STONEFIELD
engineering & design

July 9, 2020

Borough of Rockaway
Land Use Board
1 East Main Street
Rockaway, New Jersey 07866

RE: Traffic Impact Letter Report
Proposed Senior Housing Building
West Main Street
Block 73, Lot 65
Borough of Rockaway, Morris County, New Jersey
SE&D Job No. S-18160

Dear Board Members:

Stonefield Engineering and Design, LLC ("Stonefield") has prepared this analysis to examine the potential traffic and parking impacts of the proposed senior housing development on the adjacent roadway network. The subject property is located along West Main Street between Mt. Pleasant Avenue and Nichols Drive in the Borough of Rockaway, Morris County, New Jersey. The subject property is designated as Block 73, Lot 65. The site has approximately 1,143 feet of frontage along West Main Street, and lengths of 90 feet and 335 feet of frontage along Mt. Pleasant Avenue. However, as part of the proposed subdivision, the senior housing portion of development would not have any access along the Mt. Pleasant Avenue frontage. The existing site is vacant and wooded with the exception of a single dwelling with access provided along Mt. Pleasant Avenue. Under the proposed development program, a 64-unit senior housing building is proposed on the lot which fronts along West Main Street. Access to the senior housing building is proposed via one (1) ingress-only driveway and one (1) full-movement driveway along West Main Street.

2018 Existing Condition

2018 Existing Roadway Conditions

The subject property is located along West Main Street between Mt. Pleasant Avenue and Nichols Drive in the Borough of Rockaway, Morris County, New Jersey. The site location is shown on appended **Figure 1**. The subject property is designated as Block 73, Lot 65. The site has approximately 1,143 feet of frontage along West Main Street, and lengths of 90 feet and 335 feet of frontage along Mt. Pleasant Avenue. However, as part of the proposed subdivision, the senior housing portion of development would not have any access along the Mt. Pleasant Avenue frontage. Across West Main Street from the proposed development is Donatoni Park and the Rockaway Borough Historical building. Other land uses in the site vicinity are commercial and residential uses.

West Main Street (County Route 513) is classified as an Urban Minor Arterial with a general north-south orientation and is under Morris County jurisdiction. Along the site frontage, the roadway provides one (1) lane of travel in each direction with on-street parking prohibited along both sides of the roadway and has a posted speed limit of 40 mph. It is noted that just north of the site the posted speed limit for West Main Street becomes 30 mph. Curbing is provided along both sides of the roadway and sidewalk is provided along the easterly side of the roadway. West Main Street connects U.S. Route 46 in the south to the East Main Street in the north.

West Main Street intersects the Donatoni Park driveway to form an unsignalized intersection, with the westbound approach of Donatoni Park operating under stop control.

2018 Existing Traffic Volumes

Traffic volume counts were collected during the typical weekday morning, weekday evening, and midday Saturday time periods to evaluate existing traffic conditions and identify the specific hours when traffic activity on the adjacent roadways is at a maximum and could be potentially impacted by the development of the site. Traffic volume counts were collected along West Main Street near the existing Donatoni Park Driveway.

Specifically, manual turning movement counts were conducted on the following dates:

- Thursday, September 6, 2018, from 7:00 a.m. to 9:00 a.m. and from 2:00 p.m. to 7:00 p.m.
- Saturday, September 8, 2018, from 11:00 a.m. to 2:00 p.m.

The study time periods have been chosen as they are representative of the combined peak periods of both the adjacent roadway network and the proposed development. The traffic volume data was collected and analyzed to identify the design peak hour in accordance with *Highway Capacity Manual* (HCM) and recommended guidelines outlined by the Institute of Transportation Engineers (ITE). Based on the review of the count data the weekday morning peak hour occurred from 7:15 a.m. to 8:15 a.m., the weekday evening peak hour occurred from 5:00 p.m. to 6:00 p.m., and the Saturday midday peak hour occurred from 11:30 a.m. to 12:30 p.m. The 2018 Existing weekday morning and evening peak hour volumes are summarized on appended **Figure 2.**

2022 No-Build Condition

Background Growth

The 2018 traffic volume data was grown to a future horizon year of 2022, which is a conservative estimate for when the proposed senior housing development project is expected to be fully constructed. In accordance with industry guidelines, the existing traffic volumes at the study intersections were increased by 1.00% annually for four (4) years. The 1.00% background growth rate was obtained from the NJDOT Background Growth Rate Table.

2022 No-Build Traffic Volumes

The background growth rate was applied to the 2018 Existing Traffic Volumes to calculate the 2022 No-Build Traffic Volumes for the weekday morning and evening peak hours. These volumes are summarized on appended **Figure 3.**

2022 Build Condition

The site-generated traffic volume of the proposed mixed-use development was estimated to identify the potential impacts of the project. For the purpose of this analysis, a complete project "build out" is assumed within two (2) years of the preparation of this study.

Trip Generation

Trip generation projections for the proposed mixed-use development were prepared utilizing the ITE Trip Generation Manual, 10th Edition. The appropriate Land Use 252 "Senior Adult Housing - Attached" for the 64-unit building was used for analysis purposes. **Table 1** provides the weekday morning and weekday evening peak hour trip generation volumes associated with the proposed development.

TABLE 1 – PROPOSED TRIP GENERATION

	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
Land Use	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
64- Residential Units Senior Adult Housing - Attached *ITE Land Use 252*	5	8	13	9	8	17	13	8	21

As indicated in **Table 1**, the proposed use is expected to generate less than 21 new trips during the peak hours of the site. Based on Transportation Impact Analysis for Site Development published by ITE, a trip increase of less than 100 vehicles trips would likely not change the level of service of the roadway system or appreciably increase the volume-to-capacity ratio of an intersection approach.

