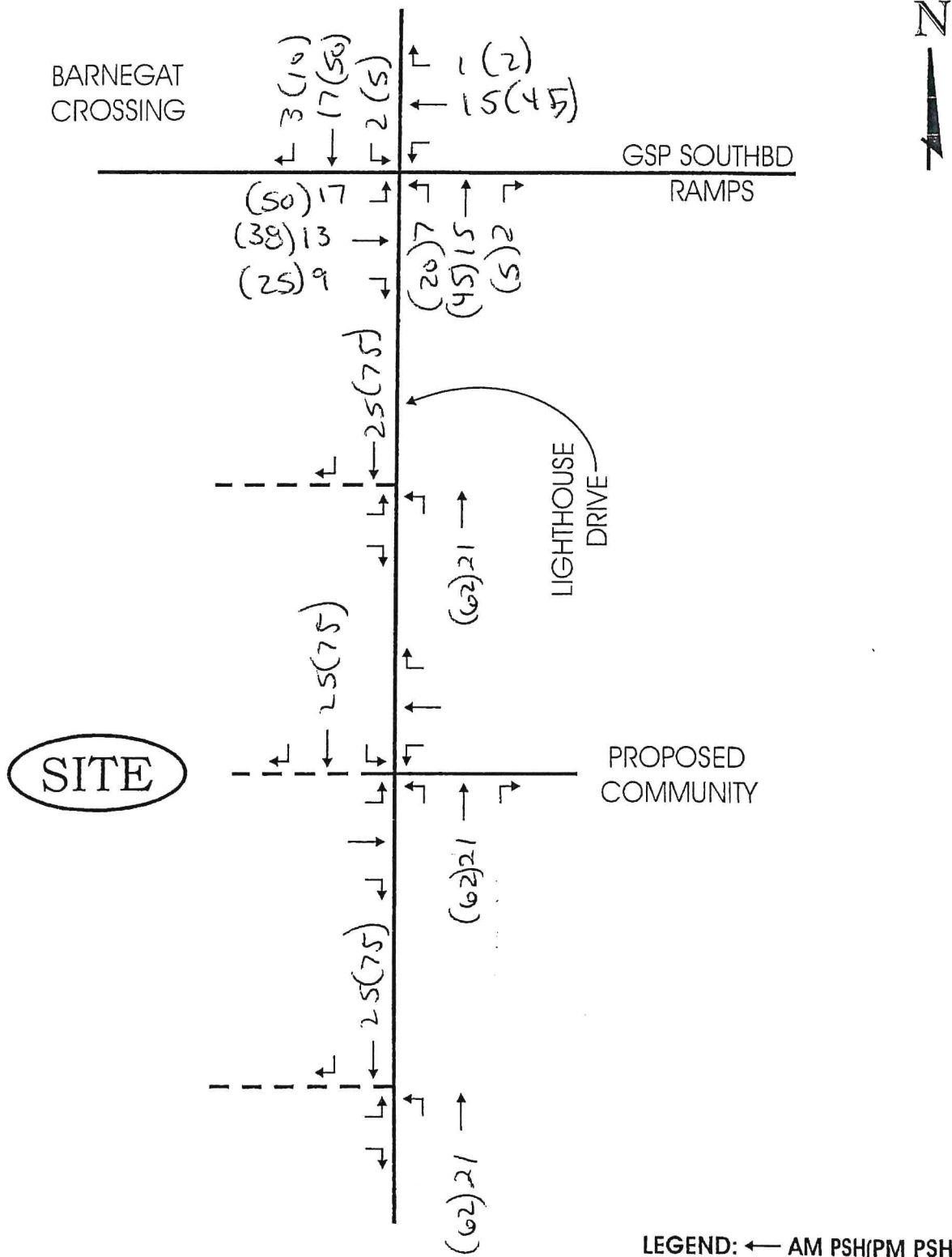
FIGURE 3

JOB NO.  
16-262

DATE:  
JUNE 2017

SUBJECT: BARNEGAT CROSSING II: LOT 24.09 in BL 92.111 - BARNEGAT TWP., OCEAN CO.  
SITE GENERATED TRAFFIC VOLUMES

BARNEGAT CROSSING I



ITE Land Use: 820, Shopping Center		BARN KING I		9th Double check bolded items							
Size of Development:		107,400 SF									
Time Period	Average Rate	Studies	Avg. Size	R <sup>2</sup>	Trips	Ln(T)=	Equation	Trips	Split		
Weekday Daily	42.70	302	331	0.79	4586.0	Ln(x)+ 5.830		7113.6	50	50	
AM Peak Street Hour	0.96	104	310	0.56	103.1	Ln(x)+ 2.240		162.8	62	38	
PM Peak Street Hour	3.71	426	376	0.81	398.5	Ln(x)+ 3.310		628.5	48	52	
AM Peak Hour of Generator		Not Given			N/A	Not Given		N/A	N/A	N/A	
PM Peak Hour of Generator		Not Given			N/A	Not Given		N/A	N/A	N/A	
Saturday Daily	49.97	123	450	0.82	5366.8	Ln(x)+ 6.230		9664.7	50	50	
Saturday Peak Hour of Generator	4.82	128	458	0.83	517.7	Ln(x)+ 3.780		915.8	52	48	
Sunday Daily	25.24	77	439	0.52	2710.8	T= 15.630	(x)+ 4214.460	5893.1	50	50	
Sunday Peak Hour of Generator	3.12	39	369	NG	335.1	Not Given		N/A	49	51	
PM Pass-By Percentage						Ln(T)=	Ln(x)+ 5.001	38.1			
Saturday Pass-By Percentage	3.76	24	459	0.68	403.8	T= -0.024	(x)+ 38.591	36.0			
Christmas Season PM PSH	5.88	10	526	0.77	631.5	T= 2.760	(x)+ 457.280	753.7	50	50	
Christmas Season Sat PHG						T= 4.900	(x)+ 515.880	1042.1	51	49	

Time Period	151 Dwelling Units				R <sup>2</sup>	Trips	Equation		Trips	Split
	Average Rate	Studies	Avg. Size	9th			T=	x+		
ITE Land Use: 252, Senior Adult Housing - Attached				BARN KING #						
Size of Development:				9th						
Weekday Daily	3.44	5	46	0.81	519.4	T=	x+ 21.050	471.0	50	
AM Peak Street Hour	0.20	10	138	0.98	30.2	T=	x- 0.130	30.1	34	
PM Peak Street Hour	0.25	10	138	0.96	37.8	T=	x+ 1.640	37.9	54	
