



November 20, 2023

Borough of Atlantic Highlands Planning Board  
100 First Avenue  
Atlantic Highlands, NJ 07716

**Re: *Independent Traffic Study***  
***160 First Avenue Development Application***  
***Block 101, Lot 4.01***  
***Borough of Atlantic Highlands, Monmouth County, NJ***  
***Our File Number: HAHP0101.03***

Dear Chairman McGoldrick and Members of the Planning Board:

On behalf of the Atlantic Highlands Planning Board, CME Associates has prepared the following independent traffic study for the application located at 160 First Avenue for the development of 1,413 square feet of retail and 30 apartments based off of the Applicant's traffic study. It should be noted that the Applicant submitted updated site plans revision 5 last revised September 25, 2023 and submitted electronically November 9, 2023. The updated site plans propose 870 square feet of retail and 25 apartments, which is lower than the proposed development discussed in this report and therefore, making this report a conservative traffic report. The approximate location of the site is shown in the Site Location Map in the Appendix. The Applicant is proposing to remove the existing businesses on the property and the existing access driveways along both First Avenue and Garfield Avenue to construct one site driveway on Garfield Avenue.

This Independent Traffic Study included the following tasks:

- Collection of Traffic Counts at the Unsignalized Intersection of First Avenue and Garfield Avenue during the following time periods:
  - Tuesday, September 26, 2023, from 6am – 10am and 3pm – 7pm;
  - Wednesday, September 27, 2023, from 6am – 10am and 3pm – 7pm;
  - Saturday, September 30, 2023, from 10:30am – 2:30pm;
  - Sunday, October 1, 2023, from 10:30am – 2:30pm;
- Calculation of Future No-Build (without site traffic) volumes by applying an NJDOT approved background growth rate to account for traffic increases in the local roadway network;
- Calculation of Site Generated Traffic Volumes for the proposed development utilizing trip generation rates published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual*, 11<sup>th</sup> Edition;
- Assignment of Site Generated Traffic Volumes along the roadway network based on the existing traffic counts;
- Calculation of Future Build Traffic Volumes by adding future No-Build Traffic Volumes to Site-Generated Traffic Volumes;



Members of the Planning Board  
Borough of Atlantic Highlands  
Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
Our File No. HAHP0101.03  
Page 2

- Evaluation of Anticipated Delays and Levels of Service for the Unsignalized Intersection of First Avenue and Garfield Avenue during the No-Build and Build conditions based on procedures published in the current Highway Capacity Manual.

### **Existing Traffic Conditions**

W. Garfield Avenue / E. Garfield Avenue is an east-west local roadway under the jurisdiction of the Borough of Atlantic Highlands. The posted speed limit is 25 miles per hour. Parking is not permitted on the eastbound side of E. Garfield Avenue in the vicinity of the site. Parking is permitted on the westbound side of E. Garfield Avenue east of the proposed site. Uses along E. Garfield Avenue east of the site are primarily residential and primarily commercial west of the site on W. Garfield Avenue.

First Avenue (County Route 8) is a north-south County urban major collector roadway under the jurisdiction of Monmouth County. The posted speed limit is 25 miles per hour. Parking is permitted on both sides of the roadway, typically in delineated spaces. Uses are primarily commercial along First Avenue. First Avenue provides access approximately 2600 feet +/- north from the unsignalized intersection of W. Garfield Avenue / E. Garfield Avenue to a ferry service that provides weekday transportation to and from New York City and provides access approximately 400 feet +/- south from the unsignalized intersection of W. Garfield Avenue / E. Garfield Avenue to NJ Route 36 which provides connections to the Garden State Parkway and various Jersey Shore destinations.

First Avenue and W. Garfield Avenue intersect to create a four-leg unsignalized intersection. W. Garfield Avenue and E. Garfield Avenue operate under stop control. Each approach is controlled by one lane controlling all movements, and crosswalks exist on the south, west, and east legs of the intersection, though the First Avenue northbound approach provides lane consolidation from 2 lanes northbound to 1 lane northbound between NJ 36 and W. Garfield Avenue / E. Garfield Avenue. The existing site of 160 First Avenue is located on the northeast corner of the intersection of First Avenue and W. Garfield Avenue / E. Garfield Avenue.

### **Existing Manual Turning Movement Counts**

CME Associates arranged for manual turning movement traffic counts to be performed by its subcontractor TechniQuest. The times and days of the manual turning movement traffic counts were selected to meet the minimum requirements as listed in Borough Ordinance § 150-19.G.(1)(a)[3], which require the independent traffic study include two weekdays, one weekend, and at least 4 1-hour recording periods per day, two of which must occur during peak hours.



Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 3

The Applicant's Engineer obtained traffic count data on February 8, 2023 in the PM and February 10, 2023 in the AM for their traffic study. We compared the Applicant's weekday counts to our weekday counts.

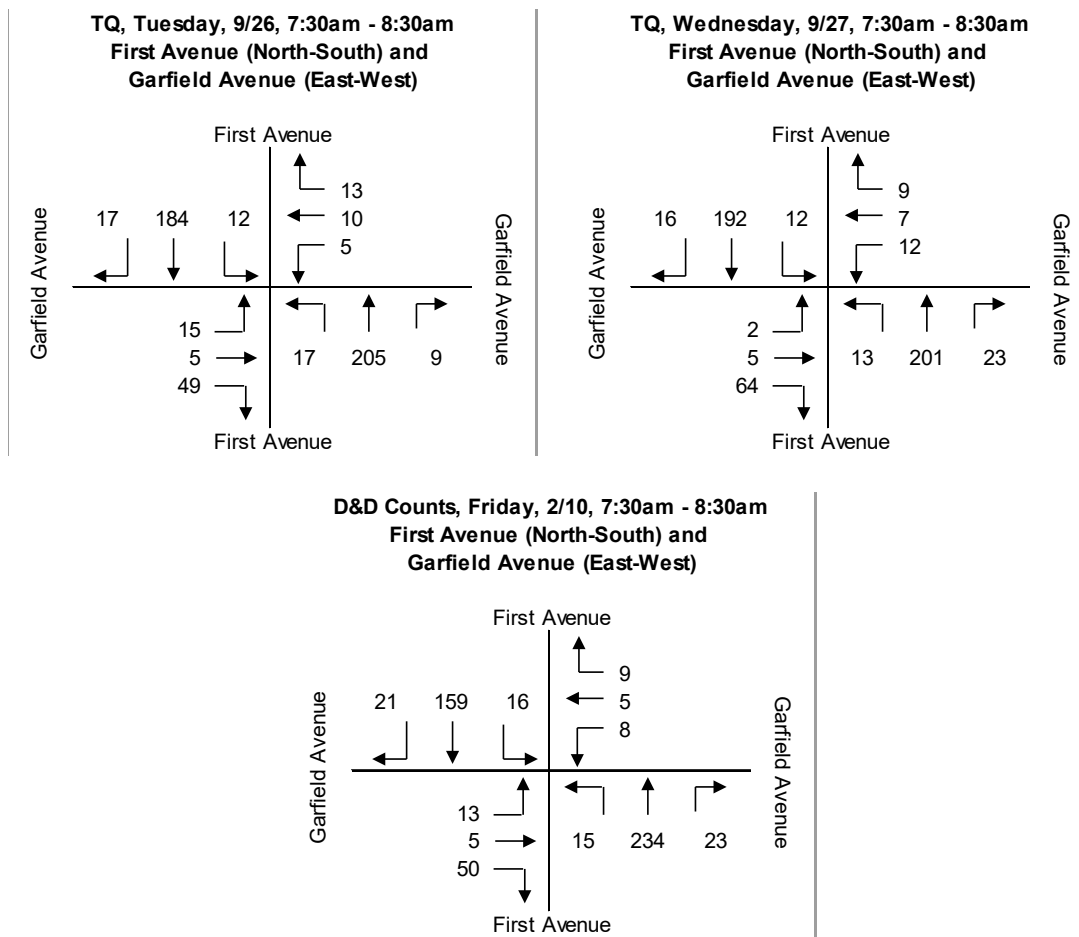


Figure 1 – Weekday AM Turning Movement Count Data Comparison



Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 4

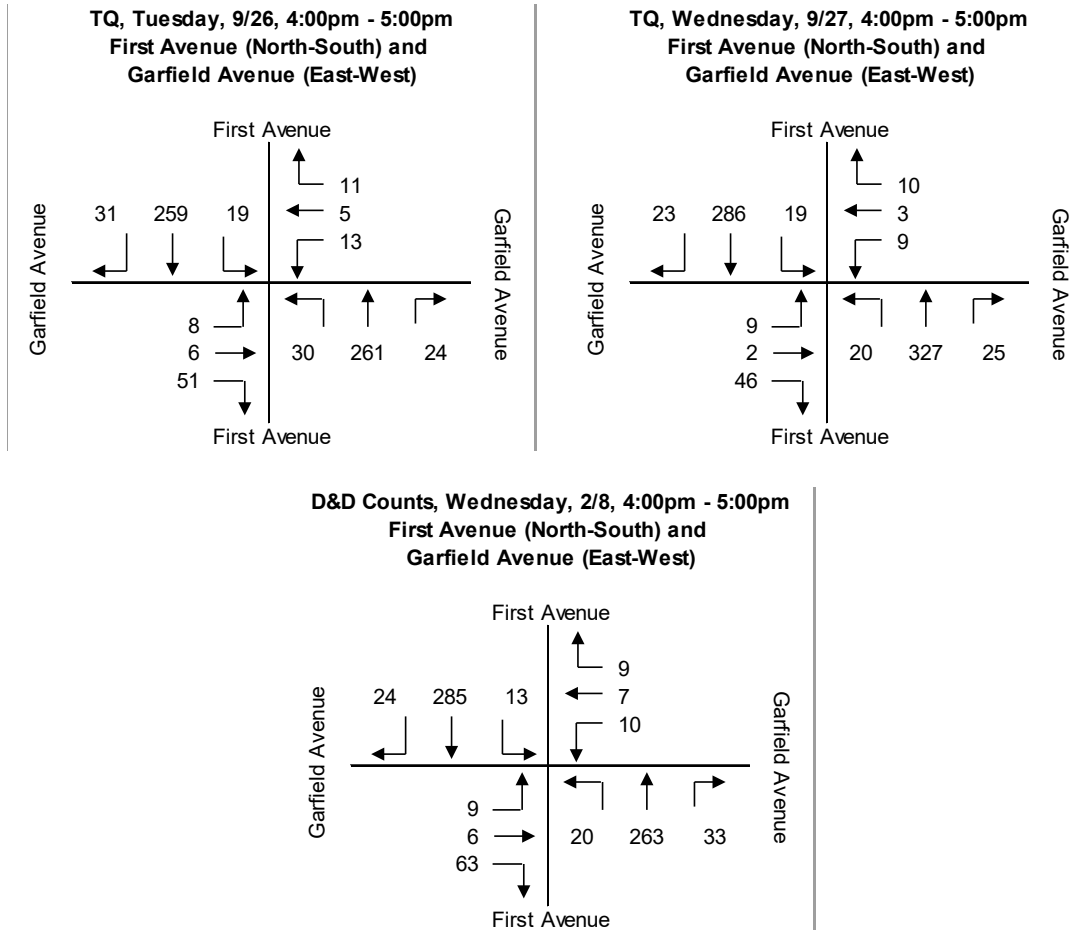


Figure 2 – Weekday PM Turning Movement Count Data Comparison



Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 5

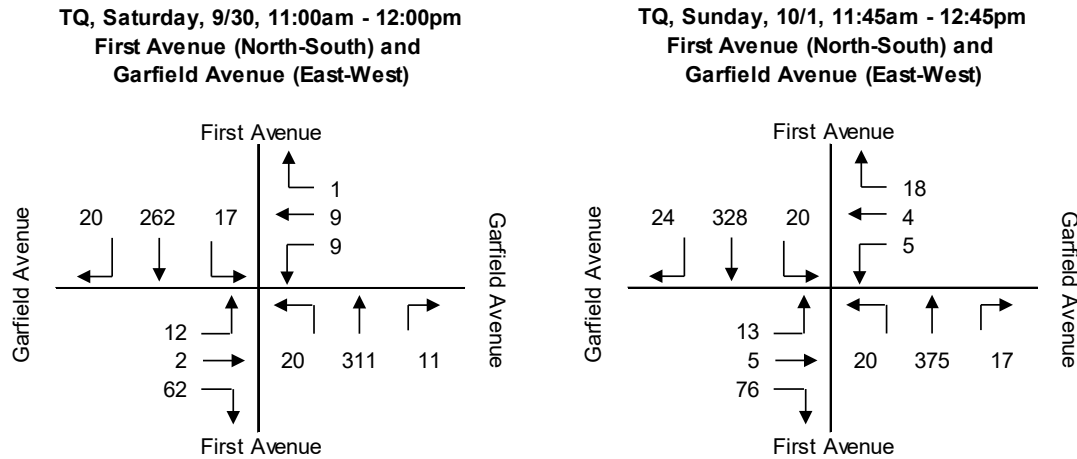


Figure 3 – Saturday (Left) and Sunday (Right) Turning Movement Count Data Comparison

It should be noted that the Applicant did not count weekends. Based on our review of the traffic counts, the traffic data we collected was the highest on Sunday and Wednesday PM, based on utilizing the same peak street hour the Applicant’s Engineer utilized, and both are higher than any of the AM Peak Hour Data collected.

It should be noted that there are higher traffic volume counts in other peak hours of the data we collected due to the nearby ferry schedule. Our review of the ferry schedules indicated that the ferry services operated at approximately the same times during the AM and Peak Hours in the winter and the fall of 2023.

With regard to Sunday traffic volumes being higher than Saturday or the weekday, we reviewed the calendar and made inquiries with the Borough. No special events took place on Sunday, October 1, to the best of our knowledge.

We utilized Sunday and Wednesday PM Peak Periods as the basis for our existing traffic volumes. Copies of the traffic count data we obtained are in the Appendix.

**Site Generated Traffic**

Site generated traffic has been calculated for the proposed 1,413 SF of retail and 30 apartments utilizing data published by the Institute of Transportation Engineers *Trip Generation Manual*, 11<sup>th</sup> Edition for Land Use Code 822 – Strip Retail Plaza and Land Use Code 220 – Multifamily Housing Low-Rise. As previously indicated, the Applicant’s Engineer submitted updated plans that depict



Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 6

a smaller retail space and a smaller number of apartments and that this independent traffic study is therefore conservative. These trip generation calculations are summarized below in Table 1.