Trip Assignment/Distribution

The trips generated by the proposed development were distributed according to the existing travel pattern along the roadway network and the access management plan of the site. The "New" Site-Generated Traffic Volumes are illustrated on **Figure 4.**

2022 Build Traffic Volumes

The site-generated trips were added to the 2022 No-Build Traffic Volumes to calculate the 2022 Build Traffic Volumes and are shown on appended **Figure 5**.

2022 Build LOS/Capacity Analysis

Tables 2 and 3 detail the operations of the proposed site driveways during the peak hours studied. With the addition of site-generated traffic in the 2022 Build Condition, the proposed egress movements at the driveways are calculated to operate at an acceptable Level of Service C and the ingress movements are calculated to operate at a Level of Service A. Based on these findings, the proposed development is not expected to have a significant adverse impact on the traffic operations of the adjacent roadway network and the proposed driveways are anticipated to function adequately during the peak hours.

Comparative Level of Service (Delay) Tables

WEST MAIN STREET & SOUTHERLY SITE DRIVEWAY

EB (Eastbound) approach is the Proposed site driveway
NB (Northbound) and SB (Southbound) approaches are the West Main Street approaches
X (n) = Level of Service (seconds of delay)

TABLE 2 – 2022 BUILD CONDITION

Lane Group	Weekday Morning Peak Hour	Weekday Evening Peak Hour	Saturday Midday Peak Hour
NB Left/Through	A (8.9)	A (9.1)	A (8.8)
EB Left/Right	C (16.1)	C (17.8)	C (15.7)

WEST MAIN STREET & NORTHERLY SITE DRIVEWAY

NB (Southbound) approach is the West Main Street approach
X (n) = Level of Service (seconds of delay)

TABLE 3 – 2022 BUILD CONDITION

Lane Group	Weekday Morning Peak Hour	Weekday Evening Peak Hour	Saturday Midday Peak Hour
NB Left/Through	A (8.9)	A (9.1)	A (8.8)

Site Circulation/Parking Supply

A review was conducted of the proposed senior housing development using the Site Plan prepared by Dykstra Walker Design Group, dated June 6, 2020. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Access is proposed via one (1) full-movement driveway and one (1) ingress only driveway along West Main Street. The full-movement driveway provides a 30-foot minimum driveway width and the ingress-only driveway provides a minimum driveway width of 24 feet. Two loading spaces would be provided near the

entrance of the building. To the south of the ingress-only driveway a crosswalk would be provided to allow for pedestrian crossings between the proposed development and Donatoni Park.

The Rockaway Borough ordinance for parking refers to the New Jersey Site Improvement Standards which require 1.8 parking spaces per one (1) bedroom unit. For the proposed development with 64 one (1)-bedroom units, 115 parking spaces would be required. The proposed development would provide 78 parking spaces, inclusive of four (4) ADA-compliant parking spaces. The standard parking spaces would be 9 feet wide by 18 feet length which meets industry standards.

It should be noted that the parking characteristics of senior housing developments are different than those for multi-family residential buildings. Generally, there is a lower parking demand at senior housing developments than at multifamily residential developments. Based on data provided in ITE's Parking Manual, 5th Edition, for Land Use 252 "Senior Adult Housing - Attached," the 85th percentile vehicle parking demand is 0.67 spaces per unit. For the proposed development with 64 units, this equates to a peak parking demand of 43 spaces.

Although the parking characteristics of senior housing developments are different than those for multi-family residential developments, the two developments are similar and provide a good comparison. Based on data provided in ITE's Parking Manual, 5th Edition for Land Use 221 "Multifamily Housing (Mid-Rise)," the 85th percentile vehicle parking demand is 0.87 spaces per bedroom. For the proposed development with 64 bedrooms, this equates to a parking demand of 56 spaces. The proposed 78 parking spaces would be sufficient to accommodate the anticipated demand.

Conclusions

This report was prepared to examine the potential traffic impact of the proposed senior housing development. The analysis findings, which have been based on industry standard guidelines, indicate that the proposed development would not have a significant impact on the traffic operations of the adjacent roadway network. The site driveways and on-site layout have been designed to provide for effective access to and from the subject property and the parking supply would be sufficient to support this project.

Best regards,

Matthew J. Seckler, PE, PTOE
Stonefield Engineering and Design, LLC

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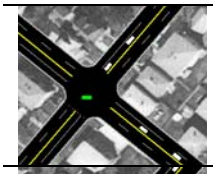
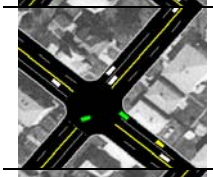
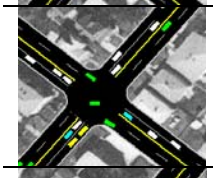
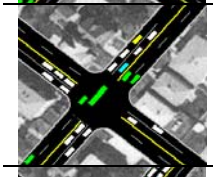
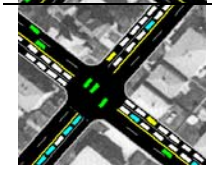
TECHNICAL APPENDIX

LEVEL OF SERVICE/AVERAGE CONTROL DELAY CRITERIA

LEVEL OF SERVICE /AVERAGE CONTROL DELAY CRITERIA

The ability of a roadway to effectively accommodate traffic demand is determined through an assessment of the volume-to-capacity ratio, delay and Level of Service of the lane group and/or intersection. The volume-to-capacity ratio is the ratio of traffic flow rate to capacity for a given transportation facility. As defined within the Highway Capacity Manual, 6th Edition (HCM), intersection delay is the total additional travel time experienced by drivers, passengers, or pedestrians as a result of control measures and interaction with other users of the facility, divided by the volume departing from the corresponding cross section of the facility. Level of service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

For an unsignalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle and LOS F denotes operations with delay in excess of 80 seconds per vehicle.

