

## McDonough & Rea Associates, Inc.

*Traffic and Transportation Consulting*

Kevin P. McDonough (1953-1994)  
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June 23, 2021

Neptune Township Zoning Board of Adjustment  
25 Neptune Boulevard  
Neptune, NJ 07753

Re: Victoria Gardens  
Lots 1, 2, 3 & 8 in Block 4001  
Neptune Township, Monmouth County  
MRA File No. 21-186

Dear Board Members:

McDonough & Rea Associates (MRA) has been asked to provide the Zoning Board with a *Traffic Impact Analysis* for plans prepared by Professional Design Services (PDS) for *Victoria Gardens*, a 101 unit townhome project proposed for the noted property. The property is located on the east side of Hovchild Boulevard between New Jersey Route 33 and New Jersey Route 66 as shown on *Figure 1*, a *Site Location Map* in the *Appendix*. Plans prepared by PDS show 2 points of access to Hovchild Boulevard.

### **SCOPE OF STUDY**

In order to prepare a thorough *Traffic Impact Analysis* for *Victoria Gardens*, 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 locations:
  - Hovchild Boulevard at McNamara Way/Hovchild Plaza
  - Hovchild Boulevard at westbound Route 33
3. Compared existing 2021 peak hour traffic volumes collected in May 2021 to historical traffic volume data collected by MRA in May of 2017, prior to the Covid 19 pandemic.

Please reply to:

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- 105 Elm Street, Lower Level, Westfield, NJ 07090 • (908) 789-7180 • Fax (908) 789-7181



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4. Utilized the higher of the 2 traffic volume counts as a basis for establishing the traffic analysis.
5. Conducted trip generation analyses for the 101 townhomes based upon data presented in the *10<sup>th</sup> Edition* of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*.
6. Distributed site generated traffic to the adjacent roadway network in accordance with anticipated origins and destinations.
7. Projected traffic volumes to a design year of 2025 including background traffic growth from the New Jersey Department of Transportation (NJDOT) *Historical Growth Rate* data.
8. Prepared level of service capacity analyses for the site driveways to Hovchild Boulevard and the offsite intersections as described above based on *Highway Capacity Manual* procedures.
9. Reviewed the *Site Plan* with respect to availability and accessibility of the parking supply and conformance to New Jersey Residential Site Improvement Standards (RSIS).

The following report sets forth the database accumulated and the conclusions reached with respect to *Victoria Gardens*.

**EXISTING CONDITIONS**

The subject property is located on the east side of Hovchild Boulevard and is in the *R-5 Residential District*, therefore, a *Use Variance* is required for the 101 townhomes. Hovchild Boulevard is a north/south connector roadway connecting the westbound lanes of New Jersey Route 33 to the south with the New Jersey Route 66 interchange to the north. Hovchild Boulevard continues northerly into the *Jersey Shore Premium Outlets* complex on the north side of Route 66.

McNamara Way intersects Hovchild Boulevard as a “T” intersection from the east and is part of the Route 66/Hovchild Boulevard Interchange. Hovchild Plaza intersects Hovchild Boulevard as a “T” intersection from the west, just south of the McNamara Way intersection.



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Hovchild Boulevard intersects the westbound lanes of New Jersey Route 33 as a right-in/right-out intersection just east of the Garden State Parkway.

**EXISTING TRAFFIC VOLUMES**

Traffic volume data was collected by MRA in by conducting manual turning movement counts in May of 2021 at the following locations:

- Hovchild Boulevard at McNamara Way
- Hovchild Plaza at Hovchild Boulevard
- Westbound Route 33 at Hovchild Boulevard

The May 2021 traffic counts were compared to historical traffic volume data collected at McNamara Way/Hovchild Boulevard by this firm in May of 2017, with a finding that the 2017 traffic volumes were higher, presumably due to the absence of Covid 19 restrictions. Therefore, they were used as a basis for the traffic analysis. Existing base 2021 peak hour traffic volumes are shown on *Figure 2* in the *Appendix* and include the NJDOT’s background traffic growth rate, applied to the higher 2017 traffic volumes.

**TRIP GENERATION & DISTRIBUTION**

Estimates of traffic to be generated by the 101 townhomes were made after consulting the 10<sup>th</sup> Edition of the ITE *Trip Generation Manual*. The following *Table* illustrates anticipated peak hour traffic based on ITE Land Use Code 220, *Multi-Family Housing (Low Rise)*.

**TABLE I  
TRIP GENERATION  
101 TOWNHOMES**

AM PSH			PM PSH		
IN	OUT	TOTAL	IN	OUT	TOTAL
11	37	48	38	22	60

With respect to the distribution of site generated traffic, a review was made of access to higher order roadways, such as New Jersey Route 66, New Jersey Route 33, the Garden State Parkway, etc. Based on ease of access to these roadways, traffic was distributed as follows:



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**TABLE II**  
**OUTBOUND TRIP DISTRIBUTION**

- 50 percent to Route 33 west (including Garden State Parkway)
- 20 percent to Route 66 east
- 20 percent to Route 33 east
- 10 percent to Route 66 west

**TRIP DISTRIBUTION ARRIVALS**

- 50 percent from Route 66 east (including Garden State Parkway exit)
- 30 percent from Route 66 west
- 20 percent from Route 33 west

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

**ANALYSIS OF FUTURE TRAFFIC**

A design year of 2025 was assumed for analysis. Existing base 2021 traffic volumes were expanded to design year 2025 traffic volumes by expanding base volumes by 2.5 percent per year in accordance with NJDOT's *Historical Growth Rate* data. *Figure 4* in the *Appendix* illustrates design year 2025 *no-build* traffic volumes. Site generated and distributed traffic was then surcharged onto no-build volumes and are shown on *Figure 5* in the *Appendix* entitled, *Design Year 2025 Build Traffic Volumes*.

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 at capacity conditions and is generally considered the limit of acceptable level of service and delay.



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Full definitions of levels of service for unsignalized intersections and 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 7.9.5.

**WESTBOUND ROUTE 33 AT HOVCHILD BOULEVARD**

Findings were that at this right-in/right-out intersection, exiting movements to Route 33 westbound from Hovchild Boulevard will do so at level of service “B” during the AM peak street hour and level of service “C” during the PM peak street hour. The level of service “B” conditions for the 2025 design year are consistent with the existing level of service “B” conditions for base traffic volumes.

**HOVCHILD PLAZA/HOVCHILD BOULEVARD**

Hovchild Plaza intersects Hovchild Boulevard as a “T” intersection from the west and serves an office building located along Route 66/Hovchild Boulevard. Findings at this location were that exiting movements from Hovchild Plaza at Hovchild Boulevard will do so at level of service “A” during the AM peak street hour and PM peak street hour for both the existing base 2021 condition and the 2025 design year *build* condition. Therefore, this intersection will operate within acceptable traffic engineering parameters.

**MCMNAMARA WAY/HOVCHILD BOULEVARD**

At this unsignalized intersection, findings were that exiting movements from McNamara Way to Hovchild Boulevard will do so at level of service “A” during the AM peak street hour and PM peak street hour for both the existing base 2021 condition and design year 2025 *build* condition. Therefore, this intersection will operate within acceptable traffic engineering parameters.

**SITE ACCESS POINTS (2) TO HOVCHILD BOULEVARD**

Findings at the 2 site access points to Hovchild Boulevard from the project were that exiting movements would do so at level of service “A” at both locations during the AM and PM peak street hours. Therefore, the site driveways will operate within acceptable traffic engineering parameters.



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**SITE PLAN AND PARKING**

The *Site Plan*, prepared by PDS shows 2 point of access to Hovchild Boulevard. Parking is provided in accordance with New Jersey RSIS.

**CONCLUSIONS**

It is concluded based on the analysis set forth in this report that plans prepared by PDS for 101 market rate townhomes can be approved and operate compatibly with future traffic conditions along Hovchild Boulevard. The *Site Plan* has been properly prepared with 2 points of access and is compliant with RSIS parking regulations.