AM Peak Hour of Generator	0.39	8	80	0.70	58.9	Ln(T)=	Ln(x)- 0.300	50.1	46	
PM Peak Hour of Generator	0.35	7	75	0.82	52.9	Ln(T)=	Ln(x)- 1.110	47.3	55	
Saturday Daily	2.61	5	46	0.67	394.1	T=	x+ 22.300	342.4	50	
Saturday Peak Hour of Generator	0.31	6	63	0.97	46.8	T=	x+ 0.460	47.3	57	
Sunday Daily	2.84	5	46	0.75	428.8	T=	x+ 25.070	370.9	50	
Sunday Peak Hour of Generator	0.41	5	46	0.63	61.9	T=	x- 2.760	69.7	N/A	



**LEVEL OF SERVICE  
FOR  
SIGNALIZED INTERSECTIONS<sup>1</sup>**

<u>Level of Service</u>	<u>Description</u>	<u>Control (Signal) Delay Per Vehicle (Seconds)</u>
A	Very short delay, good progression; most vehicles do not stop at intersection.	$\leq 10.0$
B	Generally good progression and/or short cycle length; more vehicles stop at intersection than at Level of Service "A."	$> 10.0$ and $\leq 20.0$
C	Fair progression and/or longer cycle length; significant number of vehicles stop at intersection, though many still pass through without stopping.	$> 20.0$ and $\leq 35.0$
D	Congestion becomes noticeable; longer delays from unfavorable progression, long cycle lengths, or high volume/capacity ratios; many vehicles stop at intersection.	$> 35.0$ and $\leq 55.0$
E	Considered to be the <u>limit of acceptable delay</u> ; indicative of poor progression, long cycle lengths, or high volume/capacity ratios; frequent individual cycles failures.	$> 55.0$ and $\leq 80.0$
F	Often an indication of over-saturation (i.e., arrival flow exceeds capacity); also caused by poor progression and long cycles lengths; capacity is not necessarily exceeded under this level of service.	$> 80.0$

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<sup>1</sup> Transportation Research Board, Highway Capacity Manual 2010, National Research Council, Washington, DC, 2010.