	Level Of Service (LOS)	Signalized Delay Range (average control delay in sec/veh)	Unsignalized Delay Range (average control delay in sec/veh)
	A	<=10	<=10
	B	>10 and <=20	>10 and <=15
	C	>20 and <=35	>15 and <=25
	D	>35 and <=55	>25 and <=35
	E	>55 and <=80	>35 and <=50
	F	>80	>50

Source: Highway Capacity Manual, 6th Edition

TURNING MOVEMENT COUNT DATA

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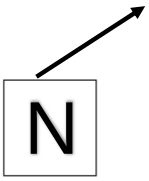
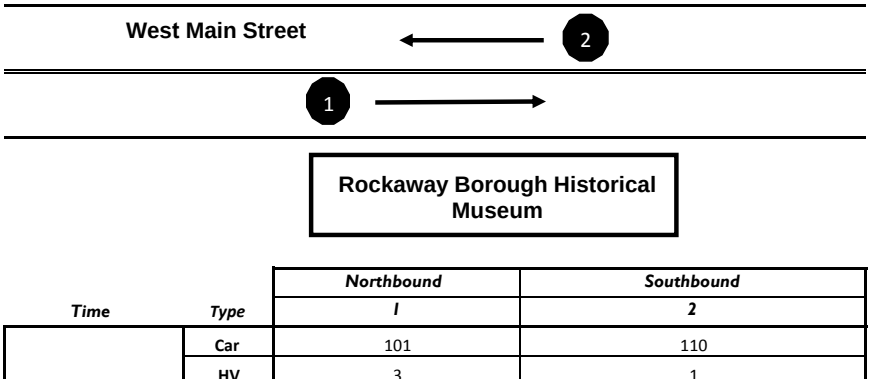
Project :	RPM-Rockaway	**Location:**	W Main Street
SE&D No.:	S-18160	**Municipality:**	Rockaway
Weather:	Clear	**County:**	Morris
Date:	06-Sep-18		





Time	Type	Northbound 1	Southbound 2
7:00 AM	Car	101	110
	HV	3	1
	SB	2	5
	B	0	2
7:15 AM	Car	112	141
	HV	7	2
	SB	1	2
	B	1	0
7:30 AM	Car	191	110
	HV	1	1
	SB	1	4
	B	1	1
7:45 AM	Car	150	180
	HV	1	1
	SB	2	11
	B		0
8:00 AM	Car	134	136
	HV	6	2
	SB	3	3
	B	3	0
8:15 AM	Car	106	101
	HV	2	7
	SB	3	0
	B	2	0
8:30 AM	Car	113	122
	HV	7	2
	SB	0	0
	B	5	0
8:45 AM	Car	159	139
	HV	0	5
	SB	1	0
	B	4	0

Total	Cars	1066	1039
	HV	27	21
	B/SB	29	26
		1122	**1086**

Peak hour from 7:15am to 8:15am	***614***	***594***

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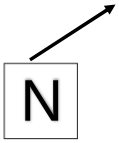
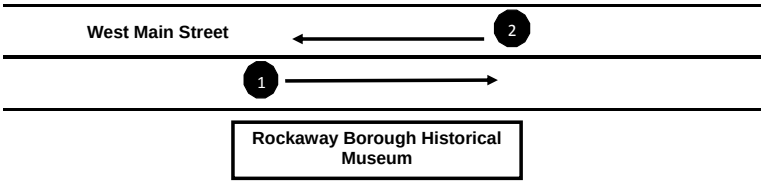
Project :	RPM-Rockaway	**Location:**	W Main Street
SE&D No.:	S-18160	**Municipality:**	Rockaway
Weather:	Clear	**County:**	Morris
Date:	06-Sep-18		





Time	Type	Northbound 1	Southbound 2
4:00 PM	Car	115	97
	HV	4	1
	SB		
	B		
4:15 PM	Car	130	158
	HV	3	1
	SB		2
	B	1	2
4:30 PM	Car	166	150
	HV	3	1
	SB		2
	B		1
4:45 PM	Car	155	138
	HV	1	
	SB	0	
	B	1	
5:00 PM	Car	162	148
	HV	1	
	SB	1	
	B	2	1
5:15 PM	Car	172	188
	HV	3	1
	SB		
	B	1	1
5:30 PM	Car	168	143
	HV	1	
	SB		
	B	1	
5:45 PM	Car	161	157
	HV	1	
	SB	0	
	B	2	1
6:00 PM	Car	135	155
	HV	2	
	SB		
	B	2	
6:15 PM	Car	144	149
	HV	1	
	SB		
	B	2	1
6:30 PM	Car	114	128
	HV	1	
	SB		
	B	1	
6:45 PM	Car	110	123
	HV	2	
	SB	1	
	B		
Total	Cars	1732	1734
	HV	23	4
	B/SB	15	11
		1770	1749
Peak hour from 5:00pm to 6:00pm		676	640