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

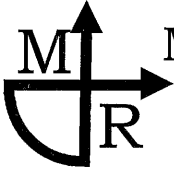
Very truly yours,

John H. Rea, PE  
Principal

Scott T. Kennel  
Sr. Associate

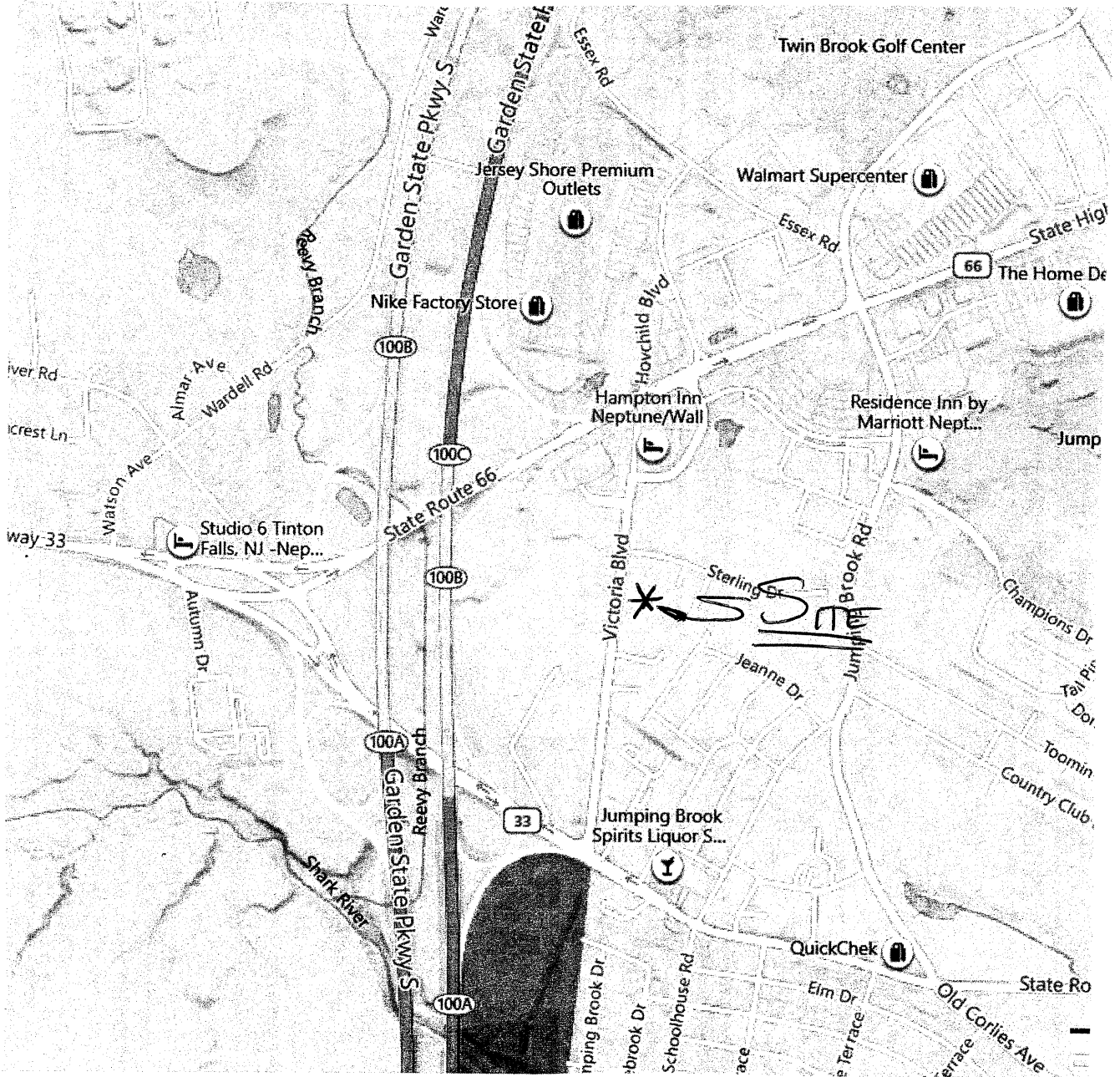
cc: Edele Hovnanian  
John Taddei  
William A. Stevens, PE  
Guliet D, Hirsch, Esq.

# APPENDIX

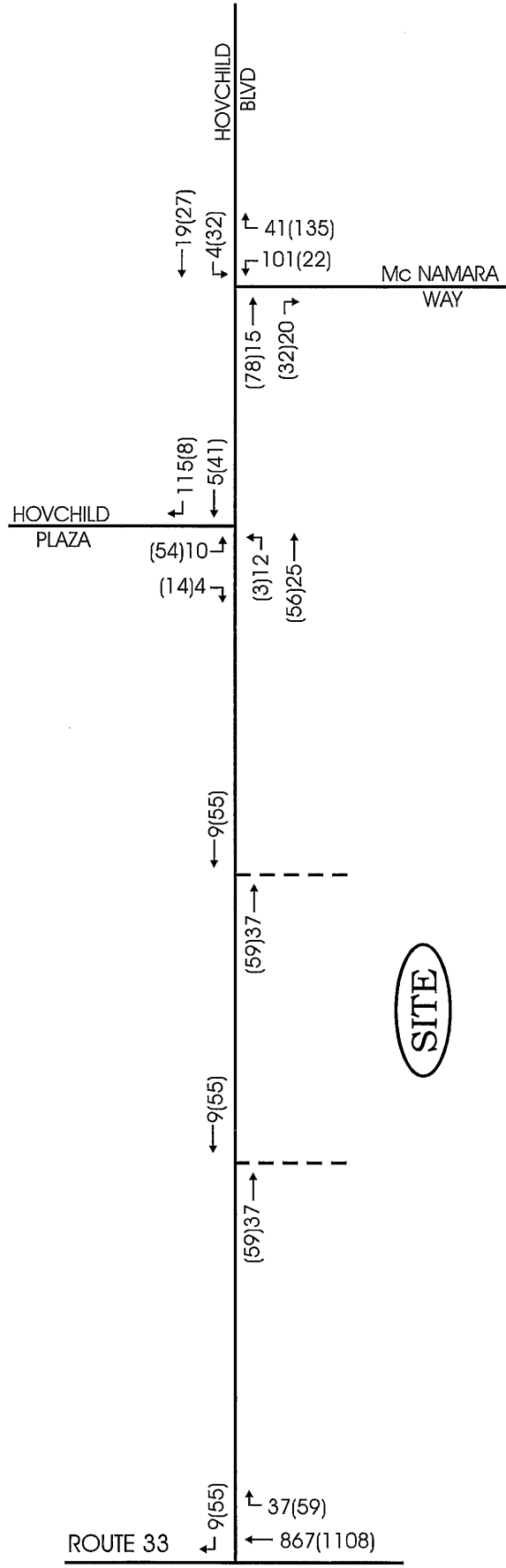


SUBJECT:

VICTORIA GARDENS - NEPTUNE TOWNSHIP  
SITE LOCATION MAP







LEGEND: ← AM PSH(PM PSH)



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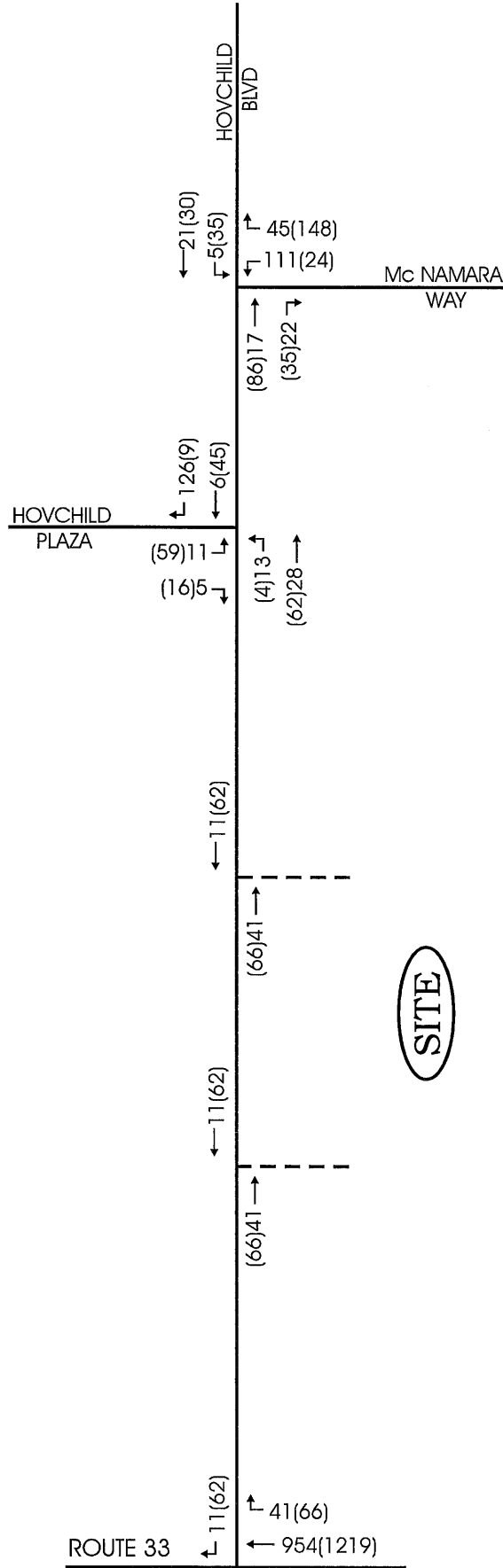
SUBJECT: VICTORIA GARDENS - NEPTUNE TOWNSHIP  
EXISTING 2021 AM PSH (PM PSH) TRAFFIC VOLUMES