HCS+: Signalized Intersections Release 5.4

Analyst: Inter.: MRA  
 Agency: Area Type: All other areas  
 Date: 6/28/2017 Jurisd:  
 Period: PM Year : 2027 NO-BUILD  
 Project ID: 16-262PNB-4  
 E/W St: GSP SB RAMPS-BARN XING N/S St: LIGHTHOUSE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	1	1	0	1	1	1	2	1	0
LGConfig	L	TR		L	T		L	T	R	L	TR	
Volume	50	38	25	268	45		20	331	27	273	283	10
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
RTOR Vol			0						0			0

Duration	0.25	Area Type:	All other areas									
Signal Operations												
Phase Combination	1	2	3	4	5	6	7	8				
EB Left			A		NB Left		A					
Thru			A		Thru		A					
Right			A		Right		P					
Peds					Peds							
WB Left		A	A		SB Left	A						
Thru		A	A		Thru	A	A					
Right					Right	A	A					
Peds					Peds							
NB Right					EB Right							
SB Right					WB Right							
Green		15.0	18.0			16.0	30.0					
Yellow		3.0	4.0			4.0	4.0					
All Red		0.0	2.0			2.0	2.0					

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
L	243	1351	0.22	0.18	35.5	D		
TR	315	1752	0.22	0.18	35.3	D	35.4	D
Westbound								
L	542	1770	0.54	0.39	23.4	C		
T	671	1863	0.07	0.36	21.1	C	23.1	C
Northbound								
L	317	1056	0.07	0.30	25.1	C		
T	559	1863	0.64	0.30	32.9	C	32.0	C
R	475	1583	0.06	0.30	25.2	C		
Southbound								
L	550	3437	0.54	0.16	39.7	D		
TR	964	1853	0.33	0.52	14.1	B	26.4	C

Intersection Delay = 27.9 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.4

Analyst: Inter.: MRA  
 Agency: Area Type: All other areas  
 Date: 6/28/2017 Jurisd:  
 Period: PM Year : 2027 BUILD  
 Project ID: 16-262PFB-4  
 E/W St: GSP SB RAMPS-BARN XING N/S St: LIGHTHOUSE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	1	1	0	1	1	1	2	1	0
LGConfig	L	TR		L	T		L	T	R	L	TR	
Volume	50	38	25	273	45		20	342	30	273	294	10
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0	12.0	12.0	12.0	
RTOR Vol			0						0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		A			NB Left	A		
Thru		A			Thru	A		
Right		A			Right	P		
Peds					Peds			
WB Left	A	A			SB Left	A		
Thru	A	A			Thru	A	A	
Right					Right	A	A	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green		15.0	18.0			16.0	30.0	
Yellow		3.0	4.0			4.0	4.0	
All Red		0.0	2.0			2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/c	Delay	LOS	Delay	LOS
Eastbound								
L	243	1351	0.22	0.18	35.5	D		
TR	315	1752	0.22	0.18	35.3	D	35.4	D
Westbound								
L	542	1770	0.55	0.39	23.6	C		
T	671	1863	0.07	0.36	21.1	C	23.2	C
Northbound								
L	314	1045	0.07	0.30	25.1	C		
T	559	1863	0.67	0.30	33.6	C	32.5	C
R	475	1583	0.07	0.30	25.3	C		
Southbound								
L	550	3437	0.54	0.16	39.7	D		
TR	964	1853	0.34	0.52	14.2	B	26.3	C

Intersection Delay = 28.1 (sec/veh) Intersection LOS = C

**LEVEL OF SERVICE CRITERIA  
FOR  
TWO-WAY STOP-CONTROLLED INTERSECTIONS<sup>1</sup>**

<u>Level of Service</u>	<u>Average Control Delay</u>
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

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<sup>1</sup> Transportation Research Board, Highway Capacity Manual 2010, National Research Council, Washington, DC, 2010.