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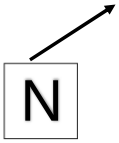
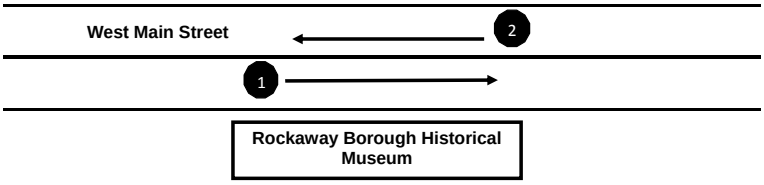
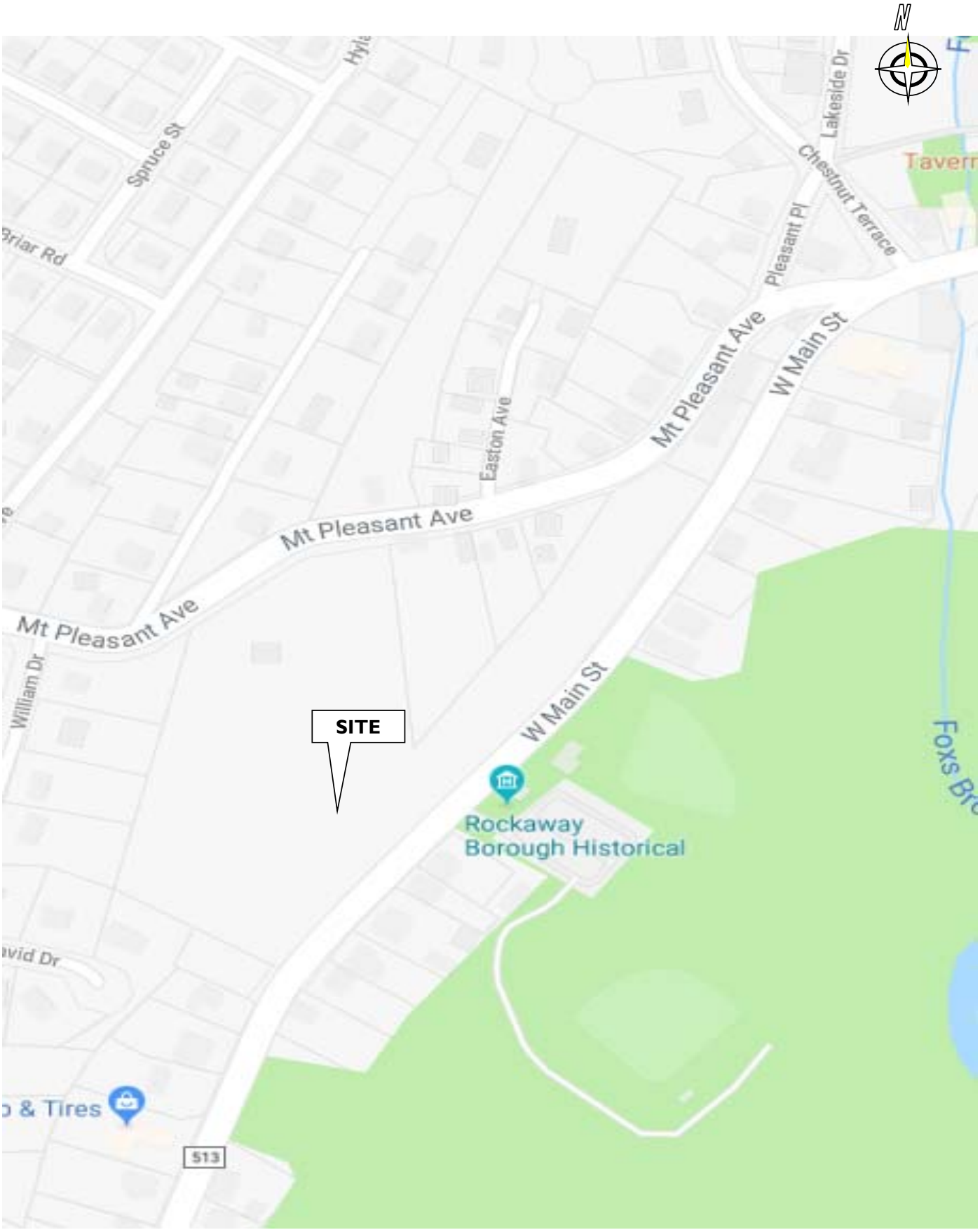
Project :	RPM-Rockaway	**Location:**	W Main Street
SE&D No.:	S-18160	**Municipality:**	Rockaway
Weather:	Clear	**County:**	Morris
Date:	09-Sep-18		