FIGURE 2

JOB NO.  
21-186

DATE:  
JUNE 2021





SITE

LEGEND: ← AM PSH(PM PSH)



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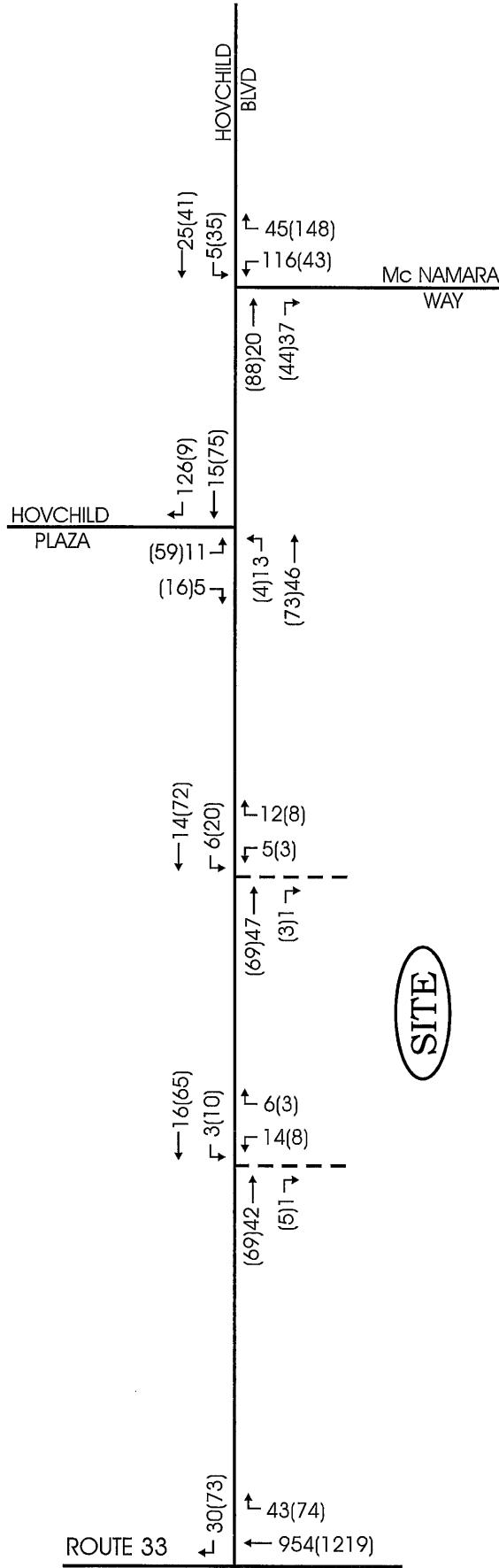
SUBJECT:

VICTORIA GARDENS - NEPTUNE TOWNSHIP  
DESIGN YEAR 2025 NO - BUILD TRAFFIC VOLUMES

FIGURE 4

JOB NO.  
21-186

DATE:  
JUNE 2021



SITE

LEGEND: ← AM PSH(PM PSH)



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SUBJECT: VICTORIA GARDENS - NEPTUNE TOWNSHIP  
DESIGN YEAR 2025 BUILD TRAFFIC VOLUMES

FIGURE 5

JOB NO.  
21-186

DATE:  
JUNE 2021

**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

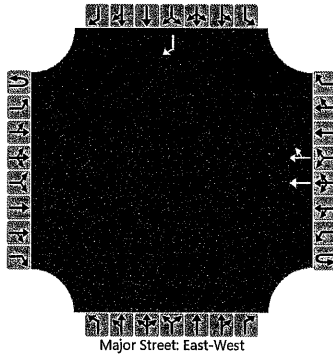
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<sup>1</sup> Transportation Research Board, Highway Capacity Manual 2010, National Research Council, Washington, DC, 2010.

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	RT 33 & HOVCHILD BLVD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	RT 33		
Analysis Year	2021			North/South Street	HOVCHILD BLVD		
Time Analyzed	AM			Peak Hour Factor	0.90		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	21-186AE-1 EXISTING						

## 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		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	0	0	0	0	2	0		0	0	0		0	0	1
Configuration							T	TR								R
Volume (veh/h)							867	37								9
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)																0
Right Turn Channelized																No
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)																	6.9
Critical Headway (sec)																	6.96
Base Follow-Up Headway (sec)																	3.3
Follow-Up Headway (sec)																	3.33

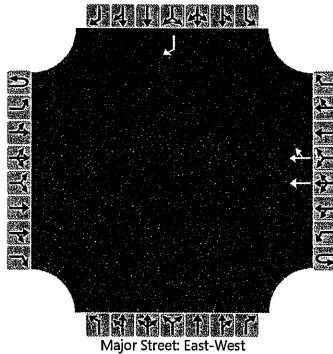
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																	10
Capacity, c (veh/h)																	512
v/c Ratio																	0.02
95% Queue Length, Q <sub>95</sub> (veh)																	0.1
Control Delay (s/veh)																	12.2
Level of Service (LOS)																	B
Approach Delay (s/veh)	12.2																
Approach LOS	B																

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK	Intersection	RT 33 & HOVCHILD BLVD				
Agency/Co.	MRA	Jurisdiction					
Date Performed	6/11/2021	East/West Street	RT 33				
Analysis Year	2025	North/South Street	HOVCHILD BLVD				
Time Analyzed	AM	Peak Hour Factor	0.90				
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25				
Project Description	21-186AFB-1 BUILD						

## 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		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	0	0	0	0	2	0		0	0	0		0	0	1
Configuration							T	TR								R
Volume (veh/h)							954	43								30
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)																0
Right Turn Channelized																No
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)																	6.9
Critical Headway (sec)																	6.96
Base Follow-Up Headway (sec)																	3.3
Follow-Up Headway (sec)																	3.33

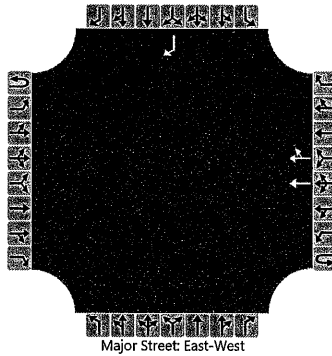
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																	33
Capacity, c (veh/h)																	473
v/c Ratio																	0.07
95% Queue Length, Q <sub>95</sub> (veh)																	0.2
Control Delay (s/veh)																	13.2
Level of Service (LOS)																	B
Approach Delay (s/veh)																	13.2
Approach LOS																	B

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	RT 33 & HOVCHILD BLVD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	RT 33		
Analysis Year	2021			North/South Street	HOVCHILD BLVD		
Time Analyzed	PM			Peak Hour Factor	0.90		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	21-186PE-1 EXISTING						

## 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		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	0	0	0	0	2	0		0	0	0		0	0	1
Configuration							T	TR								R
Volume (veh/h)							1108	59								55
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)																0
Right Turn Channelized																No
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)																	6.9
Critical Headway (sec)																	6.96
Base Follow-Up Headway (sec)																	3.3
Follow-Up Headway (sec)																	3.33

## Delay, Queue Length, and Level of Service

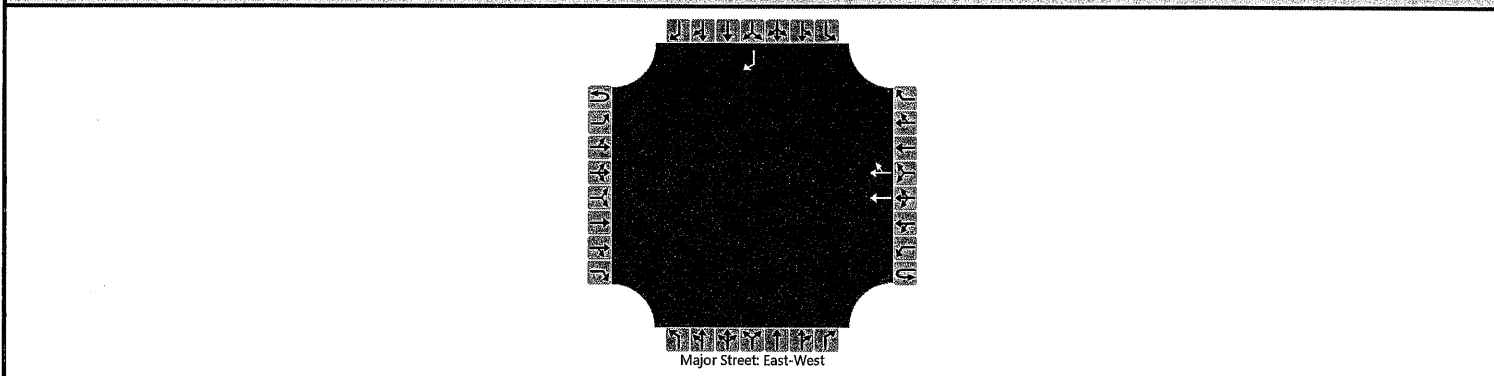
Flow Rate, v (veh/h)																	61
Capacity, c (veh/h)																	410
v/c Ratio																	0.15
95% Queue Length, Q <sub>95</sub> (veh)																	0.5
Control Delay (s/veh)																	15.3
Level of Service (LOS)																	C
Approach Delay (s/veh)	15.3																
Approach LOS	C																



# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	RT 33 & HOVCHILD BLVD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	RT 33		
Analysis Year	2025			North/South Street	HOVCHILD BLVD		
Time Analyzed	PM			Peak Hour Factor	0.90		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	21-186PFB-1 BUILD						

## 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		7	8	9		10	11	12
Number of Lanes	0	0	0	0	0	0	2	0		0	0	0		0	0	1
Configuration							T	TR								R
Volume (veh/h)							1219	74								73
Percent Heavy Vehicles (%)																3
Proportion Time Blocked																
Percent Grade (%)																0
Right Turn Channelized																No
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)																	6.9
Critical Headway (sec)																	6.96
Base Follow-Up Headway (sec)																	3.3
Follow-Up Headway (sec)																	3.33

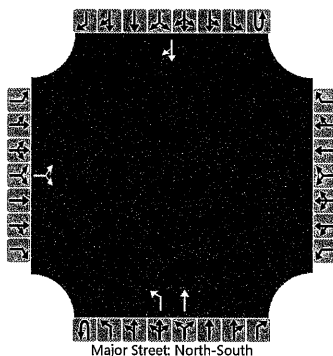
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)																	81
Capacity, c (veh/h)																	369
v/c Ratio																	0.22
95% Queue Length, Q <sub>95</sub> (veh)																	0.8
Control Delay (s/veh)																	17.5
Level of Service (LOS)																	C
Approach Delay (s/veh)	17.5																
Approach LOS	C																

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	HOVCHILD PLAZ&HOVCHILD BD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	HOVCHILD PLAZA		
Analysis Year	2021			North/South Street	HOVCHILD BLVD		
Time Analyzed	AM			Peak Hour Factor	0.90		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	21-186AE-2 EXISTING						

## 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
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	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		10		4						12	25				5	115
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						

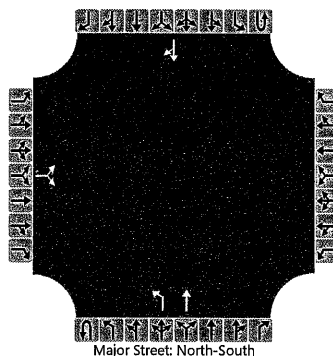
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16							13						
Capacity, c (veh/h)			894							1445						
v/c Ratio			0.02							0.01						
95% Queue Length, Q <sub>95</sub> (veh)			0.1							0.0						
Control Delay (s/veh)			9.1							7.5						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.1								2.4							
Approach LOS	A															

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	HOVCHILD PLAZ&HOVCHILD BD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	HOVCHILD PLAZA		
Analysis Year	2025			North/South Street	HOVCHILD BLVD		
Time Analyzed	AM			Peak Hour Factor	0.90		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	21-186AFB-2 BUILD						

## 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	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		11		5						13	46				15	126
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			

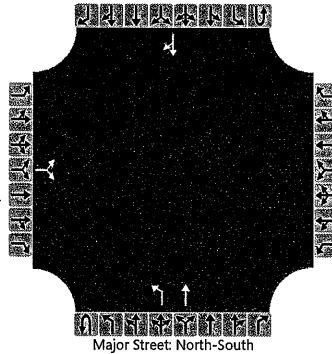
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			18										14			
Capacity, c (veh/h)			856										1417			
v/c Ratio			0.02										0.01			
95% Queue Length, Q <sub>95</sub> (veh)			0.1										0.0			
Control Delay (s/veh)			9.3										7.6			
Level of Service (LOS)			A										A			
Approach Delay (s/veh)	9.3								1.7							
Approach LOS	A															

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	HOVCHILD PLAZ&HOVCHILD BD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	HOVCHILD PLAZA		
Analysis Year	2021			North/South Street	HOVCHILD BLVD		
Time Analyzed	PM			Peak Hour Factor	0.90		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	21-186PE-2 EXISTING						

## 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	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		54		14						3	56				41	8
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			

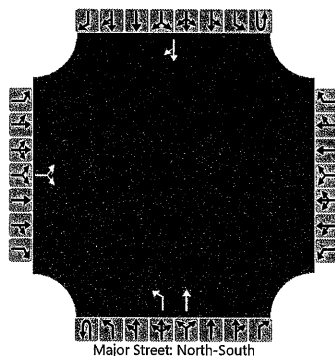
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			76										3			
Capacity, c (veh/h)			899										1544			
v/c Ratio			0.08										0.00			
95% Queue Length, Q <sub>95</sub> (veh)			0.3										0.0			
Control Delay (s/veh)			9.4										7.3			
Level of Service (LOS)			A										A			
Approach Delay (s/veh)	9.4								0.4							
Approach LOS	A															

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	HOVCHILD PLAZ&HOVCHILD BD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	HOVCHILD PLAZA		
Analysis Year	2025			North/South Street	HOVCHILD BLVD		
Time Analyzed	PM			Peak Hour Factor	0.90		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	21-186PFB-2 BUILD						

## 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	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		59		16						4	73				75	9
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			

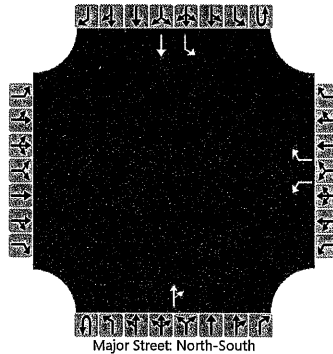
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			83										4			
Capacity, c (veh/h)			836										1495			
v/c Ratio			0.10										0.00			
95% Queue Length, Q <sub>95</sub> (veh)			0.3										0.0			
Control Delay (s/veh)			9.8										7.4			
Level of Service (LOS)			A										A			
Approach Delay (s/veh)	9.8								0.4							
Approach LOS	A															

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	MCNAMAMA&HOVCHILD BD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	MCNAMARA WAY		
Analysis Year	2021			North/South Street	HOVCHILD BLVD		
Time Analyzed	AM			Peak Hour Factor	0.90		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	21-186AE-3 EXISTING						

## 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	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						101		41			15	20		4	19	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No											
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

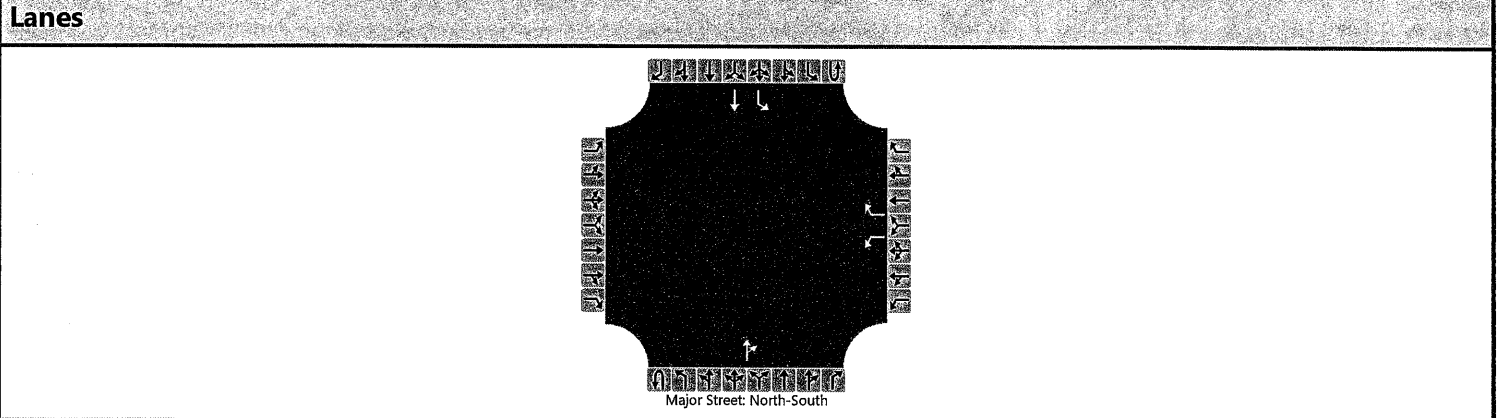
Base Critical Headway (sec)						7.1		6.2								4.1
Critical Headway (sec)						6.43		6.23								4.13
Base Follow-Up Headway (sec)						3.5		3.3								2.2
Follow-Up Headway (sec)						3.53		3.33								2.23