Proposed		In	Out	Total
1413 SF Retail, LUC 822	AM	5	3	<b>8</b>
30 Apartments, LUC 220	AM	3	9	<b>12</b>
	<b>AM Total</b>	<b>8</b>	<b>12</b>	<b>20</b>
1413 SF Retail, LUC 822	PM	10	9	<b>19</b>
30 Apartments, LUC 220	PM	10	5	<b>15</b>
	<b>PM Total</b>	<b>20</b>	<b>14</b>	<b>34</b>
1413 SF Retail, LUC 822	Sun	5	4	<b>9</b>
30 Apartments, LUC 220	Sun	5	6	<b>11</b>
	<b>Sun Total</b>	<b>10</b>	<b>10</b>	<b>20</b>

Table 1 – Trip Generation for the Proposed Development

It should be noted that our trip generation calculations matched the Applicant’s Trip Generation Calculations for the weekday AM and PM Peak Hours. For the Sunday Peak Hour, Saturday Trip Generation Rates were used for the Retail as there was no Sunday data available.

The Applicant’s Engineer performed a count of the existing trips for the existing businesses on the property in question for the purposes of establishing that the trip generation for the proposed development is less than the existing trip generation. We performed a similar count and compared the results in Table 2.

Existing		Applicant			CME		
		In	Out	Total	In	Out	Total
Convenience Store and Liquor Store	AM	36	34	<b>70</b>	31	31	<b>62</b>
	PM	20	20	<b>40</b>	26	26	<b>52</b>

Table 2 – Existing Trips on the Site

It should be noted that the Applicant’s Existing Trip Data was higher in the AM Peak Hour and our existing trip data was higher in the PM peak hour, but both sets of existing trip data are higher than the trip generation for the proposed development.



Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 7

The site-generated trips were distributed to the roadway network using the existing traffic distributions as shown in Figures 4 and 5.

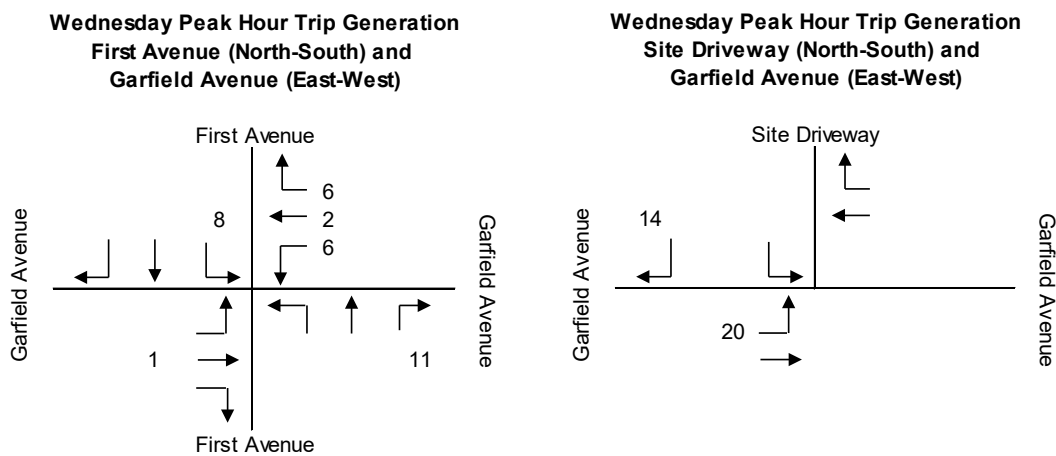


Figure 4 – Wednesday Peak Hour Trip Generation

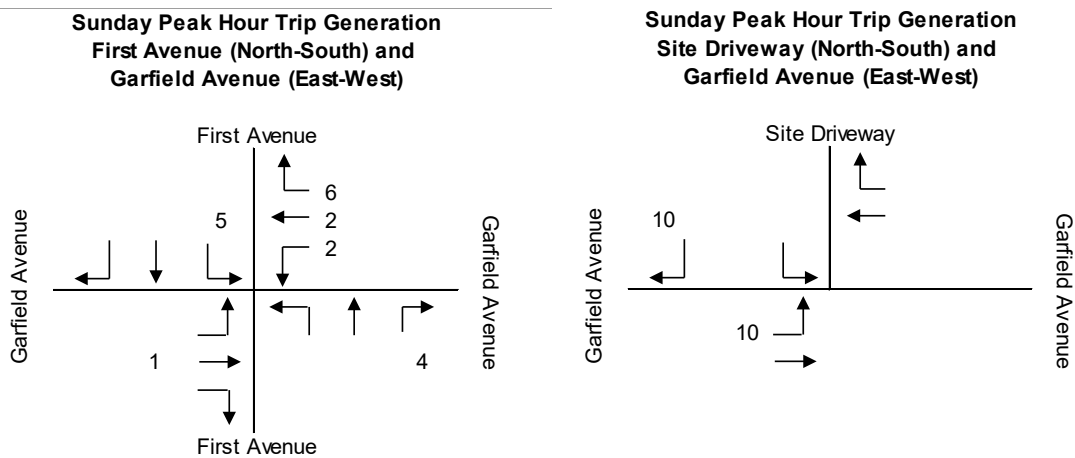


Figure 5 – Sunday Peak Hour Trip Generation



Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 8

**Future 2025 Traffic Volumes**

Future 2025 base traffic volumes were projected by applying an annual growth rate of 2.5% to the traffic volumes along First Avenue and an annual growth rate of 1% to the traffic volumes along W. Garfield Avenue / E. Garfield Avenue as per the NJDOT Annual Background Growth Rate Table. As there are no known adjacent developments at this time, the future 2025 base traffic volumes are the basis for the No-Build traffic volumes shown in Figures 6 and 7.

**Wednesday PM No-Build Traffic Volumes  
 First Avenue (North-South) and  
 Garfield Avenue (East-West)**

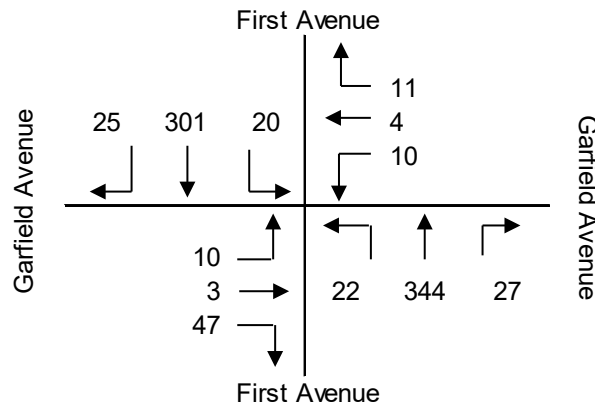


Figure 6 – Wednesday PM No-Build Traffic Volumes





Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 9

**Sunday No-Build Traffic Volumes  
 First Avenue (North-South) and  
 Garfield Avenue (East-West)**

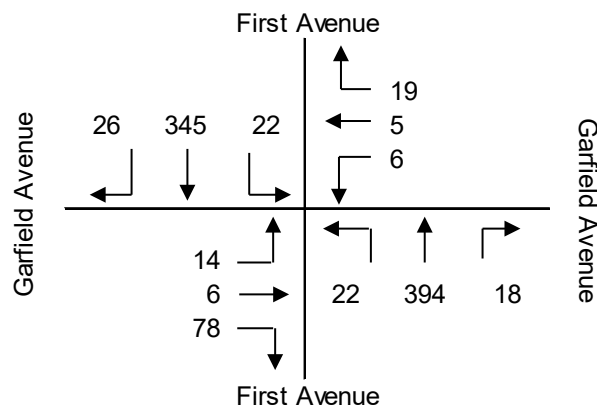


Figure 7 – Sunday No-Build Traffic Volumes

Site-Generated Traffic Volumes from the proposed development were added to the No-Build Traffic Volumes to project the Future 2025 Build Traffic Volumes. Future 2025 Wednesday PM and Sunday Build Traffic Volumes are shown in Figures 8 and 9.



Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 10

**Wednesday PM Build Traffic Volumes  
 First Avenue (North-South) and  
 Garfield Avenue (East-West)**

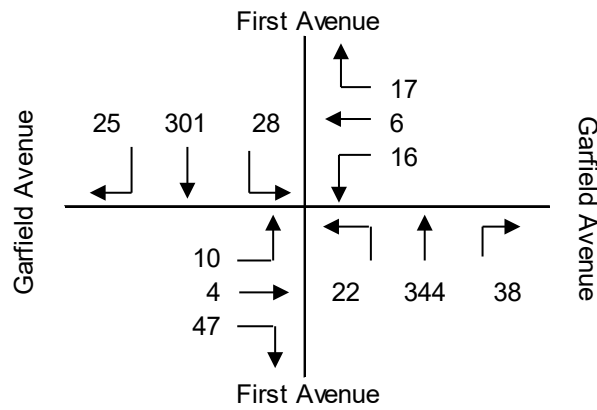


Figure 8 – Wednesday PM Build Traffic Volumes

**Sunday Build Traffic Volumes  
 First Avenue (North-South) and  
 Garfield Avenue (East-West)**

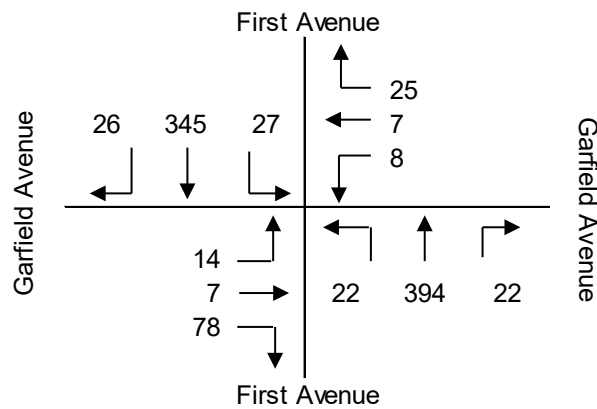


Figure 9 – Sunday Build Traffic Volumes



Members of the Planning Board  
 Borough of Atlantic Highlands  
 Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
 Our File No. HAHP0101.03  
 Page 11

**Future 2025 Traffic Conditions**

Future 2025 No-Build and Build Delays and Levels of Service were calculated in this independent traffic study for the study area intersections based on analysis procedures from the current Highway Capacity Manual published by the Transportation Research Board. Levels of Service are calculated based on average vehicular delay and range from A, the highest or best Level of Service to F, the lowest or worst Level of Service. Tables 3 and 4 provide a summary of the Delays and Levels of Service for the No-Build and Build conditions to indicate the expected impact of the proposed development during the Wednesday PM and Sunday Peak Hours. Copies of the Delay and Level of Service Capacity worksheet are provided in the Appendix.

		2025 PM No-Build Conditions		2025 Sunday No-Build Conditions		2025 PM Build Conditions		2025 Sunday Build Conditions	
Location	Movement	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
First Avenue (N/S) and W. Garfield Ave. /	EB Left/Through/Right	b	12.8	b	14.7	b	13.2	b	15.0
	WB Left/Through/Right	c	16.0	c	15.8	c	17.5	c	16.5
E. Garfield Ave. (E/W)	NB Left/Through/Right	a	8.0	a	8.2	a	8.0	a	8.2
	SB Left/Through/Right	a	8.2	a	8.3	a	8.2	a	8.3

Table 3 – No-Build and Build Delays and Levels of Service at the Unsignalized Intersection of First Avenue and W. Garfield Avenue / E. Garfield Avenue

		2025 PM Build Conditions		2025 Sunday Build Conditions	
Location	Movement	LOS	Delay (s)	LOS	Delay (s)
Site Driveway (N/S) and E. Garfield Ave. (E/W)	EB Left/Through	a	7.3	a	7.3
	WB Through/Right	-	-	-	-
	SB Left/Right	a	8.5	a	8.5

Table 4 – Build Delays and Levels of Service at the Unsignalized Intersection of Site Driveway and E. Garfield Avenue

It should be noted that the Applicant’s Traffic Study did not contain any capacity analyses to compare. However, it appears that the Delays and Levels of Service will be acceptable under the No-Build and Build conditions as each approach will be Level of Service c or better.

It should be noted that we mentioned earlier in this report that our review of the traffic counts indicated that there are higher existing volumes in other hours of the data collected due to the



Members of the Planning Board  
Borough of Atlantic Highlands  
Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
Our File No. HAHP0101.03  
Page 12

nearby ferry schedule. We also evaluated the additional analysis for the actual peak hours of 6:30 am – 7:30am and 5pm – 6pm on Wednesday for the 2025 Build conditions as the Wednesday existing volumes were higher than the Tuesday existing volumes. The Levels of Service for the 2025 Build Conditions under the actual peak hours were also Level of Service c or better for all approaches at both intersections. Those analyses are also attached in the Appendix.

### **Conclusions**

Based on a review of the Applicant's Plans last revised September 25, 2023 and the Traffic Study last revised August 29, 2023 as well as our own independent traffic study, CME offers the following findings with respect to the traffic impact of the proposed 1,413 SF of retail space and 30 apartments:

1. The most recently submitted site plans on September 25, 2023 indicate that 870 square feet of retail and 25 apartments are proposed, which are both lower than the proposed development discussed in this report and therefore, making this report a conservative traffic report.
2. Traffic Data collected by TechniQuest as a subconsultant to CME Associates collected in September and October 2023 depicts higher traffic volumes in the Wednesday PM Peak Hour and the Sunday Peak Hour than the data collected by the Applicant's Engineer in the same time periods, and both are higher than any of the AM Peak Hour data collected. The Wednesday PM Peak Hour Period and the Sunday Peak Hour Period collected by TechniQuest was utilized by CME in the analysis.
3. The Applicant's traffic study and this independent traffic study are both based on ITE Land Use Code 822 – Strip Retail Plaza and ITE Land Use Code 220 – Multifamily Housing (Low-Rise) to produce site-generated traffic estimates. Both sets of trip generation calculations are matched and no differences were detected.
4. The analysis shows acceptable Delays and Levels of Service under No-Build and Build Traffic conditions for the intersections of First Avenue and W. Garfield Avenue / E. Garfield Avenue and E. Garfield Avenue and the proposed site driveway.
5. The traffic counts collected by TechniQuest indicated higher hours of existing traffic volumes related to the ferry schedules compared to the Applicant's Peak Hour. We evaluated the additional time periods utilizing the Wednesday Peak Hours and the analyses anticipate a Level of Service c or better for all approaches at the unsignalized intersection of First Avenue and W. Garfield Avenue / E. Garfield Avenue and the unsignalized intersection of E. Garfield Avenue and the proposed site driveway under the 2025 Build Conditions.



Members of the Planning Board  
Borough of Atlantic Highlands  
Re: Independent Traffic Study for the 160 First Avenue Application

November 20, 2023  
Our File No. HAHP0101.03  
Page 13

If you have any questions or concerns please do not hesitate to contact our office.