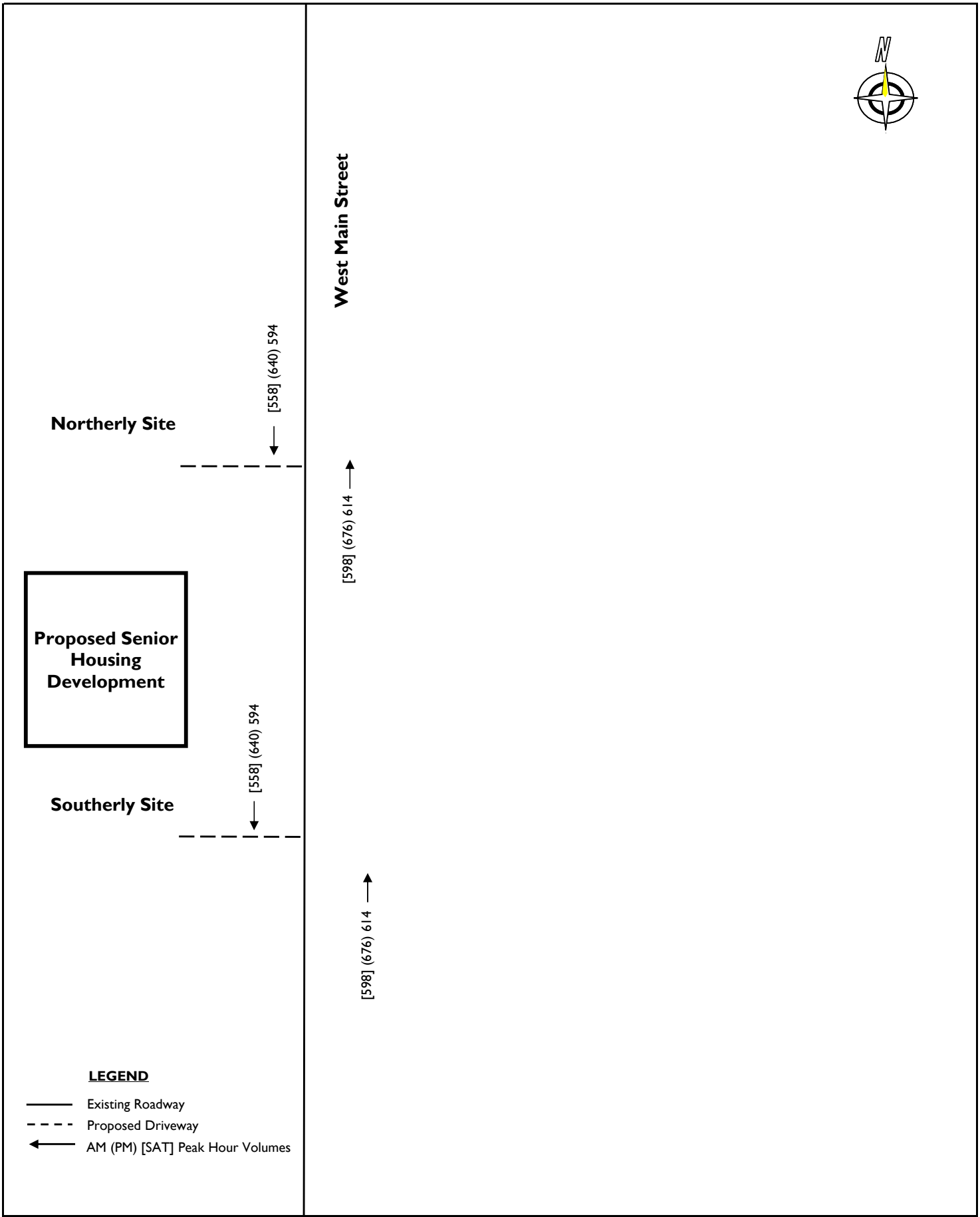


Time	Type	Northbound 1	Southbound 2
11:00 AM	Car	174	137
	HV	3	0
	SB	0	0
	B	2	2
11:15 AM	Car	135	121
	HV	1	3
	SB	0	0
	B	0	0
11:30 AM	Car	118	118
	HV	1	2
	SB	1	0
	B	0	0
11:45 AM	Car	133	158
	HV	1	3
	SB	0	0
	B	0	0
12:00 PM	Car	162	136
	HV	1	2
	SB	0	0
	B	1	1
12:15 PM	Car	179	138
	HV	1	0
	SB	0	0
	B	0	0
12:30 PM	Car	97	108
	HV	1	1
	SB	0	0
	B	2	1
12:45 PM	Car	137	130
	HV	1	0
	SB	0	0
	B	0	2
1:00 PM	Car	142	113
	HV	2	2
	SB	0	0
	B	2	0
1:15 PM	Car	133	136
	HV	0	0
	SB	0	0
	B	0	0
1:30 PM	Car	111	127
	HV	1	0
	SB	0	0
	B	1	1
1:45 PM	Car	120	124
	HV	0	1
	SB	0	0
	B	0	1
Total	Cars	1641	1546
	HV	13	14
	B/SB	9	8
		1663	1568
Peak hour from 11:30am to 12:30pm		598	558