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						112		46								4
Capacity, c (veh/h)						944		1045								1565
v/c Ratio						0.12		0.04								0.00
95% Queue Length, Q <sub>95</sub> (veh)						0.4		0.1								0.0
Control Delay (s/veh)						9.3		8.6								7.3
Level of Service (LOS)						A		A								A
Approach Delay (s/veh)					9.1								1.3			
Approach LOS					A											

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	MCNAMAMA&HOVCHILD BD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	MCNAMARA WAY		
Analysis Year	2025			North/South Street	HOVCHILD BLVD		
Time Analyzed	AM			Peak Hour Factor	0.90		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	21-186AFB-3 BUILD						



**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	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						116		45			20	37		5	25	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No											
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)						129		50								6
Capacity, c (veh/h)						915		1025								1533
v/c Ratio						0.14		0.05								0.00
95% Queue Length, Q <sub>95</sub> (veh)						0.5		0.2								0.0
Control Delay (s/veh)						9.6		8.7								7.4
Level of Service (LOS)						A		A								A
Approach Delay (s/veh)					9.3								1.2			
Approach LOS					A											

# HCS7 Two-Way Stop-Control Report

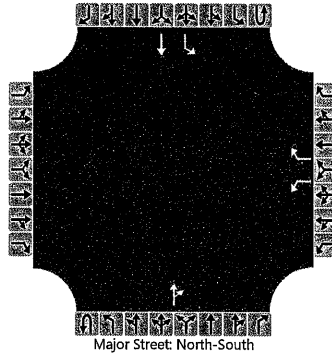
## General Information

Analyst	STK
Agency/Co.	MRA
Date Performed	6/11/2021
Analysis Year	2021
Time Analyzed	PM
Intersection Orientation	North-South
Project Description	21-186PE-3 EXISTING

## Site Information

Intersection	MCNAMAMA&HOVCHILD BD
Jurisdiction	
East/West Street	MCNAMARA WAY
North/South Street	HOVCHILD BLVD
Peak Hour Factor	0.90
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	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						22		135			78	32		32	27	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No											
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

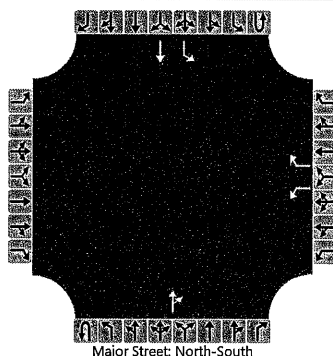
Flow Rate, v (veh/h)						24		150								36
Capacity, c (veh/h)						762		947								1459
v/c Ratio						0.03		0.16								0.02
95% Queue Length, Q <sub>95</sub> (veh)						0.1		0.6								0.1
Control Delay (s/veh)						9.9		9.5								7.5
Level of Service (LOS)						A		A								A
Approach Delay (s/veh)					9.6								4.1			
Approach LOS					A											



# HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	STK	Intersection	MCNAMAMA&HOVCHILD BD
Agency/Co.	MRA	Jurisdiction	
Date Performed	6/11/2021	East/West Street	MCNAMARA WAY
Analysis Year	2025	North/South Street	HOVCHILD BLVD
Time Analyzed	PM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	21-186PFB-3 BUILD		

## 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	0	0		1	0	1	0	0	1	0	0	1	1	0
Configuration						L		R				TR		L	T	
Volume (veh/h)						43		148			88	44		35	41	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No											
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	

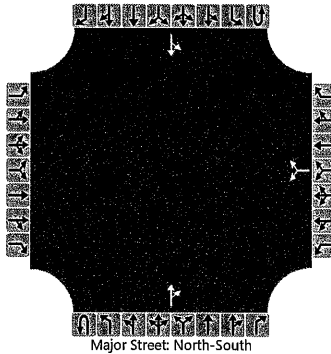
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						48		164							39	
Capacity, c (veh/h)						720		926							1429	
v/c Ratio						0.07		0.18							0.03	
95% Queue Length, Q <sub>95</sub> (veh)						0.2		0.6							0.1	
Control Delay (s/veh)						10.4		9.7							7.6	
Level of Service (LOS)						B		A							A	
Approach Delay (s/veh)					9.9								3.5			
Approach LOS					A											

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	NORTH SITE&HOVCHILD BD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	NORTH SITE ACCESS		
Analysis Year	2025			North/South Street	HOVCHILD BLVD		
Time Analyzed	AM			Peak Hour Factor	0.90		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	21-186AFB-4 BUILD						

## 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	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR			LT	
Volume (veh/h)						5		12			47	1		6	14	
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

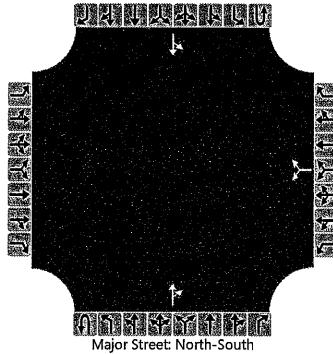
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						19										7
Capacity, c (veh/h)						981										1546
v/c Ratio						0.02										0.00
95% Queue Length, Q <sub>95</sub> (veh)						0.1										0.0
Control Delay (s/veh)						8.7										7.3
Level of Service (LOS)						A										A
Approach Delay (s/veh)					8.7								2.2			
Approach LOS					A											

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	STK			Intersection	NORTH SITE&HOVCHILD BD		
Agency/Co.	MRA			Jurisdiction			
Date Performed	6/11/2021			East/West Street	NORTH SITE ACCESS		
Analysis Year	2025			North/South Street	HOVCHILD BLVD		
Time Analyzed	PM			Peak Hour Factor	0.90		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	21-186PFB-4 BUILD						

## 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	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR			LT	
Volume (veh/h)						3		8			69	3		20	72	
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

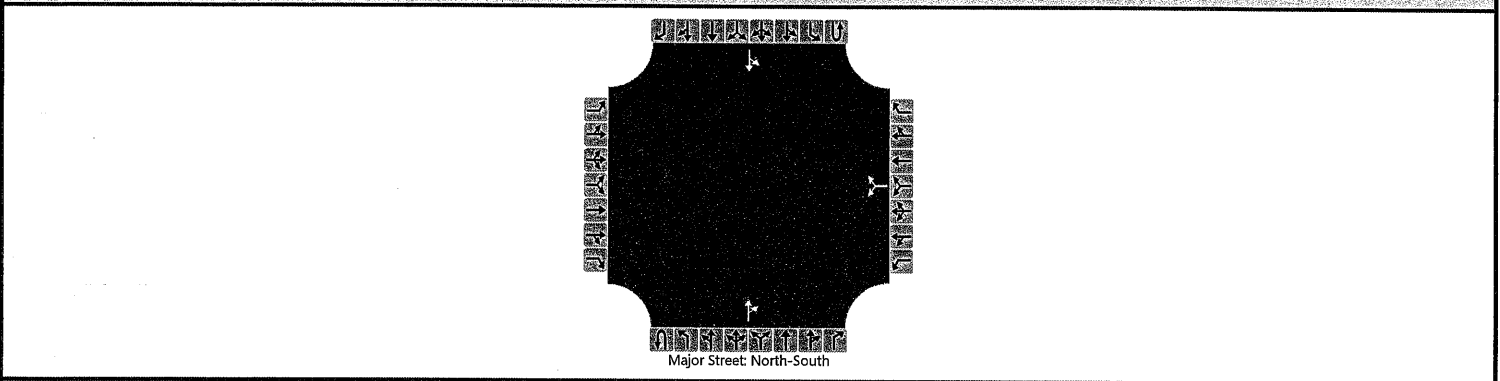
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						12										22
Capacity, c (veh/h)						912										1512
v/c Ratio						0.01										0.01
95% Queue Length, Q <sub>95</sub> (veh)						0.0										0.0
Control Delay (s/veh)						9.0										7.4
Level of Service (LOS)						A										A
Approach Delay (s/veh)					9.0								1.7			
Approach LOS					A											

# HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	STK	Intersection	SOUTH SITE&HOVCHILD BD
Agency/Co.	MRA	Jurisdiction	
Date Performed	6/11/2021	East/West Street	SOUTH SITE ACCESS
Analysis Year	2025	North/South Street	HOVCHILD BLVD
Time Analyzed	AM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	21-186AFB-5 BUILD		

## 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	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR			LT	
Volume (veh/h)						14		6			42	1			3	16
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	

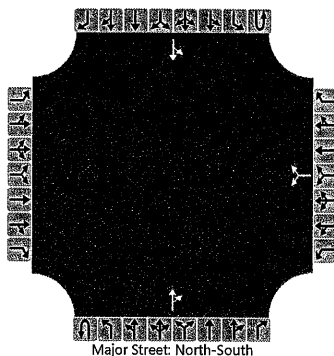
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						22									3	
Capacity, c (veh/h)						954									1553	
v/c Ratio						0.02									0.00	
95% Queue Length, Q <sub>95</sub> (veh)						0.1									0.0	
Control Delay (s/veh)						8.9									7.3	
Level of Service (LOS)						A									A	
Approach Delay (s/veh)					8.9								1.2			
Approach LOS					A											

# HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	STK	Intersection	SOUTH SITE&HOVCHILD BD
Agency/Co.	MRA	Jurisdiction	
Date Performed	6/11/2021	East/West Street	SOUTH SITE ACCESS
Analysis Year	2025	North/South Street	HOVCHILD BLVD
Time Analyzed	PM	Peak Hour Factor	0.90
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	21-186PFB-5 BUILD		

## 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	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR			LT	
Volume (veh/h)						8		3			69	5		10	65	
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)						12								11		
Capacity, c (veh/h)						848								1509		
v/c Ratio						0.01								0.01		
95% Queue Length, Q <sub>95</sub> (veh)						0.0								0.0		
Control Delay (s/veh)						9.3								7.4		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					9.3								1.0			
Approach LOS					A											



TOWN HOMES - NEPTUNE  
 HOVCHILD BLVD & MCNAMARA / PLAZA  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 21-186 TUESDAY PM COUNT

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

File Name : 21186 hovchild & mcnamara pm1  
 Site Code : 00021186  
 Start Date : 5/25/2021  
 Page No : 1

Groups Printed- CARS - SCHOOL BUS

Start Time	Hovchild Blvd Southbound			McNamara Way Westbound			Hovchild Blvd Northbound			Hovchild Plaza Eastbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
03:30 PM	3	2	0	0	10	10	1	10	1	2	0	0
03:45 PM	4	1	0	2	15	17	0	15	4	4	3	3
Total	7	3	0	2	25	27	1	25	5	6	3	3
04:00 PM	8	5	1	2	34	36	1	7	3	8	5	3
04:15 PM	7	7	2	5	25	32	0	9	5	7	3	1
04:30 PM	6	1	2	3	33	36	1	7	0	12	2	3
04:45 PM	5	2	2	6	16	22	0	7	7	5	1	4
Total	26	15	7	16	108	126	2	30	15	32	11	11
05:00 PM	8	2	0	3	22	27	0	3	4	4	5	3
05:15 PM	0	3	0	1	24	25	1	9	4	0	1	4
05:30 PM	3	0	0	1	22	23	0	1	2	3	5	0
05:45 PM	3	2	0	1	20	21	0	9	8	3	3	2
Total	14	7	0	6	88	96	1	22	18	10	14	9
Grand Total	47	25	7	24	221	249	4	77	38	48	28	23
Approch %	59.5	31.6	8.9	9.6	88.8	45.6	3.4	64.7	31.9	48.5	28.3	23.2
Total %	8.6	4.6	1.3	4.4	40.5	21.8	0.7	14.1	7.0	8.8	5.1	4.2

Start Time	Hovchild Blvd Southbound			McNamara Way Westbound			Hovchild Blvd Northbound			Hovchild Plaza Eastbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
04:00 PM	16	2	108	126	126	126	2	30	15	32	11	11
04:15 PM	12.7	1.6	85.7	36	36	36	4.3	63.8	31.9	59.3	20.4	20.4
04:30 PM	2	0	34	36	36	36	1	7	3	8	5	3
04:45 PM	04:00 PM	2	34	36	36	36	04:15 PM	9	5	04:30 PM	2	3
High Int. Volume	7	2	16	16	16	16	0	9	5	12	2	3
Peak Factor	0.750		0.875	0.875	0.875	0.875		0.839		18.1	0.794	

Peak Hour From 03:30 PM to 05:45 PM - Peak 1 of 1

Intersection 04:00 PM

Volume 26

Percent 54.2

04:00 Volume 8

Peak Factor 0.893

High Int. Volume 7

Peak Factor 0.794

TOWN HOMES - NEPTUNE  
 HOVCHILD BLVD & ROUTE 33 WB  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 21-186 THURSDAY AM COUNT

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

File Name : 21186 rt 33 wb & hovchild am1  
 Site Code : 00021186  
 Start Date : 5/27/2021  
 Page No : 1

Groups Printed- CARS - TRUCKS - SCHOOL BUS

Start Time	Hovchild Blvd Southbound			Route 33 Westbound			App. Total	Thru next to divider	Thru next to shoulder	Right	App. Total	Int. Total
	Right	App. Total	Thru next to divider	Thru next to shoulder	Right	App. Total						
07:00 AM	2	2	42	124	7	173	175					
07:15 AM	2	2	65	184	3	252	254					
07:30 AM	1	1	55	179	6	240	241					
07:45 AM	3	3	47	160	7	214	217					
Total	8	8	209	647	23	879	887					
08:00 AM	3	3	42	135	4	181	184					
08:15 AM	1	1	51	129	4	184	185					
08:30 AM	4	4	61	140	11	212	216					
08:45 AM	3	3	57	97	10	164	167					
Total	11	11	211	501	29	741	752					
09:00 AM	2	2	57	90	11	158	160					
09:15 AM	0	0	53	96	8	157	157					
Grand Total	21	21	530	1334	71	1935	1956					
Approch %	100.0		27.4	68.9	3.7							
Total %	1.1	1.1	27.1	68.2	3.6	98.9						

Start Time	Hovchild Blvd Southbound			Route 33 Westbound			App. Total	Thru next to divider	Thru next to shoulder	Right	App. Total	Int. Total
	Right	App. Total	Thru next to divider	Thru next to shoulder	Right	App. Total						
Peak Hour From 07:00 AM to 09:15 AM - Peak 1 of 1												
Intersection 07:15 AM	9	9	209	658	20	887	896					
Volume Percent	100.0		23.6	74.2	2.3							
07:15 Volume	2	2	65	184	3	252	254					
Peak Factor												
High Int. 07:45 AM			07:15 AM				0.882					
Volume	3	3	65	184	3	252	254					
Peak Factor		0.750				0.880						



TOWN HOMES - NEPTUNE  
 HOVCHILD BLVD & ROUTE 33 WB  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 21-186 THURSDAY PM COUNT

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

File Name : 21186 rt 33 wb & hovchild pm1  
 Site Code : 00021186  
 Start Date : 5/27/2021  
 Page No : 1

Groups Printed- CARS - TRUCKS - SCHOOL BUS

Start Time	Hovchild Blvd Southbound		Route 33 Westbound					Int. Total
	Right	App. Total	Thru next to divider	Thru next to shoulder	Right	App. Total	Int. Total	
03:30 PM	7	7	88	180	15	283	290	
03:45 PM	7	7	98	201	11	310	317	
Total	14	14	186	381	26	593	607	
04:00 PM	7	7	85	188	7	280	287	
04:15 PM	3	3	98	170	4	272	275	
04:30 PM	5	5	80	168	15	263	268	
04:45 PM	6	6	77	162	21	260	266	
Total	21	21	340	688	47	1075	1096	
05:00 PM	10	10	78	170	10	258	268	
05:15 PM	6	6	87	185	12	284	290	
05:30 PM	8	8	72	142	9	223	231	
05:45 PM	5	5	64	146	11	221	226	
Total	29	29	301	643	42	986	1015	
Grand Total	64	64	827	1712	115	2654	2718	
Approch %	100.0		31.2	64.5	4.3			
Total %	2.4	2.4	30.4	63.0	4.2	97.6		

Start Time	Hovchild Blvd Southbound		Route 33 Westbound					Int. Total
	Right	App. Total	Thru next to divider	Thru next to shoulder	Right	App. Total	Int. Total	
03:30 PM	24	24	369	739	37	1145	1169	
03:45 PM	7	7	98	201	11	310	317	
High Int. Volume	7	7	98	201	11	310	317	
Peak Factor							0.922	
03:30 PM	7	7	98	201	11	310	317	
Peak Factor		0.857						