## HCS7 Two-Way Stop-Control Report

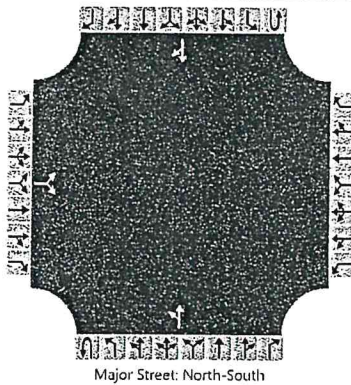
### General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	6/28/2017
Analysis Year	2027
Time Analyzed	AM
Intersection Orientation	North-South
Project Description	16-262AFB-1

### Site Information

Intersection	LIGHTHOUSE & SOUTH ACCESS
Jurisdiction	
East/West Street	SOUTH ACCESS
North/South Street	LIGHTHOUSE
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

### Lanes



### Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
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, V (veh/h)		02		02						01	0554				0114	02
Percent Heavy Vehicles (%)		1		1						1						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

### Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

### Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4									1				
Capacity, c (veh/h)			550									1466				
v/c Ratio			0.01									0.00				
95% Queue Length, Q <sub>95</sub> (veh)			0.0									0.0				
Control Delay (s/veh)			11.6									7.5				
Level of Service, LOS			B									A				
Approach Delay (s/veh)	11.6								0.0							
Approach LOS	B															

## HCS7 Two-Way Stop-Control Report

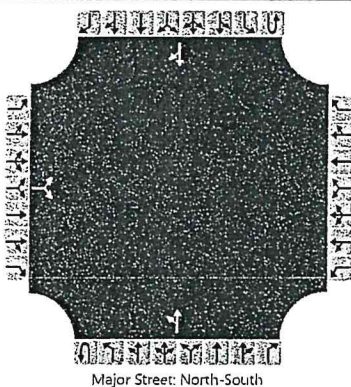
### General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	6/28/2017
Analysis Year	2027
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	16-262PFB-1

### Site Information

Intersection	LIGHTHOUSE & SOUTH ACCESS
Jurisdiction	
East/West Street	SOUTH ACCESS
North/South Street	LIGHTHOUSE
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

### Lanes



### Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
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, V (veh/h)		2		2						2	358				549	3
Percent Heavy Vehicles (%)		1		1						1						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

### Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

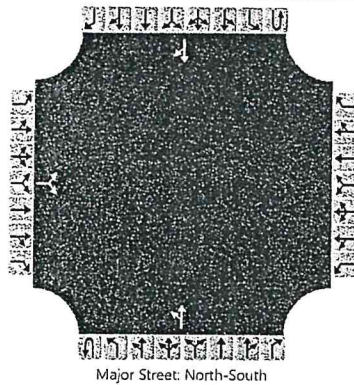
### Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4								2					
Capacity, c (veh/h)			354								982					
v/c Ratio			0.01								0.00					
95% Queue Length, Q <sub>95</sub> (veh)			0.0								0.0					
Control Delay (s/veh)			15.3								8.7					
Level of Service, LOS			C								A					
Approach Delay (s/veh)	15.3								0.1							
Approach LOS	C															

## HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK	Intersection	LIGHTHOUSE & NORTH ACCESS				
Agency/Co.	MRA	Jurisdiction					
Date Performed	6/28/2017	East/West Street	NORTH ACCESS				
Analysis Year	2027	North/South Street	LIGHTHOUSE				
Time Analyzed	AM	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	16-262AFB-3						

### Lanes



### Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
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	1	0		0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		4		0						0	589				107	2
Percent Heavy Vehicles (%)		1		1						1						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

### Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

### Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4								0					
Capacity, c (veh/h)			377								1476					
v/c Ratio			0.01								0.00					
95% Queue Length, Q <sub>95</sub> (veh)			0.0								0.0					
Control Delay (s/veh)			14.7								7.4					
Level of Service, LOS			B								A					
Approach Delay (s/veh)	14.7								0.0							
Approach LOS	B															

## HCS7 Two-Way Stop-Control Report

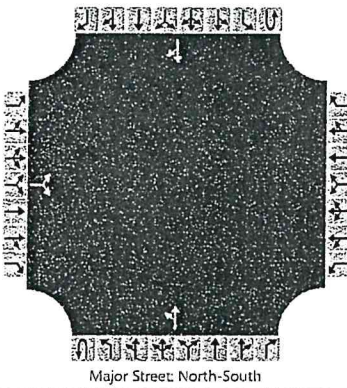
### General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	6/28/2017
Analysis Year	2027
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	16-262PFB-3

### Site Information

Intersection	LIGHTHOUSE & NORTH ACCESS
Jurisdiction	
East/West Street	NORTH ACCESS
North/South Street	LIGHTHOUSE
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

### Lanes



### Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
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	1	0		0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		4		0						0	380				584	3
Percent Heavy Vehicles (%)		1		1						1						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

### Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

### Delay, Queue Length, and Level of Service

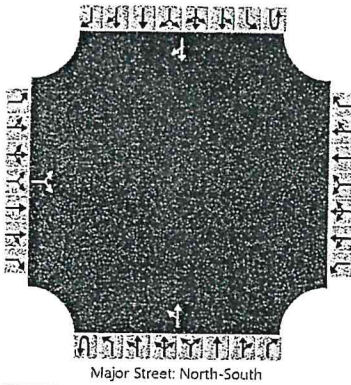
Flow Rate, v (veh/h)			4								0					
Capacity, c (veh/h)			253								950					
v/c Ratio			0.02								0.00					
95% Queue Length, Q <sub>95</sub> (veh)			0.0								0.0					
Control Delay (s/veh)			19.5								8.8					
Level of Service, LOS			C								A					
Approach Delay (s/veh)	19.5								0.0							
Approach LOS	C															



## HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	STK	Intersection	LIGHTH & CENTR ACC-KOKES
Agency/Co.	MRA	Jurisdiction	
Date Performed	6/28/2017	East/West Street	CENTRAL ACCESS-KOKES
Analysis Year	2027	North/South Street	LIGHTHOUSE
Time Analyzed	AM	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	16-262AFB-2		

### Lanes



### Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
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, V (veh/h)		10		2						1	555				114	2
Percent Heavy Vehicles (%)		1		1						1						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

### Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

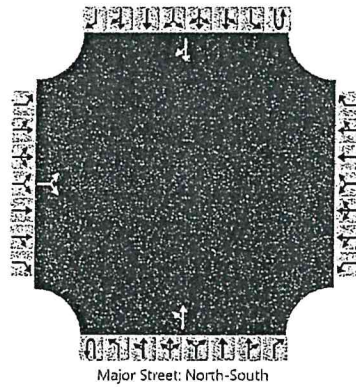
### Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			13								1					
Capacity, c (veh/h)			376								1466					
v/c Ratio			0.03								0.00					
95% Queue Length, Q <sub>95</sub> (veh)			0.1								0.0					
Control Delay (s/veh)			14.9								7.5					
Level of Service, LOS			B								A					
Approach Delay (s/veh)			14.9								0.0					
Approach LOS			B													

## HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK	Intersection	LIGHTH & CENTR ACCESS				
Agency/Co.	MRA	Jurisdiction					
Date Performed	6/28/2017	East/West Street	CENTRAL ACCESS				
Analysis Year	2027	North/South Street	LIGHTHOUSE				
Time Analyzed	PM	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	16-262PFB-2						

### Lanes



### Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
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, V (veh/h)		8		1						2	358				551	5
Percent Heavy Vehicles (%)		1		1						1						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

### Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

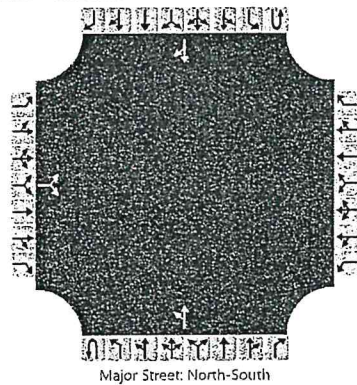
### Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			10							2						
Capacity, c (veh/h)			238							978						
v/c Ratio			0.04							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.1							0.0						
Control Delay (s/veh)			20.8							8.7						
Level of Service, LOS			C							A						
Approach Delay (s/veh)	20.8								0.1							
Approach LOS	C															

## HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	STK	Intersection	LIGHTH & CENTR ACCESS
Agency/Co.	MRA	Jurisdiction	
Date Performed	6/28/2017	East/West Street	CENTRAL ACCESS
Analysis Year	2027	North/South Street	LIGHTHOUSE
Time Analyzed	AM	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	16-262AFB-2		

### Lanes



### Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement									1U	1	2	3	4U	4	5	6	
Priority		10	11	12		7	8	9									
Number of Lanes		0	1	0		0	0	0		0	1	0		0	1	0	
Configuration			LR							LT						TR	
Volume, V (veh/h)		10		2						1	555				114	2	
Percent Heavy Vehicles (%)		1		1						1							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized		No					No					No					
Median Type/Storage		Undivided															

### Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

### Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			13							1						
Capacity, c (veh/h)			376							1466						
v/c Ratio			0.03							0.00						
95% Queue Length, Q <sub>95</sub> (veh)			0.1							0.0						
Control Delay (s/veh)			14.9							7.5						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		14.9										0.0				
Approach LOS		B														