Sincerely,  
**CME ASSOCIATES**

Kevin E. Chen, P.E., PTOE  
Planning Board Traffic Engineer

Enclosures

cc: Michael B. Steib, Esq., Planning Board Attorney  
Douglas Rohmeyer, P.E., C.M.E., C.F.M., Planning Board Engineer  
Andrew Thomas, P.P., Planning Board Planner



# **TECHNICAL APPENDIX**

**FOR THE INDEPENDENT TRAFFIC STUDY OF THE**

## **160 First Avenue Development Application**

- **Study Area Map**
- **Manual Turning Movement Traffic Counts**
- **Synchro Capacity Analyses**
- **Ferry Schedules**
- **NJDOT Straight Line Diagrams**
- **NJDOT Background Growth Rates**

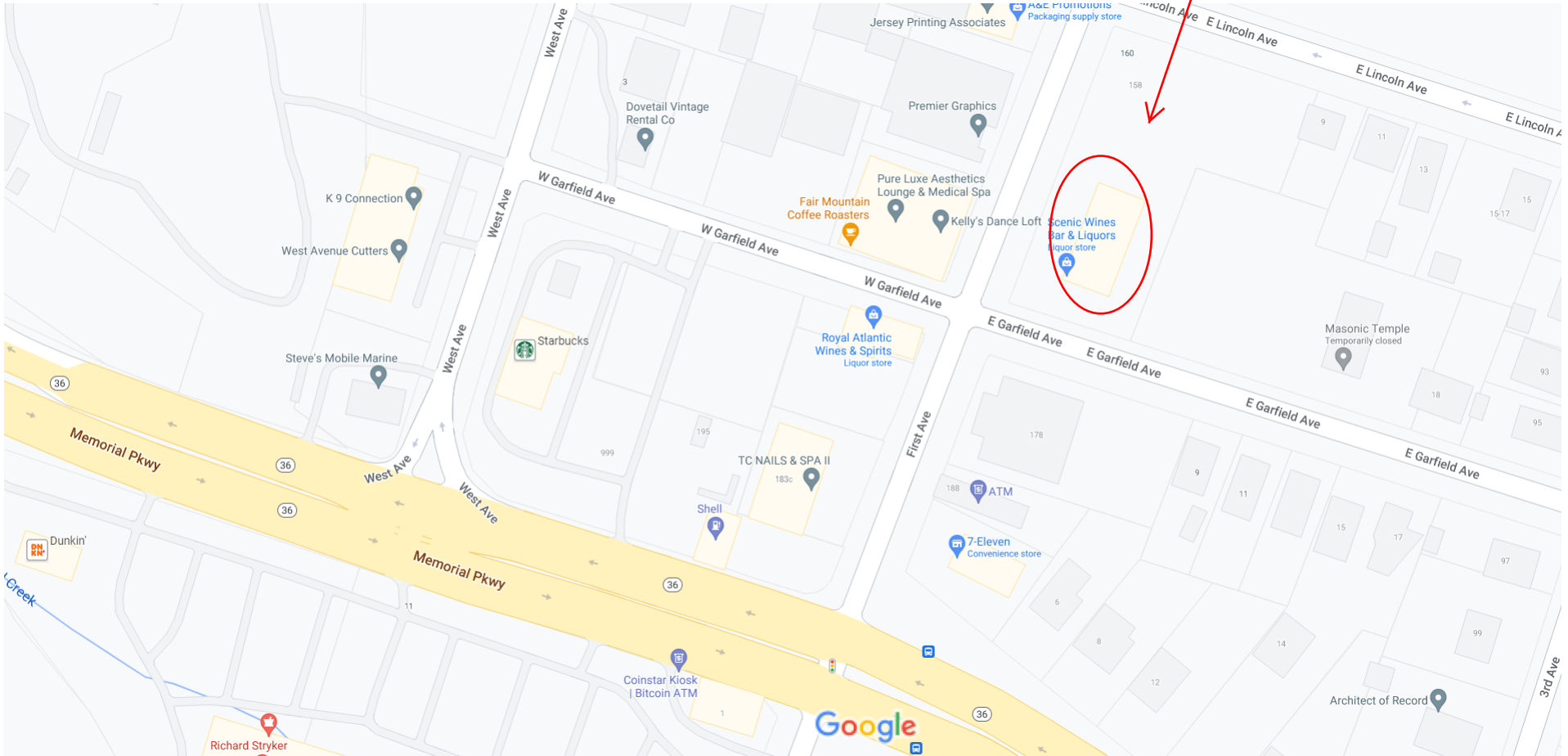


## **Study Area Map**

**For**

**The Independent Traffic Study of the 160 First Avenue  
Development Application**

160 First Avenue Site







# **Manual Turning Movement Traffic Counts**

**For**

**The Independent Traffic Study of the 160 First Avenue  
Development Application**

# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

Intersection of First Ave & Garfield Ave  
 Atlantic Highlands Boro, Monmouth Co, NJ  
 6:00am - 10:00am & 3:00pm - 7:00pm  
 Lat: 40.410272, Long: -74.039563

File Name : TMC 02\_Tue  
 Site Code : 23T1-040-02-Tue  
 Start Date : 9/26/2023  
 Page No : 1

Groups Printed- Cars - Medium Trucks - Heavy Trucks - Pedestrians

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:00 AM	0	0	0	0	0	0	17	1	0	18	0	1	0	0	1	0	18	0	0	18	37
06:15 AM	1	0	2	0	3	2	20	0	1	23	1	0	0	0	1	3	28	1	0	32	59
06:30 AM	0	0	5	0	5	1	22	4	1	28	1	2	2	0	5	0	131	3	0	134	172
06:45 AM	1	2	8	0	11	0	28	7	0	35	1	2	0	0	3	3	141	0	0	144	193
Total	2	2	15	0	19	3	87	12	2	104	3	5	2	0	10	6	318	4	0	328	461
07:00 AM	3	1	10	2	16	1	29	1	2	33	5	1	0	0	6	1	131	0	1	133	188
07:15 AM	1	0	14	0	15	0	57	7	1	65	2	3	3	0	8	2	140	1	1	144	232
07:30 AM	4	0	14	0	18	1	51	5	0	57	1	0	3	0	4	3	39	1	1	44	123
07:45 AM	2	1	9	1	13	3	30	3	2	38	1	3	3	0	7	2	46	2	0	50	108
Total	10	2	47	3	62	5	167	16	5	193	9	7	9	0	25	8	356	4	3	371	651
08:00 AM	4	3	11	0	18	5	44	6	1	56	0	5	3	0	8	3	51	4	2	60	142
08:15 AM	5	1	15	0	21	3	59	3	1	66	3	2	4	0	9	9	69	2	2	82	178
08:30 AM	1	0	17	1	19	3	39	8	0	50	1	0	0	0	1	4	81	2	1	88	158
08:45 AM	3	0	17	1	21	1	53	4	0	58	0	2	3	0	5	5	160	3	2	170	254
Total	13	4	60	2	79	12	195	21	2	230	4	9	10	0	23	21	361	11	7	400	732
09:00 AM	3	0	14	0	17	1	52	3	0	56	4	3	2	0	9	2	75	3	1	81	163
09:15 AM	1	1	16	0	18	2	42	4	0	48	1	1	1	0	3	6	58	4	0	68	137
09:30 AM	1	0	11	1	13	2	50	7	1	60	2	0	2	0	4	3	52	1	2	58	135
09:45 AM	1	1	6	1	9	1	47	3	1	52	1	2	0	0	3	4	60	2	0	66	130
Total	6	2	47	2	57	6	191	17	2	216	8	6	5	0	19	15	245	10	3	273	565
03:00 PM	2	2	15	5	24	7	72	7	6	92	3	4	6	0	13	3	54	5	3	65	194
03:15 PM	0	2	19	0	21	3	42	4	4	53	3	3	4	0	10	5	74	5	7	91	175
03:30 PM	0	1	11	0	12	8	55	5	0	68	1	0	6	0	7	4	76	8	2	90	177
03:45 PM	3	3	20	3	29	6	59	5	0	70	2	1	4	3	10	9	73	6	0	88	197
Total	5	8	65	8	86	24	228	21	10	283	9	8	20	3	40	21	277	24	12	334	743
04:00 PM	2	2	15	2	21	1	94	8	3	106	4	0	8	0	12	9	62	5	0	76	215
04:15 PM	3	0	13	5	21	7	61	12	1	81	2	0	5	0	7	4	71	5	2	82	191
04:30 PM	2	2	12	0	16	4	63	5	2	74	3	1	2	0	6	6	69	9	1	85	181

# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

File Name : TMC 02\_Tue  
 Site Code : 23T1-040-02-Tue  
 Start Date : 9/26/2023  
 Page No : 2

Groups Printed- Cars - Medium Trucks - Heavy Trucks - Pedestrians

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:45 PM	1	2	11	4	18	7	41	6	2	56	0	1	4	2	7	11	59	5	5	80	161
Total	8	6	51	11	76	19	259	31	8	317	9	2	19	2	32	30	261	24	8	323	748
05:00 PM	0	1	19	0	20	1	107	5	0	113	3	2	6	3	14	3	70	12	4	89	236
05:15 PM	2	2	12	0	16	5	58	6	1	70	4	0	0	0	4	3	89	5	0	97	187
05:30 PM	1	1	15	3	20	4	86	4	1	95	3	2	3	0	8	6	59	7	0	72	195
05:45 PM	1	2	11	0	14	2	46	7	0	55	3	1	2	0	6	5	77	6	0	88	163
Total	4	6	57	3	70	12	297	22	2	333	13	5	11	3	32	17	295	30	4	346	781
06:00 PM	1	1	18	0	20	6	54	7	0	67	2	4	0	0	6	7	85	6	0	98	191
06:15 PM	1	1	14	1	17	4	113	2	0	119	4	1	4	0	9	6	59	7	0	72	217
06:30 PM	1	4	8	1	14	7	61	2	4	74	2	1	2	0	5	10	59	2	1	72	165
06:45 PM	3	0	9	0	12	1	53	4	1	59	1	0	0	0	1	1	72	4	3	80	152
Total	6	6	49	2	63	18	281	15	5	319	9	6	6	0	21	24	275	19	4	322	725
Grand Total	54	36	391	31	512	99	1705	155	36	1995	64	48	82	8	202	142	2388	126	41	2697	5406
Aprch %	10.5	7	76.4	6.1		5	85.5	7.8	1.8		31.7	23.8	40.6	4		5.3	88.5	4.7	1.5		
Total %	1	0.7	7.2	0.6	9.5	1.8	31.5	2.9	0.7	36.9	1.2	0.9	1.5	0.1	3.7	2.6	44.2	2.3	0.8	49.9	
Cars	53	34	375	0	462	96	1662	153	0	1911	63	47	81	0	191	137	2336	125	0	2598	5162
% Cars	98.1	94.4	95.9	0	90.2	97	97.5	98.7	0	95.8	98.4	97.9	98.8	0	94.6	96.5	97.8	99.2	0	96.3	95.5
Medium Trucks	1	2	15	0	18	2	39	2	0	43	1	1	1	0	3	5	50	1	0	56	120
% Medium Trucks	1.9	5.6	3.8	0	3.5	2	2.3	1.3	0	2.2	1.6	2.1	1.2	0	1.5	3.5	2.1	0.8	0	2.1	2.2
Heavy Trucks	0	0	1	0	1	1	4	0	0	5	0	0	0	0	0	0	2	0	0	2	8
% Heavy Trucks	0	0	0.3	0	0.2	1	0.2	0	0	0.3	0	0	0	0	0	0	0.1	0	0	0.1	0.1
Pedestrians	0	0	0	31	31	0	0	0	36	36	0	0	0	8	8	0	0	0	41	41	116
% Pedestrians	0	0	0	100	6.1	0	0	0	100	1.8	0	0	0	100	4	0	0	0	100	1.5	2.1

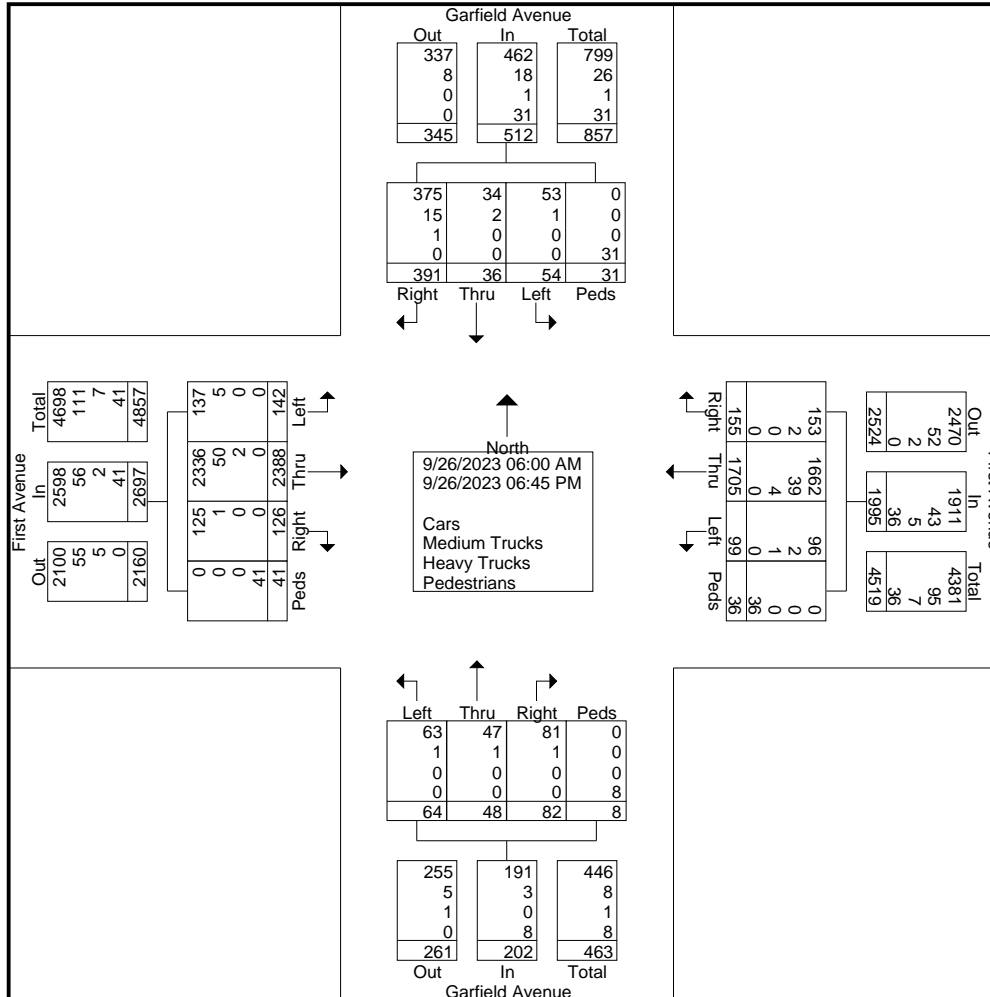
# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