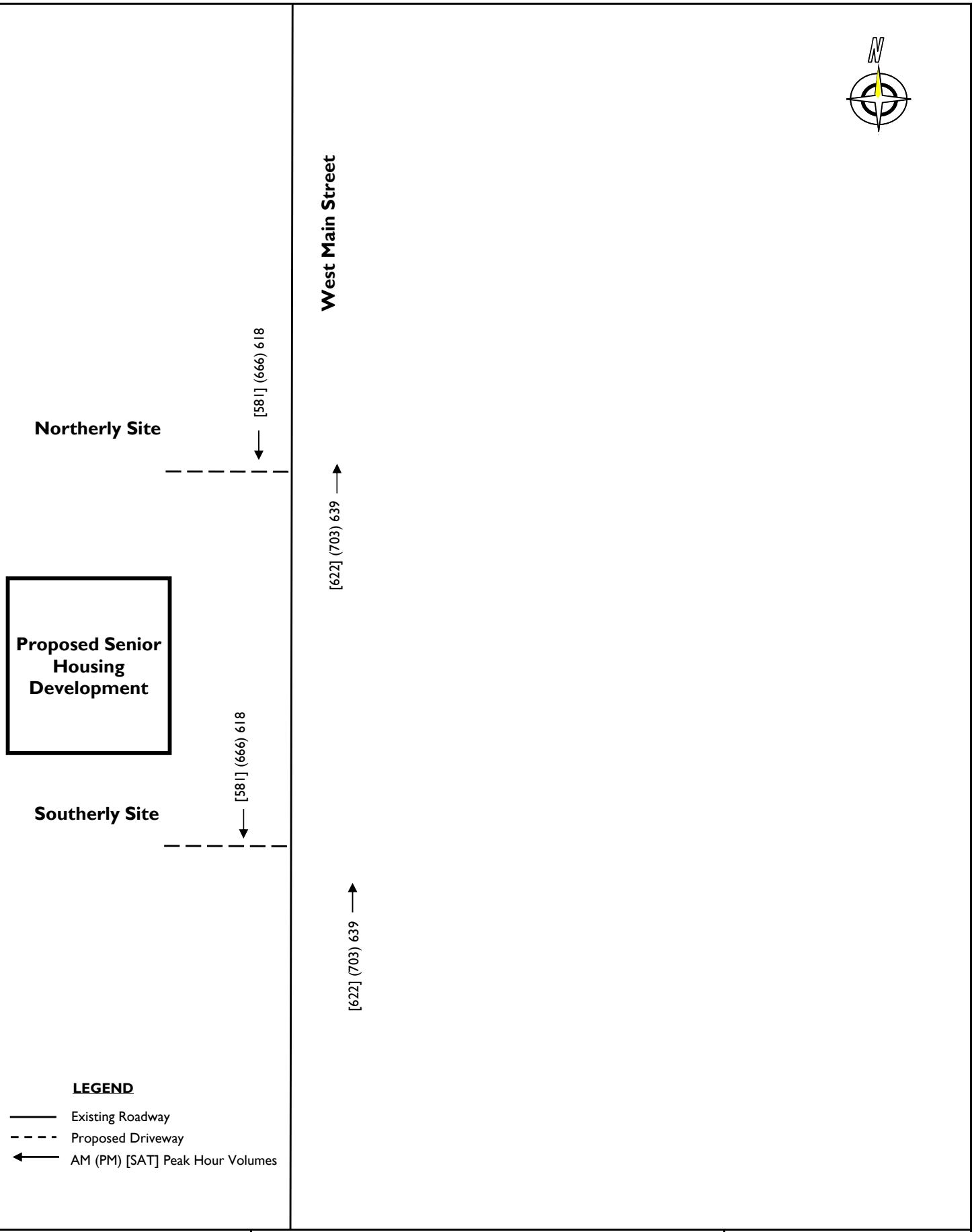
FIGURES



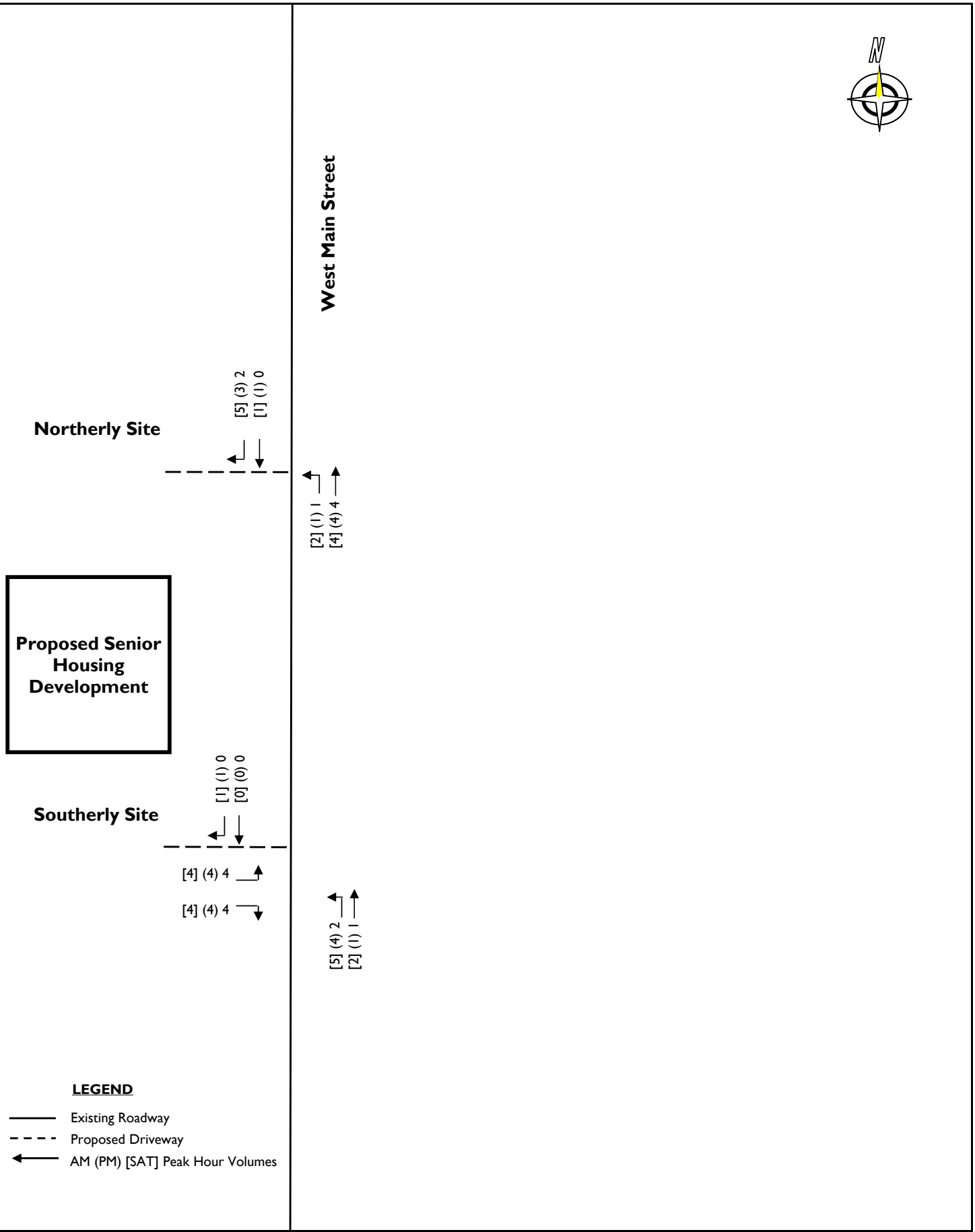
STONEFIELD	**Proposed Senior Housing Development** **West Main Street** **Borough of Rockaway, Morris County** **Traffic Impact Letter Report**	**FIGURE 1** **Site Location Map**



STONEFIELD	**Proposed Senior Housing Development** **West Main Street** **Borough of Rockaway, Morris County** **Traffic Impact Letter Report**	**FIGURE 2** **2018 Existing Traffic Volumes**



STONEFIELD	**Proposed Senior Housing Development** **West Main Street** **Borough of Rockaway, Morris County** **Traffic Impact Letter Report**	**FIGURE 3** **2022 No-Build Traffic Volumes**