McDonough & Rea Associates  
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 (732) 528-7076

File Name : 17170 hovchild & mcnamara pm1  
 Site Code : 00017170  
 Start Date : 5/30/2017  
 Page No. : 1

HILTON  
 HOVCHILD BLVD & McNAMARA WAY  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 17-170 TUESDAY PM COUNT

Groups Printed- CARS - TRUCKS

Start Time	Hovchild Blvd Southbound			McNamara Way Westbound			Hovchild Blvd Northbound			Office Access Eastbound			Int. Total			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				
03:00 PM	6	4	2	3	6	37	46	1	6	6	13	4	5	3	12	83
03:15 PM	6	4	1	1	2	22	25	0	7	5	12	9	0	5	14	62
03:30 PM	6	3	0	2	2	29	33	1	5	4	10	1	4	5	10	62
03:45 PM	4	1	0	2	4	35	41	0	15	3	18	0	3	0	3	67
Total	22	12	3	8	14	123	145	2	33	18	53	14	12	13	39	274
04:00 PM	11	1	0	4	2	38	44	0	7	4	11	10	12	4	26	93
04:15 PM	10	1	0	0	2	23	25	0	4	8	12	6	5	3	14	62
04:30 PM	4	5	1	2	1	19	22	0	6	8	14	11	9	2	22	68
04:45 PM	10	1	1	1	3	23	27	1	9	6	16	6	4	6	16	71
Total	35	8	2	7	8	103	118	1	26	26	53	33	30	15	78	294
05:00 PM	4	3	1	2	2	44	48	1	8	3	12	16	11	18	45	113
05:15 PM	14	1	2	2	1	41	44	0	7	4	11	8	7	4	19	91
05:30 PM	5	4	1	2	1	24	27	2	6	5	13	11	5	6	22	72
05:45 PM	2	4	0	1	2	25	28	0	1	1	2	4	5	2	11	47
Total	25	12	4	7	6	134	147	3	22	13	38	39	28	30	97	323
Grand Total	82	32	9	22	28	360	410	6	81	57	144	86	70	58	214	891
Approach %	66.7	26.0	7.3	5.4	6.8	87.8	46.0	4.2	56.3	39.6	16.2	40.2	32.7	27.1	24.0	
Total %	9.2	3.6	1.0	2.5	3.1	40.4	46.0	0.7	9.1	6.4	16.2	9.7	7.9	6.5		

Start Time	Hovchild Blvd Southbound			McNamara Way Westbound			Hovchild Blvd Northbound			Office Access Eastbound			Int. Total			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				
05:00 Volume	33	9	5	7	7	132	146	4	30	18	52	41	27	34	102	347
05:00 Percent	70.2	19.1	10.6	4.8	4.8	90.4	48	7.7	57.7	34.6	12	40.2	26.5	33.3	45	113
05:00 Volume Peak Factor	4	3	1	2	2	44	48	1	8	3	12	16	11	18	45	113
High Int. Volume Peak Factor	05:15 PM			05:00 PM			04:45 PM				05:00 PM					0.768
05:00 Volume Peak Factor	14	1	2	2	2	44	48	1	9	6	16	16	11	18	45	0.567
Peak Factor				0.691			0.760				0.813					

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HILTON  
 HOVCHILD BLVD & McNAMARA WAY  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 17-170 SATURDAY COUNT

File Name : 17170 hovchild & mcnamara sat1  
 Site Code : 00017170  
 Start Date : 5/27/2017  
 Page No : 1

Groups Printed- CARS - TRUCKS

Start Time	Hovchild Blvd Southbound			McNamara Way Westbound			Hovchild Blvd Northbound			Office Access Eastbound				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	App. Total	Int. Total
11:00 AM	7	3	0	3	0	62	0	11	6	0	0	0	0	92
11:15 AM	5	3	0	0	0	68	0	17	4	0	0	0	0	97
11:30 AM	7	2	0	2	1	54	0	15	8	0	0	0	0	89
11:45 AM	10	2	0	6	0	61	0	21	5	0	0	0	0	105
Total	29	10	0	11	1	245	0	64	23	0	0	0	0	383
12:00 PM	4	7	0	2	0	63	0	10	3	0	0	0	0	89
12:15 PM	8	6	0	3	0	71	0	15	5	0	0	0	0	108
12:30 PM	7	1	1	3	0	82	0	11	6	0	0	0	0	111
12:45 PM	7	2	0	2	0	59	0	12	4	0	0	0	0	86
Total	26	16	1	10	0	275	0	48	18	0	0	0	0	394
01:00 PM	10	9	0	3	0	76	0	17	6	0	0	0	0	121
01:15 PM	15	7	0	3	0	60	0	13	4	0	0	0	0	102
01:30 PM	8	5	0	5	0	69	0	10	4	0	0	0	1	102
01:45 PM	10	5	1	3	0	88	0	19	3	0	0	0	0	129
Total	43	26	1	14	0	293	0	59	17	0	0	0	0	454
Grand Total	98	52	2	35	1	813	0	171	58	0	0	0	1	1231
Approch %	64.5	34.2	1.3	4.1	0.1	95.8	0.0	74.7	25.3	0.0	0.0	100.0	0.1	
Total %	8.0	4.2	0.2	2.8	0.1	66.0	0.0	13.9	4.7	0.0	0.0	0.1	0.1	

Start Time	Hovchild Blvd Southbound			McNamara Way Westbound			Hovchild Blvd Northbound			Office Access Eastbound				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	App. Total	Int. Total
01:00 PM	43	26	1	14	0	293	0	59	17	0	0	0	0	454
Volume	61.4	37.1	1.4	4.6	0.0	95.4	0.0	77.6	22.4	0.0	0.0	100.0	0	129
Percent	10	5	1	3	0	88	0	19	3	0	0	0	0	0.880
Peak Factor														
High Int. Volume	15	7	0	3	0	88	0	17	6	0	0	1	1	
Peak Factor													0.250	

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HILTON  
 McNAMARA WAY & WAVERLY/HOTEL  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 17-170 TUESDAY PM COUNT

File Name : 17170 waverly & mcnamara pm1  
 Site Code : 00017170  
 Start Date : 5/23/2017  
 Page No : 1

Groups Printed- CARS - TRUCKS

Start Time	McNamara Way Southbound			Waverly Avenue Westbound			McNamara Way Northbound			Staybridge Access Eastbound			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
03:00 PM	5	30	2	3	0	1	4	0	11	6	17	0	0	58
03:15 PM	3	27	0	3	1	1	5	0	6	5	11	1	0	47
03:30 PM	6	26	3	6	0	0	6	0	12	2	14	0	0	55
03:45 PM	10	31	1	8	2	1	11	1	6	3	10	1	0	64
Total	24	114	6	20	3	3	26	1	35	16	52	2	0	224
04:00 PM	5	27	5	9	0	0	9	0	15	2	17	0	0	63
04:15 PM	2	25	3	6	0	1	7	1	11	7	19	0	2	59
04:30 PM	9	27	3	9	4	2	15	0	10	9	19	0	1	74
04:45 PM	7	30	4	8	0	4	12	0	9	9	18	0	0	71
Total	23	109	15	32	4	7	43	1	45	27	73	0	2	267
05:00 PM	8	20	2	19	4	6	29	0	7	7	14	0	0	73
05:15 PM	8	19	1	11	2	1	14	1	10	5	16	1	0	59
05:30 PM	11	31	2	8	3	1	12	0	10	4	14	0	0	70
05:45 PM	6	25	0	6	1	2	9	0	7	5	12	1	0	53
Total	33	95	5	44	10	10	64	1	34	21	56	2	0	255
Grand Total	80	318	26	96	17	20	133	3	114	64	181	4	2	746
Approch %	18.9	75.0	6.1	72.2	12.8	15.0	17.8	1.7	63.0	35.4	24.3	50.0	25.0	8
Total %	10.7	42.6	3.5	12.9	2.3	2.7	17.8	0.4	15.3	8.6	24.3	0.5	0.3	1.1

Start Time	McNamara Way Southbound			Waverly Avenue Westbound			McNamara Way Northbound			Staybridge Access Eastbound			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
04:30 Volume	26	102	12	42	8	13	63	1	37	32	70	2	2	277
Percent	18.6	72.9	8.6	66.7	12.7	20.6	15	1.4	52.9	45.7	19	50.0	50.0	74
Peak Factor	9	27	3	9	4	2	15	0	10	9	19	1	0	0.936
High Int. Volume	04:45 PM	30	4	19	4	6	29	1	11	7	19	1	2	74
Peak Factor	04:15 PM	7	4	19	4	6	29	1	11	7	19	1	2	0.936
				0.854			0.543				0.921			0.333