File Name : TMC 02\_Tue  
 Site Code : 23T1-040-02-Tue  
 Start Date : 9/26/2023  
 Page No : 3



# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

File Name : TMC 02\_Tue  
 Site Code : 23T1-040-02-Tue  
 Start Date : 9/26/2023  
 Page No : 4

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
06:30 AM	0	0	5	0	5	1	22	4	1	28	1	2	2	0	5	0	131	3	0	134	172
06:45 AM	1	2	8	0	11	0	28	7	0	35	1	2	0	0	3	3	141	0	0	144	193
07:00 AM	3	1	10	2	16	1	29	1	2	33	5	1	0	0	6	1	131	0	1	133	188
07:15 AM	1	0	14	0	15	0	57	7	1	65	2	3	3	0	8	2	140	1	1	144	232
Total Volume	5	3	37	2	47	2	136	19	4	161	9	8	5	0	22	6	543	4	2	555	785
% App. Total	10.6	6.4	78.7	4.3		1.2	84.5	11.8	2.5		40.9	36.4	22.7	0		1.1	97.8	0.7	0.4		
PHF	.417	.375	.661	.250	.734	.500	.596	.679	.500	.619	.450	.667	.417	.000	.688	.500	.963	.333	.500	.964	.846

Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	3	3	20	3	29	6	59	5	0	70	2	1	4	3	10	9	73	6	0	88	197
04:00 PM	2	2	15	2	21	1	94	8	3	106	4	0	8	0	12	9	62	5	0	76	215
04:15 PM	3	0	13	5	21	7	61	12	1	81	2	0	5	0	7	4	71	5	2	82	191
04:30 PM	2	2	12	0	16	4	63	5	2	74	3	1	2	0	6	6	69	9	1	85	181
Total Volume	10	7	60	10	87	18	277	30	6	331	11	2	19	3	35	28	275	25	3	331	784
% App. Total	11.5	8	69	11.5		5.4	83.7	9.1	1.8		31.4	5.7	54.3	8.6		8.5	83.1	7.6	0.9		
PHF	.833	.583	.750	.500	.750	.643	.737	.625	.500	.781	.688	.500	.594	.250	.729	.778	.942	.694	.375	.940	.912

# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

Intersection of First Ave & Garfield Ave  
 Atlantic Highlands Boro, Monmouth Co, NJ  
 6:00am - 10:00am & 3:00pm - 7:00pm  
 Lat: 40.410272, Long: -74.039563

File Name : TMC 02\_Wed  
 Site Code : 23T1-040-02-Wed  
 Start Date : 9/27/2023  
 Page No : 1

Groups Printed- Cars - Medium Trucks - Heavy Trucks - Pedestrians

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:00 AM	0	1	1	0	2	1	17	0	0	18	0	0	0	0	0	1	17	0	0	18	38
06:15 AM	2	0	4	0	6	0	16	1	1	18	0	0	1	0	1	5	23	0	1	29	54
06:30 AM	1	0	7	0	8	0	21	3	2	26	0	3	0	0	3	0	156	0	0	156	193
06:45 AM	4	1	9	0	14	1	40	3	0	44	3	2	1	0	6	2	129	2	1	134	198
Total	7	2	21	0	30	2	94	7	3	106	3	5	2	0	10	8	325	2	2	337	483
07:00 AM	3	0	10	1	14	0	31	5	1	37	1	1	1	1	4	1	142	3	0	146	201
07:15 AM	1	0	13	0	14	1	61	8	0	70	3	2	5	0	10	3	172	3	0	178	272
07:30 AM	0	0	15	0	15	1	47	6	0	54	3	2	0	0	5	4	35	0	1	40	114
07:45 AM	0	1	7	1	9	1	32	2	0	35	1	2	2	1	6	3	43	10	1	57	107
Total	4	1	45	2	52	3	171	21	1	196	8	7	8	2	25	11	392	16	2	421	694
08:00 AM	1	3	14	0	18	6	44	5	0	55	4	2	4	3	13	4	56	6	1	67	153
08:15 AM	1	1	28	2	32	4	69	3	1	77	4	1	3	0	8	2	67	7	4	80	197
08:30 AM	4	1	14	1	20	4	39	6	0	49	4	1	0	0	5	3	94	2	0	99	173
08:45 AM	5	0	14	2	21	3	39	7	0	49	2	0	8	0	10	4	171	5	1	181	261
Total	11	5	70	5	91	17	191	21	1	230	14	4	15	3	36	13	388	20	6	427	784
09:00 AM	1	2	22	1	26	2	61	1	1	65	4	1	3	0	8	5	88	6	0	99	198
09:15 AM	2	0	18	1	21	2	56	5	1	64	2	2	3	0	7	2	58	2	0	62	154
09:30 AM	1	0	13	2	16	7	44	3	0	54	4	0	0	0	4	4	67	4	1	76	150
09:45 AM	0	0	14	2	16	5	51	3	1	60	4	2	1	0	7	7	67	4	0	78	161
Total	4	2	67	6	79	16	212	12	3	243	14	5	7	0	26	18	280	16	1	315	663
03:00 PM	1	1	19	3	24	6	64	5	5	80	5	3	2	0	10	9	71	8	5	93	207
03:15 PM	3	1	15	0	19	0	68	5	2	75	1	0	5	1	7	7	75	7	1	90	191
03:30 PM	5	2	10	0	17	1	64	5	0	70	1	2	2	0	5	5	84	4	0	93	185
03:45 PM	4	0	12	1	17	6	56	6	2	70	1	1	1	1	4	12	108	8	1	129	220
Total	13	4	56	4	77	13	252	21	9	295	8	6	10	2	26	33	338	27	7	405	803
04:00 PM	1	1	8	3	13	4	89	5	5	103	4	2	2	0	8	5	71	9	8	93	217
04:15 PM	6	0	15	0	21	2	68	10	2	82	2	0	4	0	6	7	93	6	3	109	218
04:30 PM	0	1	13	0	14	5	68	3	4	80	0	1	3	0	4	4	85	5	11	105	203

# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquescorporation.com](http://www.techniquescorporation.com)

File Name : TMC 02\_Wed  
 Site Code : 23T1-040-02-Wed  
 Start Date : 9/27/2023  
 Page No : 2

Groups Printed- Cars - Medium Trucks - Heavy Trucks - Pedestrians

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:45 PM	2	0	10	0	12	8	61	5	3	77	3	0	1	0	4	4	78	5	11	98	191
Total	9	2	46	3	60	19	286	23	14	342	9	3	10	0	22	20	327	25	33	405	829
05:00 PM	3	3	21	0	27	3	116	7	0	126	6	0	2	0	8	8	83	6	2	99	260
05:15 PM	1	1	12	0	14	3	82	6	0	91	4	2	2	2	10	4	72	12	7	95	210
05:30 PM	4	1	18	2	25	3	89	6	4	102	4	2	4	0	10	12	83	11	3	109	246
05:45 PM	1	1	10	0	12	2	71	8	2	83	2	2	2	0	6	5	88	9	2	104	205
Total	9	6	61	2	78	11	358	27	6	402	16	6	10	2	34	29	326	38	14	407	921
06:00 PM	0	1	10	0	11	6	68	3	0	77	3	2	1	0	6	8	78	19	2	107	201
06:15 PM	1	2	23	3	29	0	105	5	2	112	4	1	2	0	7	6	89	9	3	107	255
06:30 PM	3	1	17	1	22	3	75	1	6	85	4	4	1	2	11	4	60	9	2	75	193
06:45 PM	1	2	7	0	10	2	66	3	1	72	1	1	2	1	5	6	78	7	0	91	178
Total	5	6	57	4	72	11	314	12	9	346	12	8	6	3	29	24	305	44	7	380	827
Grand Total	62	28	423	26	539	92	1878	144	46	2160	84	44	68	12	208	156	2681	188	72	3097	6004
Aprch %	11.5	5.2	78.5	4.8		4.3	86.9	6.7	2.1		40.4	21.2	32.7	5.8		5	86.6	6.1	2.3		
Total %	1	0.5	7	0.4	9	1.5	31.3	2.4	0.8	36	1.4	0.7	1.1	0.2	3.5	2.6	44.7	3.1	1.2	51.6	
Cars	61	26	409	0	496	90	1832	141	0	2063	80	44	68	0	192	148	2626	184	0	2958	5709
% Cars	98.4	92.9	96.7	0	92	97.8	97.6	97.9	0	95.5	95.2	100	100	0	92.3	94.9	97.9	97.9	0	95.5	95.1
Medium Trucks	1	2	14	0	17	2	44	3	0	49	4	0	0	0	4	6	53	2	0	61	131
% Medium Trucks	1.6	7.1	3.3	0	3.2	2.2	2.3	2.1	0	2.3	4.8	0	0	1.9	3.8	2	1.1	0	0	2	2.2
Heavy Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	2	2	0	6	8
% Heavy Trucks	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	1.3	0.1	1.1	0	0.2	0.1
Pedestrians	0	0	0	26	26	0	0	0	46	46	0	0	0	12	12	0	0	0	72	72	156
% Pedestrians	0	0	0	100	4.8	0	0	0	100	2.1	0	0	0	100	5.8	0	0	0	100	2.3	2.6

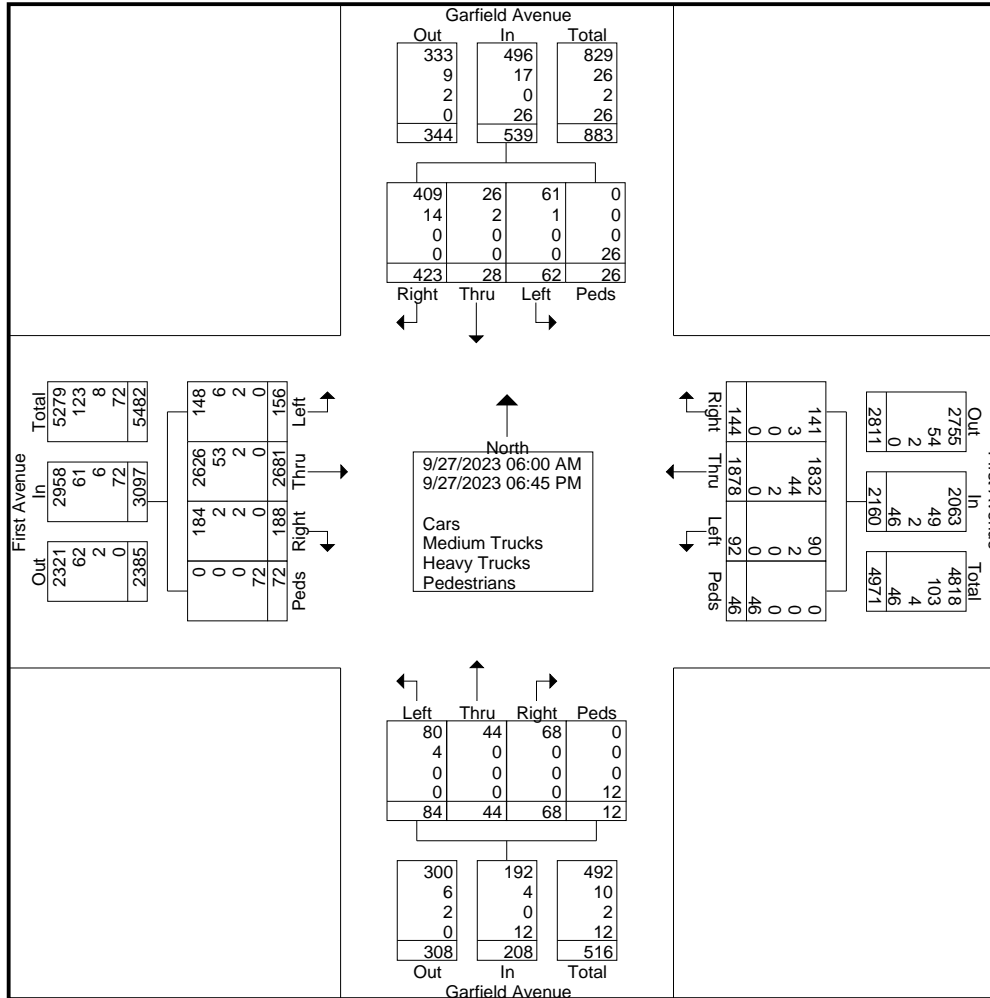
# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

File Name : TMC 02\_Wed  
 Site Code : 23T1-040-02-Wed  
 Start Date : 9/27/2023  
 Page No : 3





# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquescorporation.com](http://www.techniquescorporation.com)

File Name : TMC 02\_Wed  
 Site Code : 23T1-040-02-Wed  
 Start Date : 9/27/2023  
 Page No : 4

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
06:30 AM	1	0	7	0	8	0	21	3	2	26	0	3	0	0	3	0	156	0	0	156	193
06:45 AM	4	1	9	0	14	1	40	3	0	44	3	2	1	0	6	2	129	2	1	134	198
07:00 AM	3	0	10	1	14	0	31	5	1	37	1	1	1	1	4	1	142	3	0	146	201
07:15 AM	1	0	13	0	14	1	61	8	0	70	3	2	5	0	10	3	172	3	0	178	272
Total Volume	9	1	39	1	50	2	153	19	3	177	7	8	7	1	23	6	599	8	1	614	864
% App. Total	18	2	78	2		1.1	86.4	10.7	1.7		30.4	34.8	30.4	4.3		1	97.6	1.3	0.2		
PHF	.563	.250	.750	.250	.893	.500	.627	.594	.375	.632	.583	.667	.350	.250	.575	.500	.871	.667	.250	.862	.794

Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	3	3	21	0	27	3	116	7	0	126	6	0	2	0	8	8	83	6	2	99	260
05:15 PM	1	1	12	0	14	3	82	6	0	91	4	2	2	2	10	4	72	12	7	95	210
05:30 PM	4	1	18	2	25	3	89	6	4	102	4	2	4	0	10	12	83	11	3	109	246
05:45 PM	1	1	10	0	12	2	71	8	2	83	2	2	2	0	6	5	88	9	2	104	205
Total Volume	9	6	61	2	78	11	358	27	6	402	16	6	10	2	34	29	326	38	14	407	921
% App. Total	11.5	7.7	78.2	2.6		2.7	89.1	6.7	1.5		47.1	17.6	29.4	5.9		7.1	80.1	9.3	3.4		
PHF	.563	.500	.726	.250	.722	.917	.772	.844	.375	.798	.667	.750	.625	.250	.850	.604	.926	.792	.500	.933	.886

# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

Intersection of First Ave & Garfield Ave  
 Atlantic Highlands Boro, Monmouth Co, NJ  
 Saturday 10:30am - 2:30pm  
 Lat: 40.410272, Long: -74.039563

File Name : TMC 02\_Sat  
 Site Code : 23T1-040-02-SAT  
 Start Date : 9/30/2023  
 Page No : 1