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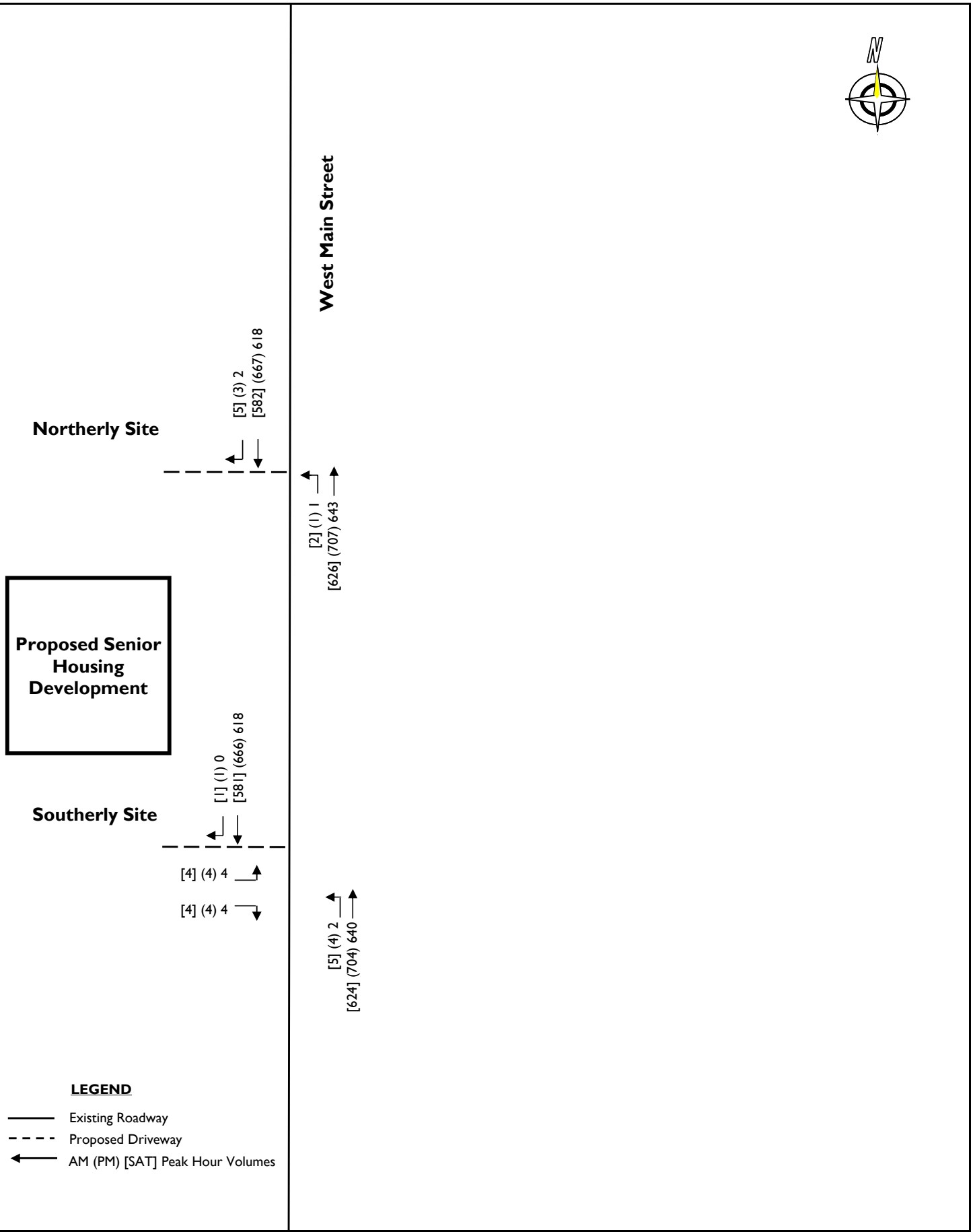
Proposed Senior Housing Development
West Main Street
Borough of Rockaway, Morris County
Traffic Impact Letter Report

FIGURE 4
"New" Site-Generated Traffic Volumes



STONEFIELD	**Proposed Senior Housing Development** **West Main Street** **Borough of Rockaway, Morris County** **Traffic Impact Letter Report**	**FIGURE 5** **2022 Build Traffic Volumes**

CAPACITY ANALYSIS DETAIL SHEETS

HCS7 Two-Way Stop-Control Report

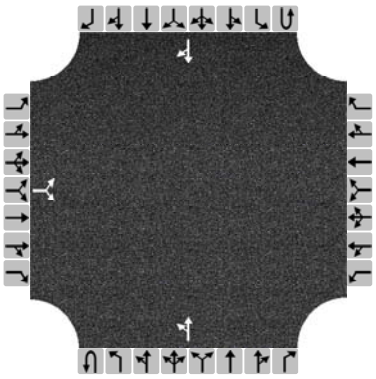
General Information

Analyst	EA
Agency/Co.	SED
Date Performed	7/9/2020
Analysis Year	2022
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	RPM Development

Site Information

Intersection	1AM
Jurisdiction	Morris County
East/West Street	South Driveway
North/South Street	West Main Street
Peak Hour Factor	0.92
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, V (veh/h)		4		4						2	640				618	0
Percent Heavy Vehicles (%)		0		0						0						
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)		6.1		5.2						4.1						
Critical Headway (sec)		5.40		5.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							2						
Capacity, c (veh/h)			332							928						
v/c Ratio			0.03							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			16.1							8.9						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		16.1								0.1						
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

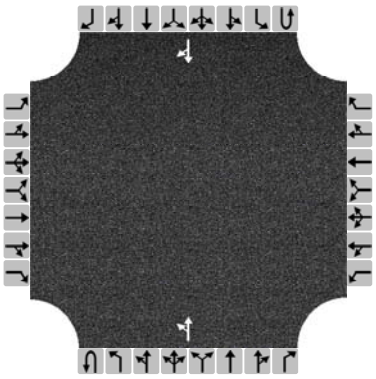
General Information

Analyst	EA
Agency/Co.	SED
Date Performed	7/9/2020
Analysis Year	2022
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	RPM Development