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

File Name : 17170 waverly & mcnamara sat1  
 Site Code : 00017170  
 Start Date : 6/3/2017  
 Page No : 1

HILTON  
 McNAMARA WAY & WAVERLY/HOTEL  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 17-170 SATURDAY COUNT

Groups Printed- CARS - TRUCKS

Start Time	McNamara Way Southbound			Waverly Avenue Westbound			McNamara Way Northbound			Staybridge Access Eastbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
11:00 AM	5	41	2	1	0	0	0	5	10	0	0	0
11:15 AM	2	37	0	0	1	0	0	6	10	1	0	0
11:30 AM	2	59	2	1	0	0	0	11	14	1	0	0
11:45 AM	3	47	0	1	0	0	0	10	12	0	0	0
Total	12	184	4	3	1	0	4	32	46	2	0	1
12:00 PM	6	51	2	2	2	0	4	9	13	1	1	0
12:15 PM	6	72	1	5	0	0	5	9	17	1	0	0
12:30 PM	6	49	2	3	1	0	4	8	9	2	2	0
12:45 PM	1	80	3	3	0	0	3	6	10	0	0	2
Total	19	252	8	13	3	0	16	32	49	4	3	2
01:00 PM	5	56	0	0	1	0	1	12	14	0	1	0
01:15 PM	2	44	1	6	1	0	7	3	6	0	0	0
01:30 PM	2	52	2	3	1	0	4	10	12	0	1	0
01:45 PM	6	77	0	4	0	0	4	7	11	0	0	0
Total	15	229	3	13	3	0	16	32	43	0	2	0
Grand Total	46	665	15	29	7	0	36	96	138	6	5	3
Approch %	6.3	91.6	2.1	80.6	19.4	0.0	0.7	69.6	29.7	42.9	35.7	21.4
Total %	5.0	72.8	1.6	3.2	0.8	0.0	3.9	10.5	15.1	0.7	0.5	0.3

Start Time	McNamara Way Southbound			Waverly Avenue Westbound			McNamara Way Northbound			Staybridge Access Eastbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
12:00 PM	19	252	8	13	3	0	16	32	49	4	3	2
12:15 PM	6.8	90.3	2.9	81.3	18.8	0.0	5	65.3	32.7	44.4	33.3	22.2
12:30 PM	6	72	1	5	0	0	5	9	7	1	0	0
12:45 PM	1	80	3	5	0	0	5	9	7	1	0	0
Total	1	80	3	5	0	0	5	9	7	2	2	0
Volume	19	252	8	13	3	0	16	32	49	4	3	2
Percent	6.8	90.3	2.9	81.3	18.8	0.0	5	65.3	32.7	44.4	33.3	22.2
Peak Volume	6	72	1	5	0	0	5	9	7	1	0	0
Peak Factor	0.865	0.830	0.800	0.865	0.830	0.800	0.865	0.830	0.800	0.865	0.830	0.800
High Int.	12:45 PM	12:45 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:30 PM	12:30 PM	12:30 PM	12:30 PM
Volume	1	80	3	5	0	0	5	9	7	2	2	0
Peak Factor	0.865	0.830	0.800	0.865	0.830	0.800	0.865	0.830	0.800	0.865	0.830	0.800

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

File Name : 17170 s hotel & mcnamara pm1  
 Site Code : 00017170  
 Start Date : 5/23/2017  
 Page No : 1

HILTON  
 McNAMARA WAY & S. HOTEL ACCESS  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 17-170 TUESDAY PM COUNT

Groups Printed- CARS - TRUCKS

Start Time	McNamara Way Southbound			McNamara Way Northbound			Southern Staybridge Access Eastbound			Int. Total
	Right	Left	App. Total	Right	Left	App. Total	Right	Left	App. Total	
03:00 PM	1	1	1	0	2	2	2	4	4	6
03:15 PM	0	0	0	0	0	0	2	2	2	2
03:30 PM	0	0	0	0	1	1	0	1	1	1
03:45 PM	0	0	0	0	0	0	1	1	1	1
Total	1	1	1	1	3	3	5	8	8	10
04:00 PM	0	0	0	0	0	0	3	3	3	3
04:15 PM	2	3	3	2	2	2	1	3	3	8
04:30 PM	2	0	0	1	1	1	0	1	1	3
04:45 PM	1	1	1	5	5	6	1	6	6	8
Total	5	4	4	8	8	13	5	13	13	22
05:00 PM	0	0	0	0	0	0	3	3	3	3
05:15 PM	0	2	2	3	3	3	2	5	5	7
05:30 PM	1	0	0	2	2	2	1	3	3	4
05:45 PM	0	0	0	2	2	2	1	3	3	4
Total	1	2	2	7	7	7	7	14	14	17
Grand Total	7	7	7	18	18	35	17	35	35	49
Approch %	100.0	100.0	14.3	51.4	51.4	71.4	48.6	48.6	48.6	
Total %	14.3	14.3	14.3	36.7	36.7	71.4	34.7	34.7	34.7	

Start Time	McNamara Way Southbound			McNamara Way Northbound			Southern Staybridge Access Eastbound			Int. Total
	Right	Left	App. Total	Right	Left	App. Total	Right	Left	App. Total	
04:00 PM	5	4	4	8	8	13	5	5	13	22
04:15 PM	100.0	100.0	1	61.5	61.5	6	38.5	38.5	6	8
04:30 PM	1	1	1	5	5	1	1	1	1	0.688
04:45 PM	2	3	3	5	5	6	1	1	6	0.688
High Int. Volume	04:15 PM	04:45 PM	0.333	04:45 PM	04:45 PM	0.542				
Peak Factor	0.625	0.333	0.333	0.542	0.542	0.542	0.542	0.542	0.542	

Peak Hour From 03:00 PM to 05:45 PM - Peak 1 of 1

Intersection 04:00 PM

Volume

Percent

04:45 Volume

Peak Factor

High Int. Volume

Peak Factor

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

HILTON  
 McNAMARA WAY & S. HOTEL ACCESS  
 NEPTUNE TOWNSHIP, MONMOUTH COUNTY  
 MRA JOB 17-170 SATURDAY COUNT

File Name : 17170 s hotel & mcnamara sat1  
 Site Code : 00017170  
 Start Date : 6/3/2017  
 Page No : 1

Groups Printed- CARS - TRUCKS

Start Time	McNamara Way Southbound			McNamara Way Northbound			Southern Staybridge Access Eastbound			Int. Total
	Right	Left	App. Total	Left	Right	App. Total	Left	Right	App. Total	
11:00 AM	0	2	0	2	1	2	3	1	4	6
11:15 AM	0	0	0	0	2	0	4	2	6	6
11:30 AM	1	0	1	0	0	0	5	3	8	9
11:45 AM	0	0	0	0	0	0	4	0	4	4
Total	1	2	1	2	2	2	16	6	22	25
12:00 PM	0	1	0	1	2	1	7	2	9	10
12:15 PM	0	3	0	3	4	3	4	2	6	9
12:30 PM	0	1	0	1	1	1	1	0	1	2
12:45 PM	0	3	0	3	3	3	3	0	3	6
Total	0	8	0	8	8	8	15	4	19	27
01:00 PM	0	1	0	1	1	1	3	2	5	6
01:15 PM	0	1	0	1	1	1	3	0	3	4
01:30 PM	0	2	0	2	2	2	1	2	3	5
01:45 PM	0	1	0	1	1	1	2	0	2	3
Total	0	5	0	5	5	5	9	4	13	18
Grand Total	1	15	1	15	15	15	40	14	54	70
Approch %	100.0	100.0	1.4	100.0	74.1	25.9	74.1	25.9	77.1	
Total %	1.4	21.4	1.4	21.4	21.4	21.4	57.1	20.0		

Start Time	McNamara Way Southbound			McNamara Way Northbound			Southern Staybridge Access Eastbound			Int. Total
	Right	Left	App. Total	Left	Right	App. Total	Left	Right	App. Total	
11:30 AM	1	4	1	4	7	4	20	7	27	32
12:00 Volume	100.0	100.0	0	100.0	74.1	25.9	74.1	25.9	9	10
Peak Factor	0	1	0	1	2	2	7	2	0.800	
High Int. 11:30 AM	1	3	1	3	12:00 PM	3	7	2	9	
Volume	1	3	1	3	12:15 PM	3	7	2	9	
Peak Factor	1	0.250	0.250	0.333	0.333	0.333	0.750	0.750	0.750	