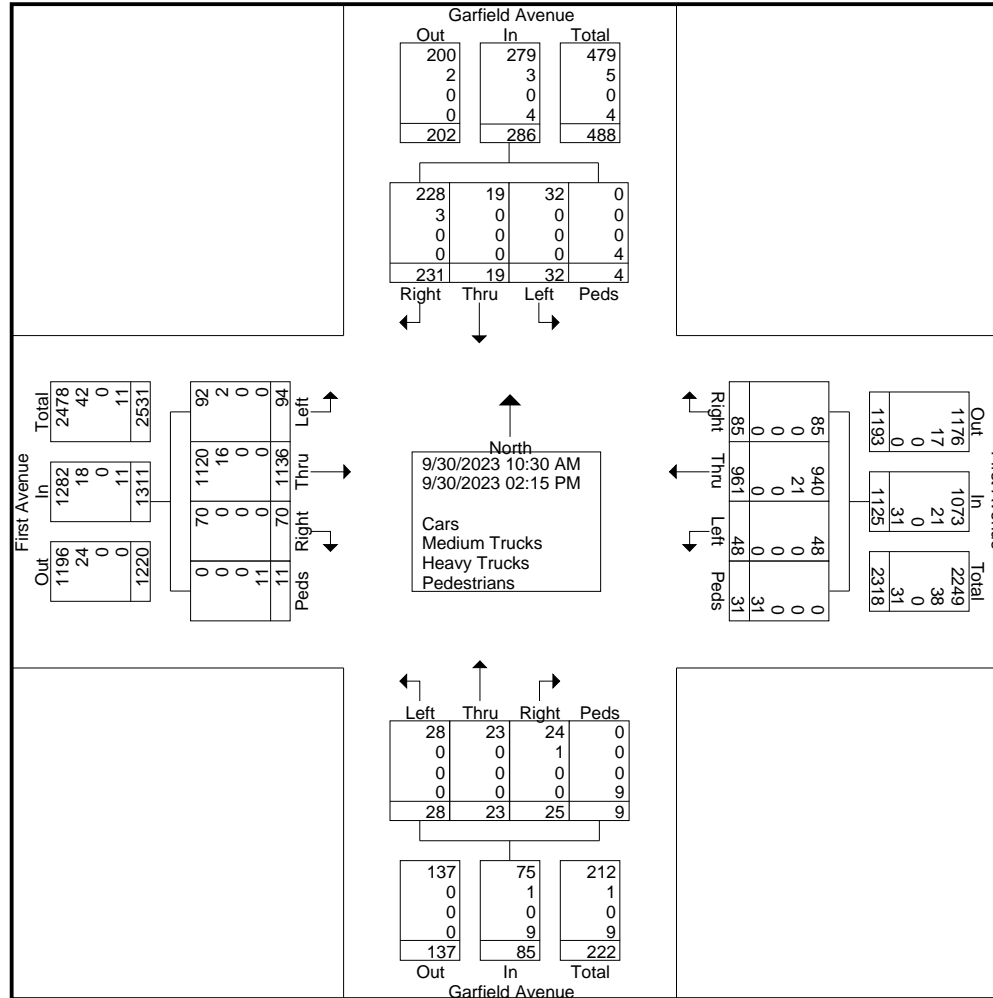
Groups Printed- Cars - Medium Trucks - Heavy Trucks - Pedestrians

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
10:30 AM	3	3	9	0	15	0	65	8	0	73	0	0	1	0	1	5	78	4	3	90	179
10:45 AM	1	4	20	2	27	3	54	5	1	63	1	1	0	1	3	9	74	6	0	89	182
Total	4	7	29	2	42	3	119	13	1	136	1	1	1	1	4	14	152	10	3	179	361
11:00 AM	2	2	12	0	16	6	68	2	3	79	1	3	0	1	5	4	67	3	0	74	174
11:15 AM	3	0	14	0	17	3	62	8	1	74	3	2	0	0	5	7	82	2	0	91	187
11:30 AM	4	0	20	0	24	4	66	4	0	74	3	4	0	0	7	4	81	3	2	90	195
11:45 AM	3	0	16	0	19	4	66	6	2	78	2	0	1	1	4	5	81	3	0	89	190
Total	12	2	62	0	76	17	262	20	6	305	9	9	1	2	21	20	311	11	2	344	746
12:00 PM	1	0	12	0	13	3	57	5	1	66	1	1	0	0	2	5	72	3	0	80	161
12:15 PM	1	0	18	0	19	3	57	6	1	67	0	0	0	0	0	5	59	4	0	68	154
12:30 PM	2	1	7	1	11	1	61	6	1	69	0	1	6	0	7	11	79	5	1	96	183
12:45 PM	2	3	18	0	23	3	65	4	2	74	5	1	4	0	10	6	69	4	0	79	186
Total	6	4	55	1	66	10	240	21	5	276	6	3	10	0	19	27	279	16	1	323	684
01:00 PM	2	2	14	0	18	3	64	6	3	76	0	1	2	0	3	3	74	5	0	82	179
01:15 PM	3	0	12	0	15	2	59	8	1	70	4	1	2	0	7	5	76	3	0	84	176
01:30 PM	2	1	14	0	17	1	54	3	7	65	0	2	2	4	8	7	63	5	1	76	166
01:45 PM	3	1	18	0	22	3	55	4	2	64	2	4	4	0	10	9	69	9	1	88	184
Total	10	4	58	0	72	9	232	21	13	275	6	8	10	4	28	24	282	22	2	330	705
02:00 PM	0	1	13	1	15	8	55	3	5	71	4	2	0	0	6	1	56	7	1	65	157
02:15 PM	0	1	14	0	15	1	53	7	1	62	2	0	3	2	7	8	56	4	2	70	154
Grand Total	32	19	231	4	286	48	961	85	31	1125	28	23	25	9	85	94	1136	70	11	1311	2807
Apprch %	11.2	6.6	80.8	1.4		4.3	85.4	7.6	2.8		32.9	27.1	29.4	10.6		7.2	86.7	5.3	0.8		
Total %	1.1	0.7	8.2	0.1	10.2	1.7	34.2	3	1.1	40.1	1	0.8	0.9	0.3	3	3.3	40.5	2.5	0.4	46.7	
Cars	32	19	228	0	279	48	940	85	0	1073	28	23	24	0	75	92	1120	70	0	1282	2709
% Cars	100	100	98.7	0	97.6	100	97.8	100	0	95.4	100	100	96	0	88.2	97.9	98.6	100	0	97.8	96.5
Medium Trucks	0	0	3	0	3	0	21	0	0	21	0	0	1	0	1	2	16	0	0	18	43
% Medium Trucks	0	0	1.3	0	1	0	2.2	0	0	1.9	0	0	4	0	1.2	2.1	1.4	0	0	1.4	1.5
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	4	4	0	0	0	31	31	0	0	0	9	9	0	0	0	11	11	55
% Pedestrians	0	0	0	100	1.4	0	0	0	100	2.8	0	0	0	100	10.6	0	0	0	100	0.8	2

# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540  
 Phone: 732.274.9500, Fax: 732.274.9510  
[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

File Name : TMC 02\_Sat  
 Site Code : 23T1-040-02-SAT  
 Start Date : 9/30/2023  
 Page No : 2



# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquescorporation.com](http://www.techniquescorporation.com)

File Name : TMC 02\_Sat  
 Site Code : 23T1-040-02-SAT  
 Start Date : 9/30/2023  
 Page No : 3

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 02:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	2	2	12	0	16	6	68	2	3	79	1	3	0	1	5	4	67	3	0	74	174
11:15 AM	3	0	14	0	17	3	62	8	1	74	3	2	0	0	5	7	82	2	0	91	187
11:30 AM	4	0	20	0	24	4	66	4	0	74	3	4	0	0	7	4	81	3	2	90	195
11:45 AM	3	0	16	0	19	4	66	6	2	78	2	0	1	1	4	5	81	3	0	89	190
Total Volume	12	2	62	0	76	17	262	20	6	305	9	9	1	2	21	20	311	11	2	344	746
% App. Total	15.8	2.6	81.6	0		5.6	85.9	6.6	2		42.9	42.9	4.8	9.5		5.8	90.4	3.2	0.6		
PHF	.750	.250	.775	.000	.792	.708	.963	.625	.500	.965	.750	.563	.250	.500	.750	.714	.948	.917	.250	.945	.956

# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

Intersection of First Ave & Garfield Ave  
 Atlantic Highlands Boro, Monmouth Co, NJ  
 Sunday 10:30am - 2:30pm  
 Lat: 40.410272, Long: -74.039563

File Name : TMC 02\_Sun  
 Site Code : 23T1-040-02-SUN  
 Start Date : 10/1/2023  
 Page No : 1

Groups Printed- Cars - Medium Trucks - Heavy Trucks - Pedestrians

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
10:30 AM	2	0	13	0	15	1	47	6	3	57	0	1	5	2	8	2	79	4	0	85	165
10:45 AM	5	2	19	0	26	1	55	5	1	62	3	3	1	0	7	5	95	3	0	103	198
Total	7	2	32	0	41	2	102	11	4	119	3	4	6	2	15	7	174	7	0	188	363
11:00 AM	4	1	8	2	15	6	64	6	2	78	1	2	2	1	6	7	92	6	5	110	209
11:15 AM	6	1	12	0	19	2	71	5	0	78	1	3	3	0	7	6	89	2	0	97	201
11:30 AM	2	2	21	4	29	1	98	10	1	110	1	1	3	0	5	5	76	7	3	91	235
11:45 AM	2	2	14	0	18	7	103	9	1	120	1	3	5	0	9	5	103	2	3	113	260
Total	14	6	55	6	81	16	336	30	4	386	4	9	13	1	27	23	360	17	11	411	905
12:00 PM	1	2	14	0	17	4	78	6	2	90	2	0	5	2	9	1	85	5	6	97	213
12:15 PM	4	0	24	0	28	1	60	4	3	68	0	0	7	0	7	6	96	8	0	110	213
12:30 PM	6	1	24	0	31	8	87	5	10	110	2	1	1	2	6	8	91	2	0	101	248
12:45 PM	2	3	8	1	14	3	84	8	3	98	1	1	3	0	5	3	94	3	7	107	224
Total	13	6	70	1	90	16	309	23	18	366	5	2	16	4	27	18	366	18	13	415	898
01:00 PM	5	0	23	1	29	3	89	9	2	103	2	1	2	0	5	7	92	5	4	108	245
01:15 PM	4	2	15	0	21	2	72	6	5	85	3	0	1	0	4	9	77	5	4	95	205
01:30 PM	4	2	13	2	21	3	67	1	1	72	2	3	0	0	5	3	66	5	7	81	179
01:45 PM	3	0	8	0	11	3	78	5	4	90	2	1	3	2	8	2	63	4	0	69	178
Total	16	4	59	3	82	11	306	21	12	350	9	5	6	2	22	21	298	19	15	353	807
02:00 PM	3	3	11	0	17	2	68	3	3	76	2	1	0	0	3	5	69	3	9	86	182
02:15 PM	6	0	15	0	21	2	73	6	5	86	1	2	1	0	4	3	74	5	7	89	200
Grand Total	59	21	242	10	332	49	1194	94	46	1383	24	23	42	9	98	77	1341	69	55	1542	3355
Apprch %	17.8	6.3	72.9	3		3.5	86.3	6.8	3.3		24.5	23.5	42.9	9.2		5	87	4.5	3.6		
Total %	1.8	0.6	7.2	0.3	9.9	1.5	35.6	2.8	1.4	41.2	0.7	0.7	1.3	0.3	2.9	2.3	40	2.1	1.6	46	
Cars	59	21	241	0	321	48	1186	94	0	1328	24	23	42	0	89	74	1336	68	0	1478	3216
% Cars	100	100	99.6	0	96.7	98	99.3	100	0	96	100	100	100	0	90.8	96.1	99.6	98.6	0	95.8	95.9
Medium Trucks	0	0	1	0	1	1	7	0	0	8	0	0	0	0	0	3	5	1	0	9	18
% Medium Trucks	0	0	0.4	0	0.3	2	0.6	0	0	0.6	0	0	0	0	0	3.9	0.4	1.4	0	0.6	0.5
Heavy Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Heavy Trucks	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	10	10	0	0	0	46	46	0	0	0	9	9	0	0	0	55	55	120
% Pedestrians	0	0	0	100	3	0	0	0	100	3.3	0	0	0	100	9.2	0	0	0	100	3.6	3.6

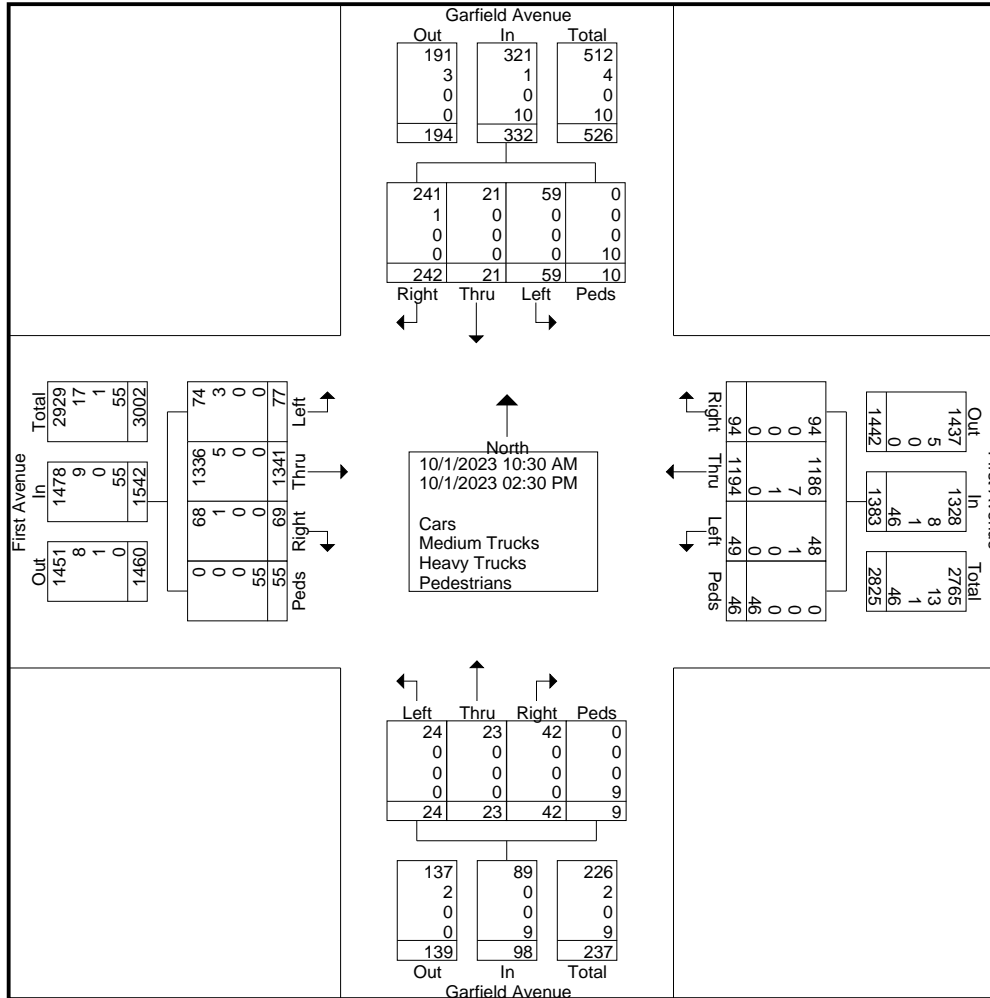
# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquestcorporation.com](http://www.techniquestcorporation.com)