Site Information

Intersection	2AM
Jurisdiction	Morris County
East/West Street	North Driveway
North/South Street	West Main Street
Peak Hour Factor	0.92
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	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration										LT						TR
Volume, V (veh/h)										1	643				618	2
Percent Heavy Vehicles (%)										0						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.10						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										1						
Capacity, c (veh/h)										927						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)										8.9						
Level of Service, LOS										A						
Approach Delay (s/veh)										0.0						
Approach LOS																

HCS7 Two-Way Stop-Control Report

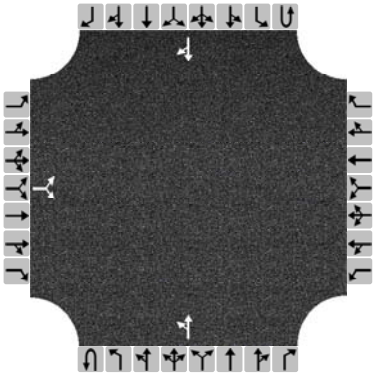
General Information

Analyst	EA
Agency/Co.	SED
Date Performed	7/9/2020
Analysis Year	2022
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	RPM Development

Site Information

Intersection	1PM
Jurisdiction	Morris County
East/West Street	South Driveway
North/South Street	West Main Street
Peak Hour Factor	0.91
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, V (veh/h)		4		4						4	704				666	1
Percent Heavy Vehicles (%)		0		0						0						
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)		6.1		5.2						4.1						
Critical Headway (sec)		5.40		5.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							4						
Capacity, c (veh/h)			291							881						
v/c Ratio			0.03							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			17.8							9.1						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		17.8								0.1						
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

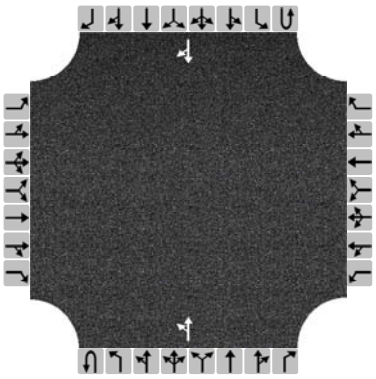
General Information

Analyst	EA
Agency/Co.	SED
Date Performed	7/9/2020
Analysis Year	2022
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	RPM Development

Site Information

Intersection	2PM
Jurisdiction	Morris County
East/West Street	North Driveway
North/South Street	West Main Street
Peak Hour Factor	0.91
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	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration										LT						TR
Volume, V (veh/h)										1	707				667	3
Percent Heavy Vehicles (%)										0						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.10						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										1						
Capacity, c (veh/h)										879						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)										9.1						
Level of Service, LOS										A						
Approach Delay (s/veh)										0.0						
Approach LOS																

HCS7 Two-Way Stop-Control Report

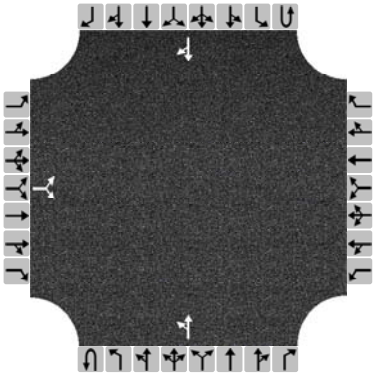
General Information

Analyst	EA
Agency/Co.	SED
Date Performed	7/9/2018
Analysis Year	2022
Time Analyzed	SAT Build
Intersection Orientation	North-South
Project Description	RPM Development

Site Information

Intersection	1SAT
Jurisdiction	Morris County
East/West Street	South Driveway
North/South Street	West Main Street
Peak Hour Factor	0.91
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, V (veh/h)		4		4						5	624				581	1
Percent Heavy Vehicles (%)		0		0						0						
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)		6.1		5.2						4.1						
Critical Headway (sec)		5.40		5.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

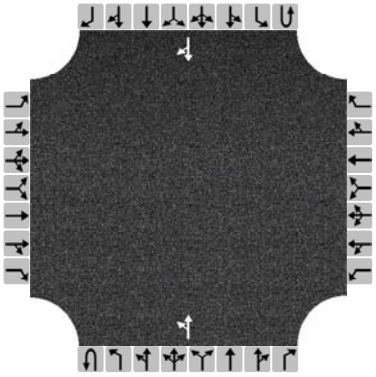
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9							5						
Capacity, c (veh/h)			344							954						
v/c Ratio			0.03							0.01						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			15.7							8.8						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		15.7								0.2						
Approach LOS		C														

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	EA	Intersection	2SAT
Agency/Co.	SED	Jurisdiction	Morris County
Date Performed	7/9/2020	East/West Street	North Driveway
Analysis Year	2022	North/South Street	West Main Street
Time Analyzed	SAT Build	Peak Hour Factor	0.91
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	RPM Development		

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	0	0		0	0	0	0	0	1	0	0	0	1	0
Configuration										LT						TR
Volume, V (veh/h)										2	626				582	5
Percent Heavy Vehicles (%)										0						
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)										4.1						
Critical Headway (sec)										4.10						
Base Follow-Up Headway (sec)										2.2						
Follow-Up Headway (sec)										2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)										2						
Capacity, c (veh/h)										950						
v/c Ratio										0.00						
95% Queue Length, Q_{95} (veh)										0.0						
Control Delay (s/veh)										8.8						
Level of Service, LOS										A						
Approach Delay (s/veh)										0.1						
Approach LOS																