File Name : TMC 02\_Sun  
 Site Code : 23T1-040-02-SUN  
 Start Date : 10/1/2023  
 Page No : 2



# TechniQuest Corporation

32 Jefferson Plaza, Princeton NJ 08540

Phone: 732.274.9500, Fax: 732.274.9510

[www.techniquescorporation.com](http://www.techniquescorporation.com)

File Name : TMC 02\_Sun  
 Site Code : 23T1-040-02-SUN  
 Start Date : 10/1/2023  
 Page No : 3

Start Time	Garfield Avenue Southbound					First Avenue Westbound					Garfield Avenue Northbound					First Avenue Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 02:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	2	2	14	0	18	7	103	9	1	120	1	3	5	0	9	5	103	2	3	113	260
12:00 PM	1	2	14	0	17	4	78	6	2	90	2	0	5	2	9	1	85	5	6	97	213
12:15 PM	4	0	24	0	28	1	60	4	3	68	0	0	7	0	7	6	96	8	0	110	213
12:30 PM	6	1	24	0	31	8	87	5	10	110	2	1	1	2	6	8	91	2	0	101	248
Total Volume	13	5	76	0	94	20	328	24	16	388	5	4	18	4	31	20	375	17	9	421	934
% App. Total	13.8	5.3	80.9	0		5.2	84.5	6.2	4.1		16.1	12.9	58.1	12.9		4.8	89.1	4	2.1		
PHF	.542	.625	.792	.000	.758	.625	.796	.667	.400	.808	.625	.333	.643	.500	.861	.625	.910	.531	.375	.931	.898



## **Synchro Capacity Analyses**

**For**

**The Independent Traffic Study of the 160 First Avenue  
Development Application**



Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	3	47	10	4	11	22	344	27	20	301	25
Future Vol, veh/h	10	3	47	10	4	11	22	344	27	20	301	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	3	51	11	4	12	24	374	29	22	327	27

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	830	836	341	849	835	389	354	0	0	403	0	0
Stage 1	385	385	-	437	437	-	-	-	-	-	-	-
Stage 2	445	451	-	412	398	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	289	303	701	281	304	659	1205	-	-	1156	-	-
Stage 1	638	611	-	598	579	-	-	-	-	-	-	-
Stage 2	592	571	-	617	603	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	270	288	701	249	289	659	1205	-	-	1156	-	-
Mov Cap-2 Maneuver	270	288	-	249	289	-	-	-	-	-	-	-
Stage 1	621	596	-	582	564	-	-	-	-	-	-	-
Stage 2	562	556	-	555	589	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.8		16		0.5		0.5	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1205	-	-	524	354	1156	-	-
HCM Lane V/C Ratio	0.02	-	-	0.124	0.077	0.019	-	-
HCM Control Delay (s)	8	0	-	12.8	16	8.2	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.2	0.1	-	-

HCM 6th TWSC  
 7: W. Garfield Avenue/E. Garfield Avenue & First Avenue

Analyzed by: KEC  
 Analyzed 11/04/2023

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	4	47	17	6	16	22	344	38	28	301	25
Future Vol, veh/h	10	4	47	17	6	16	22	344	38	28	301	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	4	51	18	7	17	24	374	41	30	327	27

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	856	864	341	871	857	395	354	0	0	415	0	0
Stage 1	401	401	-	443	443	-	-	-	-	-	-	-
Stage 2	455	463	-	428	414	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	278	292	701	271	295	654	1205	-	-	1144	-	-
Stage 1	626	601	-	594	576	-	-	-	-	-	-	-
Stage 2	585	564	-	605	593	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	254	275	701	237	278	654	1205	-	-	1144	-	-
Mov Cap-2 Maneuver	254	275	-	237	278	-	-	-	-	-	-	-
Stage 1	610	581	-	579	561	-	-	-	-	-	-	-
Stage 2	548	549	-	538	573	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.2		17.5		0.4		0.7	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1205	-	-	504	331	1144	-	-
HCM Lane V/C Ratio	0.02	-	-	0.132	0.128	0.027	-	-
HCM Control Delay (s)	8	0	-	13.2	17.5	8.2	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.4	0.1	-	-

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	20	50	25	0	0	14
Future Vol, veh/h	20	50	25	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	54	27	0	0	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	27	0	-	0	125 27
Stage 1	-	-	-	-	27 -
Stage 2	-	-	-	-	98 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1587	-	-	-	870 1048
Stage 1	-	-	-	-	996 -
Stage 2	-	-	-	-	926 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1587	-	-	-	858 1048
Mov Cap-2 Maneuver	-	-	-	-	858 -
Stage 1	-	-	-	-	982 -
Stage 2	-	-	-	-	926 -

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1587	-	-	-	1048
HCM Lane V/C Ratio	0.014	-	-	-	0.015
HCM Control Delay (s)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 6th TWSC  
 7: W. Garfield Avenue/E. Garfield Avenue & First Avenue

Analyzed by: KEC  
 Analyzed 11/04/2023

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	6	78	6	5	19	22	394	18	22	345	26
Future Vol, veh/h	14	6	78	6	5	19	22	394	18	22	345	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	7	85	7	5	21	24	428	20	24	375	28

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	936	933	389	969	937	438	403	0	0	448	0	0
Stage 1	437	437	-	486	486	-	-	-	-	-	-	-
Stage 2	499	496	-	483	451	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	245	266	659	233	265	619	1156	-	-	1112	-	-
Stage 1	598	579	-	563	551	-	-	-	-	-	-	-
Stage 2	554	545	-	565	571	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	223	251	659	191	250	619	1156	-	-	1112	-	-
Mov Cap-2 Maneuver	223	251	-	191	250	-	-	-	-	-	-	-
Stage 1	581	563	-	547	536	-	-	-	-	-	-	-
Stage 2	515	530	-	473	555	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.7		15.8		0.4		0.5	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1156	-	-	478	365	1112	-	-
HCM Lane V/C Ratio	0.021	-	-	0.223	0.089	0.022	-	-
HCM Control Delay (s)	8.2	0	-	14.7	15.8	8.3	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.3	0.1	-	-

HCM 6th TWSC  
 7: W. Garfield Avenue/E. Garfield Avenue & First Avenue

Analyzed by: KEC  
 Analyzed 11/04/2023

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	7	78	8	7	25	22	394	22	27	345	26
Future Vol, veh/h	14	7	78	8	7	25	22	394	22	27	345	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	8	85	9	8	27	24	428	24	29	375	28

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	953	947	389	982	949	440	403	0	0	452	0	0
Stage 1	447	447	-	488	488	-	-	-	-	-	-	-
Stage 2	506	500	-	494	461	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	239	261	659	228	260	617	1156	-	-	1109	-	-
Stage 1	591	573	-	561	550	-	-	-	-	-	-	-
Stage 2	549	543	-	557	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	213	245	659	185	244	617	1156	-	-	1109	-	-
Mov Cap-2 Maneuver	213	245	-	185	244	-	-	-	-	-	-	-
Stage 1	574	554	-	545	535	-	-	-	-	-	-	-
Stage 2	503	528	-	462	546	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15		16.5		0.4		0.6	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1156	-	-	466	356	1109	-	-
HCM Lane V/C Ratio	0.021	-	-	0.231	0.122	0.026	-	-
HCM Control Delay (s)	8.2	0	-	15	16.5	8.3	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.4	0.1	-	-

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	46	30	0	0	10
Future Vol, veh/h	10	46	30	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	50	33	0	0	11

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	33	0	-	0	105 33
Stage 1	-	-	-	-	33 -
Stage 2	-	-	-	-	72 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1579	-	-	-	893 1041
Stage 1	-	-	-	-	989 -
Stage 2	-	-	-	-	951 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1579	-	-	-	887 1041
Mov Cap-2 Maneuver	-	-	-	-	887 -
Stage 1	-	-	-	-	982 -
Stage 2	-	-	-	-	951 -

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1579	-	-	-	1041
HCM Lane V/C Ratio	0.007	-	-	-	0.01
HCM Control Delay (s)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 6th TWSC  
 7: W. Garfield Avenue/E. Garfield Avenue & First Avenue

Analyzed by: KEC  
 Analyzed 11/14/2023

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	3	40	12	13	12	7	630	14	5	161	20
Future Vol, veh/h	10	3	40	12	13	12	7	630	14	5	161	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	3	43	13	14	13	8	685	15	5	175	22

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	918	912	186	928	916	693	197	0	0	700	0	0
Stage 1	196	196	-	709	709	-	-	-	-	-	-	-
Stage 2	722	716	-	219	207	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	252	274	856	248	272	443	1376	-	-	897	-	-
Stage 1	806	739	-	425	437	-	-	-	-	-	-	-
Stage 2	418	434	-	783	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	232	270	856	230	268	443	1376	-	-	897	-	-
Mov Cap-2 Maneuver	232	270	-	230	268	-	-	-	-	-	-	-
Stage 1	798	735	-	421	433	-	-	-	-	-	-	-
Stage 2	389	430	-	735	727	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.7		19.4		0.1		0.2	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1376	-	-	525	290	897	-	-
HCM Lane V/C Ratio	0.006	-	-	0.11	0.139	0.006	-	-
HCM Control Delay (s)	7.6	0	-	12.7	19.4	9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0	-	-

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	8	14	25	0	0	12
Future Vol, veh/h	8	14	25	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	15	27	0	0	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	27	0	-	0	60 27
Stage 1	-	-	-	-	27 -
Stage 2	-	-	-	-	33 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1587	-	-	-	947 1048
Stage 1	-	-	-	-	996 -
Stage 2	-	-	-	-	989 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1587	-	-	-	941 1048
Mov Cap-2 Maneuver	-	-	-	-	941 -
Stage 1	-	-	-	-	990 -
Stage 2	-	-	-	-	989 -

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1587	-	-	-	1048
HCM Lane V/C Ratio	0.005	-	-	-	0.012
HCM Control Delay (s)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



HCM 6th TWSC  
 7: W. Garfield Avenue/E. Garfield Avenue & First Avenue

Analyzed by: KEC  
 Analyzed 11/14/2023

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	10	63	24	10	15	31	344	39	17	377	29
Future Vol, veh/h	10	10	63	24	10	15	31	344	39	17	377	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	11	68	26	11	16	34	374	42	18	410	32

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	939	946	426	965	941	395	442	0	0	416	0	0
Stage 1	462	462	-	463	463	-	-	-	-	-	-	-
Stage 2	477	484	-	502	478	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	244	262	628	234	263	654	1118	-	-	1143	-	-
Stage 1	580	565	-	579	564	-	-	-	-	-	-	-
Stage 2	569	552	-	552	556	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	219	246	628	192	247	654	1118	-	-	1143	-	-
Mov Cap-2 Maneuver	219	246	-	192	247	-	-	-	-	-	-	-
Stage 1	557	553	-	556	541	-	-	-	-	-	-	-
Stage 2	522	530	-	472	544	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.1		22.4		0.6		0.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1118	-	-	445	260	1143	-	-
HCM Lane V/C Ratio	0.03	-	-	0.203	0.205	0.016	-	-
HCM Control Delay (s)	8.3	0	-	15.1	22.4	8.2	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.8	0	-	-

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	20	46	35	0	0	14
Future Vol, veh/h	20	46	35	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	50	38	0	0	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	38	0	-	0	132 38
Stage 1	-	-	-	-	38 -
Stage 2	-	-	-	-	94 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1572	-	-	-	862 1034
Stage 1	-	-	-	-	984 -
Stage 2	-	-	-	-	930 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1572	-	-	-	850 1034
Mov Cap-2 Maneuver	-	-	-	-	850 -
Stage 1	-	-	-	-	970 -
Stage 2	-	-	-	-	930 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1572	-	-	-	1034
HCM Lane V/C Ratio	0.014	-	-	-	0.015
HCM Control Delay (s)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



## **Ferry Schedules**

**For**

**The Independent Traffic Study of the 160 First Avenue  
Development Application**

# SEASTREAK WEEKDAY SCHEDULE

Belford, Highlands, & Atlantic Highlands

Effective January 11, 2023

## NEW JERSEY DEPARTURES

New Jersey Departures			Manhattan, New York Arrivals			
			East Side		West Side	
Belford	Highlands	Atlantic Highlands	Pier 11/ Wall St.	East 35th St.	Brookfield Place	West 39th St.
5:45 AM	—	—	6:25 AM	—	6:35 AM	—
—	5:50 AM	—	6:30 AM	6:50 AM	—	—
6:15 AM	—	—	7:10 AM	—	6:55 AM	—
6:30 AM	—	—	7:25 AM	—	7:10 AM	—
—	6:40 AM	7:00 AM	7:40 AM	8:00 AM	—	—
7:30 AM	—	—	8:10 AM	—	8:20 AM	8:40 AM
—	—	7:30 AM	8:15 AM	8:30 AM	—	—
7:55 AM	—	—	8:35 AM	—	8:45 AM	9:00 AM
—	8:00 AM	—	8:45 AM	9:00 AM	—	—
8:15 AM	—	—	8:55 AM	—	9:05 AM	9:20 AM
—	—	9:10 AM	10:00 AM	10:15 AM	—	—
—	12:00 PM	—	1:20 PM	1:00 PM	—	—
—	3:00 PM	—	4:05 PM	3:50 PM	—	—
—	3:45 PM	4:00 PM	5:20 PM	5:00 PM	—	—
4:00 PM	—	—	5:25 PM	—	5:10 PM	4:55 PM
—	5:05 PM	4:55 PM	6:10 PM	5:55 PM	—	—
4:55 PM	—	—	6:20 PM	—	6:10 PM	5:55 PM
—	5:20 PM	5:35 PM	6:40 PM	6:25 PM	—	—
5:45 PM	—	—	7:10 PM	—	6:55 PM	6:40 PM
—	6:25 PM	6:10 PM	7:40 PM	7:25 PM	—	—
6:30 PM	—	—	8:10 PM	—	7:55 PM	7:30 PM
—	8:30 PM	—	9:55 PM	9:40 PM	—	—

SCHEDULE SUBJECT TO CHANGE WITHOUT NOTICE

## SEASTREAK FARES

### Daily Trips & Ticket Books

All tickets expire 60 days from date of purchase

40 Trip Book	\$ 720.00
20 Trip Book	\$ 420.00
10 Trip Book	\$ 230.00
40 Trip Student Book	\$ 509.00
Round Trip Flex (Adult)	\$ 49.00
One Way Flex (Adult)	\$ 28.00
Round Trip (Adult)- Belford Only	\$ 48.00
One Way (Adult)- Belford Only	\$ 24.00
Round Trip Child (5-12)	\$ 22.00
One Way Child (5-12)	\$ 11.00
Child Under 5 *Need ticket to board	FREE
Round Trip Active Military (Adult)	\$ 26.00
Round Trip Active Military (Child)	\$ 11.00
Bike Round Trip	\$ 5.00
Bike One Way	\$ 3.00
Senior(65+) Round Trip- Belford Only	\$ 44.00
Senior(65+) One Way- Belford Only	\$ 22.00



Schedules



Event Cruises

Seastreak tickets are not returnable or exchangeable, all tickets have an expiration date.

## SEASTREAK FARES

### Daily Trips & Ticket Books

All tickets expire 60 days from date of purchase

40 Trip Book	\$ 720.00
20 Trip Book	\$ 420.00
10 Trip Book	\$ 230.00
40 Trip Student Book	\$ 509.00
Round Trip (Adult)	\$ 49.00
One Way (Adult)	\$ 28.00
Round Trip (Adult)- Belford Only	\$ 48.00
One Way (Adult)- Belford Only	\$ 24.00
Round Trip Child (5-12)	\$ 22.00
One Way Child (5-12)	\$ 11.00
Child Under 5 *Need ticket to board	FREE
Round Trip Active Military (Adult)	\$ 26.00
Round Trip Active Military (Child)	\$ 11.00
Bike Round Trip	\$ 5.00
Bike One Way	\$ 3.00
Senior(65+) Round Trip- Belford Only	\$ 44.00
Senior(65+) One Way- Belford Only	\$ 22.00

Seastreak tickets are not returnable or exchangeable, all tickets have an expiration date.



Schedules



Event Cruises

1-800-BOATRIDE 1-800-262-8743

# seastreak

# SEASTREAK WEEKEND SCHEDULE

Highlands, East 35th St, & Pier 11

Effective January 7, 2023

## NEW JERSEY DEPARTURES

Highlands Departures	Pier 11/Wall St. Manhattan Arrivals	E. 35th St. Manhattan Arrivals
9:30 AM	10:20 AM	10:35 AM
12:00 PM	12:50 PM	1:05 PM
4:30 PM	5:20 PM	5:35 PM
7:30 PM	8:40 PM	8:25 PM

## MANHATTAN DEPARTURES

E. 35th St. Manhattan Departures	Pier 11/Wall St. Manhattan Departures	Highlands Arrivals
10:45 AM	10:25 AM	11:45 AM
1:10 PM	12:50 PM	2:05 PM
5:45 PM	5:25 PM	6:45 PM
8:30 PM	8:45 PM	9:30 PM

SCHEDULE SUBJECT TO CHANGE WITHOUT NOTICE



1-800-BOATRIDE 1-800-262-8743

# seastreak

# SEASTREAK WEEKDAY SCHEDULE

West 39th St, Brookfield Place, East 35th St, & Pier 11

Effective January 11, 2023

## NEW YORK DEPARTURES

Manhattan, New York Departures				New Jersey Arrivals		
West Side		East Side		Highlands	Atlantic Highlands	Belford
West 39th St.	Brookfield Place	East 35th St.	Pier 11/Wall St.			
—	6:35 AM	—	6:25 AM	—	—	7:20 AM
—	—	6:55 AM	6:30 AM	7:45 AM	—	—
—	6:55 AM	—	7:10 AM	—	—	7:50 AM
—	7:10 AM	—	7:25 AM	—	—	8:10 AM
—	—	8:00 AM	7:40 AM	—	9:00 AM	—
—	—	10:45 AM	11:00 AM	11:50 AM**	—	—
—	—	1:05 PM	1:25 PM	2:15 PM**	—	—
—	—	2:45 PM	3:00 PM	3:40 PM	3:50 PM*	—
2:45 PM	3:00 PM	—	3:15 PM	—	—	3:55 PM*
3:45 PM	4:00 PM	—	4:15 PM	—	—	4:50 PM*
—	—	3:55 PM	4:15 PM	5:05 PM	4:55 PM*	—
4:00 PM	4:15 PM	—	4:30 PM	—	—	5:10 PM*
—	—	4:25 PM	4:40 PM	5:20 PM	5:35 PM*	—
5:00 PM	5:15 PM	—	5:30 PM	—	—	6:20 PM*
—	—	5:10 PM	5:30 PM	6:20 PM	6:10 PM*	—
—	—	6:00 PM	6:15 PM	6:50 PM	7:10 PM*	—
6:00 PM	6:15 PM	—	6:30 PM	—	—	7:10 PM*
—	—	6:30 PM	6:45 PM	7:30 PM	7:40 PM*	—
6:45 PM	7:00 PM	—	7:15 PM	—	—	7:55 PM*
—	—	7:30 PM	7:45 PM	8:35 PM	8:25 PM*	—
7:45 PM	8:00 PM	—	8:15 PM	—	—	9:00 PM*
—	—	9:45 PM	10:00 PM	10:50 PM	11:00 PM*	—

SCHEDULE SUBJECT TO CHANGE WITHOUT NOTICE

\*Free bus transfer between Belford and Atlantic Highlands will be provided on this arrival

\*\*Free bus transfer to Atlantic Highlands and Belford will be provided on this arrival

## WEEKDAY SHUTTLE BUS SCHEDULE

Highlands to Atlantic Highlands and Belford Departure	Atlantic Highlands to Belford Departures	Belford to Atlantic Highlands Departures
11:55 AM	—	—
2:15 PM	—	—
—	3:55 PM	—
—	—	4:05 PM
—	—	4:55 PM
—	5:05 PM	—
—	—	5:15 PM
—	5:40 PM	—
—	6:15 PM	—
—	—	6:25 PM
—	7:15 PM	—
—	—	7:25 PM
—	7:45 PM	—
—	—	8:00 PM
—	8:30 PM	—
—	—	9:05 PM
—	11:05 PM	—

\*Shuttle bus between Atlantic Highlands and Belford will take approximately 7 minutes.

\*Shuttle bus between Highlands and Belford will take approximately 10 minutes.

SCHEDULE SUBJECT TO CHANGE WITHOUT NOTICE

SCHEDULES & FARES

# BETWEEN NEW JERSEY & NEW YORK CITY

*Tickets available for purchase at port of departure. Online ticket purchases for this route coming soon.*



**TODAY** [NJ/NYC Seastreak Service Alert – United Nations Security Zone Delays >](#)

Monday - Thursday (Effective August 7)

**1** **ROUTE ALERT**

Date Affected: September 20th >

# TO MANHATTAN

Departing Belford, NJ	Departing Highlands, NJ	Departing Atlantic Highlands, NJ	Departing Sandy Hook Beach, NJ	Arriving Pier 11/Wall St., NYC	Arriving East 35th St., NYC	Arriving Brookfield Place, NYC	Arriving Paulus Hook, NJ	Arriving West 39th St., NYC
5:40am				6:20am		6:30am	6:40am	
	5:50am			6:30am	6:50am			
6:15am				7:10am		7:00am		
	6:40am	7:00am		7:40am	8:00am			
7:30am				8:10am		8:20am	8:30am	8:45am
		7:30am		8:15am	8:30am			
	8:00am			8:45am	9:00am			
8:05am				8:50am		9:00am	9:10am	9:20am
		9:10am		9:50am	10:05am			
10:15am				11:00am				11:15am
		12:00pm		1:20pm	1:00pm			
	3:00pm			4:05pm	3:50pm			
	3:45pm	4:00pm	4:10pm	5:20pm	5:00pm			
3:55pm				5:25pm		5:10pm	5:00pm	4:45pm
	5:05pm	4:55pm		6:10pm	5:55pm			
5:15pm				6:35pm		6:25pm	6:15pm	6:05pm
	5:20pm	5:35pm		6:40pm	6:25pm			
6:20pm				7:30pm		7:15pm	7:05pm	
	6:25pm	6:10pm		7:40pm	7:25pm			

**1** ROUTE ALERT

Date Affected: September 20th >

# FROM MANHATTAN

Departing West 39th St., NYC	Departing Paulus Hook, NJ	Departing Brookfield Place, NYC	Departing East 35th St., NYC	Departing Pier 11/Wall St., NYC	Arriving Sandy Hook Beach, NJ	Arriving Atlantic Highlands, NJ	Arriving Highlands, NJ	Arriving Belford, NJ
	6:40am	6:30am		6:20am				7:20am
			6:55am	6:30am			7:45am	
		7:00am		7:10am				7:55am
			8:00am	7:40am	8:45am	9:00am		
			10:45am	11:00am	11:40am	11:55am		
			1:05pm	1:25pm			2:15pm	
			2:45pm	3:00pm		3:55pm	3:40pm	
2:35pm	2:50pm	3:00pm		3:15pm				3:55pm
			3:55pm	4:15pm		4:55pm	5:05pm	
4:00pm		4:15pm		4:30pm				5:15pm
			4:25pm	4:40pm		5:35pm	5:20pm	
			5:10pm	5:30pm		6:10pm	6:20pm	
4:50pm	5:05pm	5:15pm		5:30pm				6:15pm
			6:00pm	6:15pm		7:10pm	6:50pm	
6:05pm	6:15pm	6:25pm		6:35pm				7:20pm
			6:30pm	6:45pm		7:40pm	7:30pm	
	7:05pm	7:20pm		7:35pm				8:15pm
			7:30pm	7:45pm		8:25pm	8:35pm	
			9:45pm	10:00pm		10:40pm	10:55pm	

**ROUTE ALERT**

Date Affected: September 20th >



Highlands shuttle bus drops off at Atlantic Highlands and Belford and takes approximately 10 minutes.

Atlantic Highlands shuttle bus drops off at Belford and takes approximately 7 minutes.

Belford Shuttle bus drops off at Atlantic Highlands and takes approximately 7 minutes.

## Fridays (Effective August 7)

---

# TO MANHATTAN

Departing Belford, NJ	Departing Highlands, NJ	Departing Atlantic Highlands, NJ	Departing Sandy Hook Beach, NJ	Arriving Pier 11/Wall St., NYC	Arriving East 35th St., NYC	Arriving Brookfield Place, NYC	Arriving Paulus Hook, NJ	Arriving West 39th St., NYC
5:40am				6:20am		6:30am	6:40am	
	5:50am			6:30am	6:50am			
6:15am				7:10am		7:00am		
	6:40am	7:00am		7:40am	8:00am			
7:30am				8:10am		8:20am	8:30am	8:45am
		7:30am		8:15am	8:30am			
	8:00am			8:45am	9:00am			
8:05am				8:50am		9:00am	9:10am	9:20am
		9:10am		9:50am	10:05am			
		12:00pm		1:20pm	1:00pm			
	3:00pm			4:05pm	3:50pm			
	3:45pm	4:00pm	4:10pm	5:20pm	5:00pm			
3:55pm				5:25pm		5:10pm	5:00pm	4:45pm
	5:05pm	4:55pm		6:10pm	5:55pm			
5:15pm				6:35pm		6:25pm	6:15pm	6:05pm
	5:20pm	5:35pm		6:40pm	6:25pm			
6:20pm				7:30pm		7:15pm	7:05pm	
	6:25pm	6:10pm		7:40pm	7:25pm			
	8:30pm			9:55pm	9:40pm			

① ROUTE ALERT

Date Affected: September 20th >

# FROM MANHATTAN

Departing West 39th St., NYC	Departing Paulus Hook, NJ	Departing Brookfield Place, NYC	Departing East 35th St., NYC	Departing Pier 11/Wall St., NYC	Arriving Sandy Hook Beach, NJ	Arriving Atlantic Highlands, NJ	Arriving Highlands, NJ	Arriving Belford, NJ
	6:40am	6:30am		6:20am				7:20am
			6:55am	6:30am			7:45am	
		7:00am		7:10am				7:55am
			8:00am	7:40am	8:45am	9:00am		
			10:45am	11:00am	11:40am	11:55am		
			1:05pm	1:25pm		2:05pm	2:15pm	
			2:45pm	3:00pm		3:55pm	3:40pm	
2:35pm	2:50pm	3:00pm		3:15pm				3:55pm
			3:55pm	4:15pm		4:55pm	5:05pm	
4:00pm		4:15pm		4:30pm				5:15pm
			4:25pm	4:40pm		5:35pm	5:20pm	
			5:10pm	5:30pm		6:10pm	6:20pm	
4:50pm	5:05pm	5:15pm		5:30pm				6:15pm
			6:00pm	6:15pm		7:10pm	6:50pm	
6:05pm	6:15pm	6:25pm		6:35pm				7:20pm
			6:30pm	6:45pm		7:40pm	7:30pm	
	7:05pm	7:20pm		7:35pm				8:15pm
			7:30pm	7:45pm		8:25pm	8:35pm	
			9:45pm	10:00pm		10:40pm	10:55pm	

**ROUTE ALERT**

Date Affected: September 20th >

Highlands shuttle bus drops off at Atlantic Highlands and Belford and takes approximately 10 minutes.

Atlantic Highlands shuttle bus drops off at Belford and takes approximately 7 minutes.

Belford Shuttle bus drops off at Atlantic Highlands and takes approximately 7 minutes.

## Saturday - Sunday (Effective Sept 9)

### TO MANHATTAN

Departing Highlands, NJ	Departing Sandy Hook Beach, NJ	Arriving Pier 11/Wall St., NYC	Arriving East 35th St., NYC
9:30am		10:45am	10:15am
12:00pm		1:10pm	12:55pm
3:00pm	3:15pm	4:10pm	3:55pm
5:00pm	5:15pm	6:10pm	5:55pm
7:00pm	7:15pm	7:50pm	8:05pm

### FROM MANHATTAN

Departing East 35th St., NYC	Departing Pier 11/Wall St., NYC	Arriving Sandy Hook Beach, NJ	Arriving Highlands, NJ
10:30am	11:00am	11:35am	11:50am
12:55pm	1:10pm	1:45pm	1:50pm
4:00pm	4:15pm		4:55pm
6:00pm	6:15pm		6:55pm
8:15pm	8:30pm		9:05pm

Sunday, September 24th (Tunnel to Towers)

## TO MANHATTAN

Departing Highlands, NJ	Departing Sandy Hook Beach, NJ	Arriving Pier 11/Wall St., NYC	Arriving East 35th St., NYC
5:45am		6:25am	
9:30am		10:45am	10:15am
12:00pm		1:10pm	12:55pm
3:00pm	3:15pm	4:10pm	3:55pm
5:00pm	5:15pm	6:10pm	5:55pm
7:00pm	7:15pm	7:50pm	8:05pm

## FROM MANHATTAN

Departing East 35th St., NYC	Departing Pier 11/Wall St., NYC	Arriving Sandy Hook Beach, NJ	Arriving Highlands, NJ
	6:30am		7:10am
10:30am	11:00am	11:35am	11:50am
12:55pm	1:10pm	1:45pm	1:50pm
4:00pm	4:15pm		4:55pm
6:00pm	6:15pm		6:55pm
8:15pm	8:30pm		9:05pm

① ROUTE ALERT

Date Affected: September 20th >

## SCHEDULE KEY

- i** Indicates additional stop information for a specified time/route
- S** Denotes shuttle service to World Financial Center and Citi Building

Please refer to specific schedules above for shuttle bus schedule.

## REGULAR MONDAY-THURSDAY SHUTTLE BUS SCHEDULE

Belford / Atlantic Highlands / Highlands

Please view specific schedules above for any Holiday shuttle schedules.

Highlands to Atlantic Highlands and Belford <u>Departures</u>	Atlantic Highlands to Highlands and Belford <u>Departures</u>	Atlantic Highlands to Belford <u>Departures</u>	Belford to Atlantic Highlands <u>Departures</u>
—	12:00 PM	—	—
2:15 PM	—	—	—
—	—	—	3:55 PM
—	—	4:10 PM	—

Highlands to Atlantic Highlands and Belford <u>Departures</u>	Atlantic Highlands to Highlands and Belford <u>Departures</u>	Atlantic Highlands to Belford <u>Departures</u>	Belford to Atlantic Highlands <u>Departures</u>
—	—	—	5:20 PM
—	—	5:40 PM	—
—	—	6:15 PM	—
—	—	—	6:25 PM
—	—	7:15 PM	—
—	—	—	7:30 PM
—	—	7:45 PM	—
—	—	—	8:15 PM
—	—	8:35 PM	—
—	—	10:40 PM	—

Shuttle bus between Atlantic Highlands and Belford will take approximately 7 minutes.

Shuttle bus between Highlands and Belford will take approximately 10 minutes.

## REGULAR FRIDAY SHUTTLE BUS SCHEDULE

Belford / Atlantic Highlands / Highlands

Please view specific schedules above for any Holiday shuttle schedules.

Atlantic Highlands to Highlands and Belford <u>Departures</u>	Atlantic Highlands to Belford <u>Departures</u>	Belford to Atlantic Highlands <u>Departures</u>
12:00 PM	—	—
—	2:10 PM	—
—	—	3:55 PM
—	4:10 PM	—
—	5:00 PM	—
—	—	5:20 PM
—	5:40 PM	—
—	6:15 PM	—
—	—	6:25 PM
—	7:15 PM	—
—	—	7:30 PM
—	7:45 PM	—
—	—	8:15 PM
—	8:35 PM	—
—	10:40 PM	—

Shuttle bus between Atlantic Highlands and Belford will take approximately 7 minutes.

Shuttle bus between Highlands and Belford will take approximately 10 minutes.



# Fares

Tickets available for purchase at port of departure. Online ticket purchases for this route coming soon.

<b>One Way (13+)</b>	<b>\$28</b>
CHILD (5 -12)	<b>\$11</b>
CHILD UNDER 5 (0-4) ☒ Need a ticket to board	<b>FREE</b>
<b>Round Trip (13+)</b>	<b>\$49</b>
CHILD (5-12)	<b>\$22</b>
CHILD UNDER 5 (0-4) ☒ Need a ticket to board	<b>FREE</b>
<b>Bike Fee</b> Bring your bike aboard.	<b>\$-</b>
ROUND TRIP	<b>\$5</b>
ONE WAY	<b>\$3</b>
<b>NYC Transfer</b> Ride Seastreak either direction between East 35th St. and Pier 11 ports. Not valid for NJ ports.	<b>\$5</b>

<b>40-Trip Book</b> ☒ Discounted 40 one-way trips. Expires in 60 days from the date of purchase.	<b>\$720</b>
<b>STUDENT 40</b> ☒ Same as a 40-Trip Book but with a steeper discount! Must present student ID when boarding. Must be purchased at the Atlantic Highlands office with completed paperwork by student and school. Cannot be shared with anyone. Only for use by student with approved application. Expires in 60 days from the date of purchase.	<b>\$509</b>
<b>20-Trip Book</b> ☒ Discounted 20 one-way trips. Expires in 60 days from the date of purchase.	<b>\$420</b>
<b>10-Trip Book</b> ☒ Discounted 10 one-way trips. Expires in 60 days from the date of purchase.	<b>\$230</b>
<b>Belford Only</b> Only available for passengers going directly to/from Belford. Cannot be used towards Atlantic Highlands or Highlands. These tickets cannot be purchased in the Atlantic Highlands or Highlands ticket office.	<b>\$-</b>
<b>ROUND TRIP (13+)</b>	<b>\$48</b>
<b>ONE WAY (13+)</b>	<b>\$24</b>
<b>SENIOR ROUND TRIP (65+)</b> 1 ticket per person with a valid ID	<b>\$44</b>
<b>SENIOR ONE WAY (65+)</b> 1 ticket per person with a valid ID	<b>\$22</b>

☒ All ticket books valid for 60 days from the date of purchase.

☒ All daily round trip and one way tickets valid for 60 days from the date of purchase.

---

# Port and Shuttle Locations at a Glance

---

## Seastreak Ferry Terminal at Belford

10 Harbor Way - Belford, NJ 07718

---

### TICKET OFFICE HOURS

M-F: 5:00am - 8:30am, 3:30 pm - 8:00pm

### PORT FEATURES



Bike Rack



Free Daytime Parking



Handicap Accessibility



Covered Waiting Area



Free Overnight Parking  
(restrictions apply)



Refreshments



Easy Access to NYC  
Transit Buses



Free Single-Night  
Overnight Parking



Restrooms

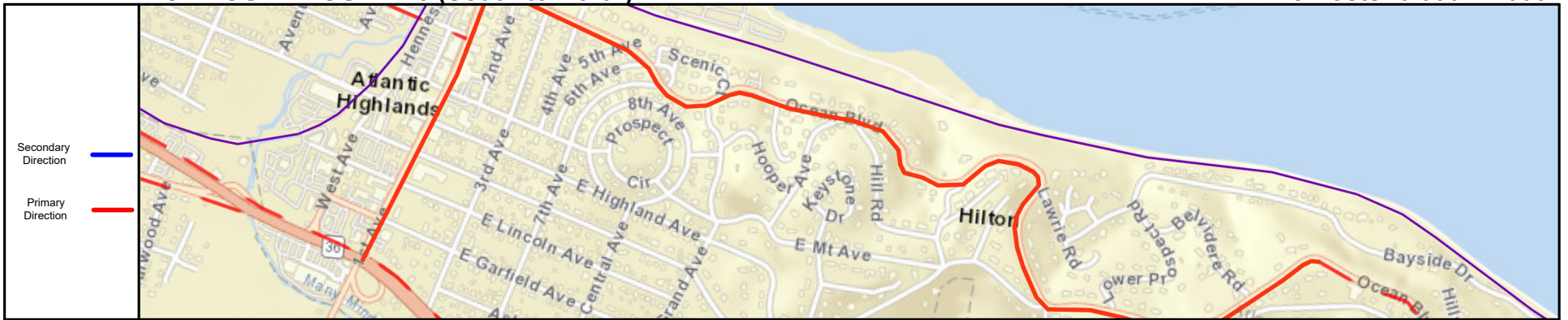
---



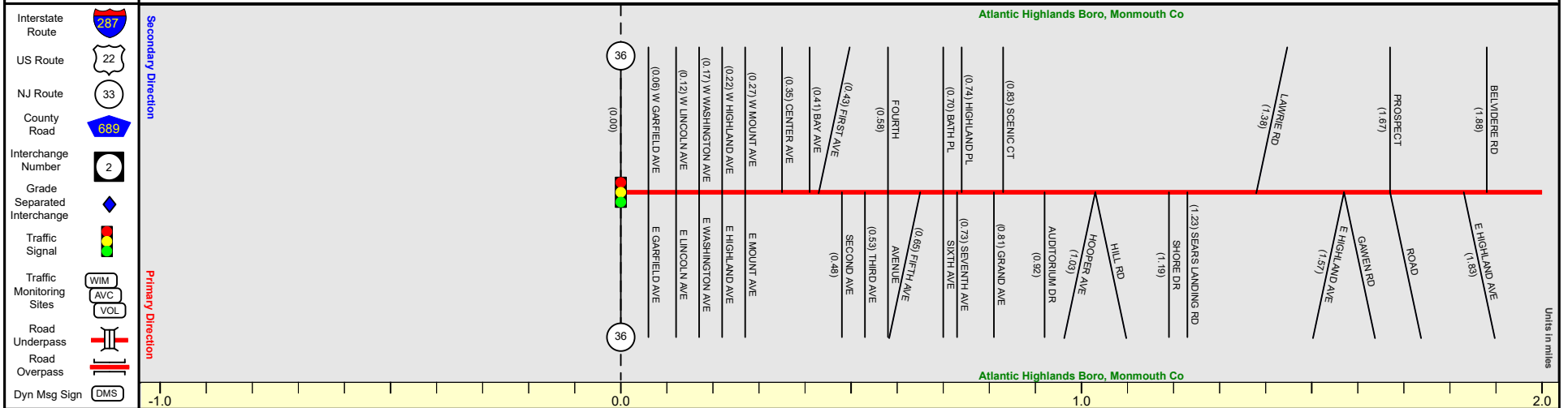
## **NJDOT Straight Line Diagrams**

**For**

**The Independent Traffic Study of the 160 First Avenue  
Development Application**



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	First Avenue	Ocean Boulevard
Jurisdiction	County	
Functional Class	Urban Major Collector	
Federal Aid - NHS Sy	IM - Ferry Term.	STP
Control Section	Begin Monmouth County 8 MP=0	
Speed Limit	99	25
Number of Lanes	2	
Med. Type	None	
Med. Width		
Pavement	48	26
Shoulder		2
Traffic Volume	6,482 (2018)	7,685 (2018)
Traffic Sta. ID	121322	121320
Structure No.		130MT40
Enlarged Views		



## **NJDOT Background Growth Rates**

**For**

**The Independent Traffic Study of the 160 First Avenue  
Development Application**

# NJDOT ACCESS PERMIT

## ANNUAL BACKGROUND GROWTH RATE TABLE

Valid for NJDOT Access Permits submitted April 2019 - April 2021

COUNTY	Functional Classification											
	RURAL						URBAN					
	Interstate	Other Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local	Interstate	Freeway	Principal Arterial	Minor Arterial	Collector	Local
ATLANTIC	N/A	1.00%	1.50%	1.00%	1.00%	2.75%	N/A	1.00%	1.00%	1.00%	1.75%	1.00%
BERGEN	N/A	N/A	N/A	N/A	N/A	N/A	2.50%	2.00%	1.50%	2.50%	1.00%	1.00%
BURLINGTON	1.50%	1.75%	1.00%	1.25%	1.00%	1.25%	2.00%	2.00%	1.00%	1.50%	1.50%	1.00%
CAMDEN	1.50%	1.25%	1.00%	1.25%	1.00%	1.00%	2.25%	1.75%	1.00%	1.00%	2.25%	1.00%
CAPE MAY	N/A	1.50%	2.25%	1.00%	2.25%	1.25%	N/A	1.00%	1.00%	1.00%	1.00%	1.00%
CUMBERLAND	N/A	1.00%	1.00%	1.00%	1.00%	2.00%	N/A	1.00%	1.00%	1.25%	1.25%	1.00%
ESSEX	N/A	N/A	N/A	N/A	N/A	N/A	2.00%	3.00%	1.00%	2.00%	1.00%	1.50%
GLOUCESTER	1.50%	1.25%	1.00%	1.25%	1.75%	1.00%	2.50%	1.75%	1.00%	1.00%	2.25%	1.50%
HUDSON	N/A	N/A	N/A	N/A	N/A	N/A	1.00%	1.00%	1.00%	1.00%	1.00%	1.50%
HUNTERDON	1.00%	1.00%	1.00%	2.00%	1.00%	1.00%	2.25%	2.00%	1.25%	1.00%	2.50%	1.00%
MERCER	1.50%	1.00%	1.75%	1.50%	1.00%	1.00%	1.50%	2.50%	1.00%	1.00%	1.00%	1.00%
MIDDLESEX	1.00%	1.00%	1.75%	1.25%	1.00%	1.00%	1.50%	2.00%	1.00%	1.00%	1.00%	1.00%
MONMOUTH	1.50%	2.25%	1.00%	1.00%	1.00%	1.75%	1.00%	1.75%	1.25%	1.00%	2.50%	1.00%
MORRIS	1.25%	3.00%	1.00%	1.25%	2.50%	1.25%	1.50%	1.00%	1.00%	1.50%	1.00%	1.00%
OCEAN	1.00%	1.00%	1.00%	1.75%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.50%
PASSAIC	N/A	N/A	N/A	N/A	N/A	N/A	1.00%	1.00%	1.00%	1.00%	2.00%	1.00%
SALEM	1.50%	1.00%	1.00%	1.00%	1.50%	3.00%	2.00%	1.50%	1.25%	1.00%	1.00%	2.00%
SOMERSET	2.00%	1.00%	1.75%	1.00%	1.50%	1.00%	1.75%	2.25%	1.25%	1.00%	1.75%	1.00%
SUSSEX	1.00%	1.00%	1.75%	1.50%	1.50%	1.25%	1.00%	1.00%	1.00%	1.50%	1.50%	1.75%
UNION	N/A	N/A	N/A	N/A	N/A	N/A	1.25%	1.50%	1.00%	1.00%	1.00%	1.00%
WARREN	1.00%	1.00%	1.00%	1.00%	1.00%	1.25%	2.25%	1.00%	1.00%	1.00%	1.00%	1.00%

NOTE: For use in short term (within 1-3 years) background growth ONLY.

**Example:** Assume existing condition is 1,500 peak hour trips and the applicable growth rate is 2%. The multiplication factor for 2% compounded for 3 years is 1.0612. The three-year peak hour forecast is 1,591.8, or 1,592 peak hour trips.  $[1592 = 1500(1 + 0.02)^3 = 1500(1.0612)]$

$$\text{Future Growth (compounded)} = \text{Present Growth} * (1 + \text{Growth Rate})^{\# \text{ of years}}$$