35 Technology Drive
Warren, New Jersey 07059
908-769-5588
atde@atlantictraffic.com

TRAFFIC IMPACT ANALYSIS

FOR

BRIGHTON NORSE REALTY, LLC

PROPOSED WHOLE FOODS SUPERMARKET

BLOCK 202, LOT 4

500 CHESTNUT RIDGE ROAD (CR 73)

WOODCLIFF LAKE BOROUGH

BERGEN COUNTY, NEW JERSEY

JOHN R. HARTER
PROFESSIONAL ENGINEER
N.J. LICENSE NO. 41033

DAVID FAHIM
PROJECT ENGINEER

Atlantic Traffic & Design Engineering, LLC
NJ Certificate of Authorization No. 24GA27957900

February 26, 2020

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INTRODUCTION

Atlantic Traffic & Design Engineering, LLC (ATDE) has prepared this Traffic Impact Analysis to examine the future traffic impact of a Whole Foods Supermarket and a retail development proposed in Woodcliff Lake Borough. The site is located at the northeast corner of Chestnut Ridge Road (CR 73) and Tice Boulevard intersection in Woodcliff Lake Borough, Bergen County, New Jersey, as shown on **Figure 1** in **Appendix A**. The subject property is currently occupied by a 70,110 square foot shopping center consisting of a former ACME Supermarket inclusive of 5 retail shops.

Under the development proposal, a 45,000 square foot Whole Foods Supermarket and a 15,035 square foot retail space is proposed to be developed in place of the ACME Supermarket. The 5 retail shops, consisting of 10,075 square feet, will remain. Access will be maintained via the existing signalized full-movement driveway along Chestnut Ridge Road (CR 73) at its intersection with Tice Boulevard and the existing right-in/right-out driveway along northbound Chestnut Ridge Road (CR 73) approximately 450 feet north of its intersection with Tice Boulevard.

This study has been performed to evaluate potential traffic impacts associated with the proposed Whole Foods Supermarket and retail development. Accordingly, this analysis includes the following:

- A review of existing roadway and traffic conditions in the vicinity of the site, including roadway geometrics and traffic volumes;
- Projection of the volume of traffic expected to be generated by the proposed Whole Foods Supermarket based on research data collected by ATDE and the retail development based on research data collected by the Institute of Transportation Engineers (ITE);
- An analysis of future roadway and site driveway operations;
- An evaluation of the Site Plan focusing on access and parking supply; and
- Recommendations and conclusions.

EXISTING CONDITIONS

EXISTING SUBJECT PROPERTY

The subject property is located at the northeast corner of the intersection formed by Chestnut Ridge Road (CR 73) and Tice Boulevard in Woodcliff Lake Borough, Bergen County, New Jersey. The following characteristics describe the subject property:

- The site is designated as Lot 4 in Block 202.
- The subject property is currently developed with a 70,110 square foot shopping center consisting of a former ACME Supermarket and 5 retail shops.
- Located in the B-3 Zone where retail stores and shops are permitted uses.
- Land uses in the vicinity of the site area are predominantly commercial an office.

EXISTING ROADWAY NETWORK

The subject property has frontage along northbound Chestnut Ridge Road (CR 73) and westbound Tice Boulevard and is located opposite Tice Boulevard. The following is a description of the adjacent roadway network:

Chestnut Ridge Road (CR 73)

- Classified as an Urban Minor Arterial under Bergen County jurisdiction.
- Designated as a north/south roadway.
- Generally provides 2 lanes to accommodate each direction of travel with turn lanes provided at key signalized intersections.
- Has a posted speed limit of 40 miles per hour in the site vicinity.

Tice Boulevard

- Classified as a local road under Woodcliff Lake Borough jurisdiction.
- Has a general east/west orientation.
- Provides 1 through lane to accommodate each direction of travel.
- Has a posted speed limit of 25 miles per hour in the site vicinity.

EXISTING TRAFFIC CONDITIONS

To examine the existing traffic conditions in the vicinity of the subject property, traffic counts were conducted during the weekday midday, weekday evening and Saturday peak periods at the following intersections:

- Chestnut Ridge Road (CR 73) & Tice Boulevard
- Chestnut Ridge Road (CR 73) & right-in/right-out site driveway

Specifically, manual turning movement counts were conducted on Wednesday, January 15, 2020 from 11:30 a.m. to 2:00 p.m. and from 4:00 p.m. to 7:00 p.m., and on Saturday, January 25, 2020 from 11:00 a.m. to 3:00 p.m.

The results of the traffic counts indicate there are distinct hours during the periods of study when traffic experienced its highest levels. The weekday midday peak hour was found to occur between 12:15 p.m. and 1:15 p.m., the weekday evening peak hour was found to occur between 4:45 p.m. and 5:45 p.m. and the Saturday peak hour was found to occur between 11:15 a.m. and 12:15 p.m. The manual turning movement count summaries are contained in **Appendix B**. The existing weekday midday, weekday evening and Saturday peak hour traffic volumes are summarized on **Figure 2** in **Appendix A**.

PROPOSED DEVELOPMENT TRAFFIC CHARACTERISTICS

TRIP GENERATION

The next step in the analysis procedure is to project the volume of traffic generated as a result of the proposed retail development. For the purpose of this analysis, complete project approval, construction and occupancy is assumed to occur within 2 years.

Traffic projections for the proposed 45,000 square foot Whole Foods Supermarket have been prepared utilizing research data conducted by ATDE at the 25,200 square foot Whole Foods Supermarket located at 44 Goodwin Avenue, Village of Ridgewood, Bergen County, New Jersey. The Whole Foods research conducted by ATDE is contained in **Appendix C**.

Table I compares the trip generation rate per 1,000 square feet of building area for the ATDE research site and the published rates by ITE in the 10th Edition of *Trip Generation*, September 2017. This ITE reference includes compilations of trip generation data collected at various land uses in the United States, including various types of service uses such as grocery stores. Specifically, ITE Land Use Code 850: "*Supermarket*" was utilized.

TABLE I
SUPERMARKET TRIP GENERATION COMPARISON
ITE RATE VS. WHOLE FOODS RESEARCH RATE
PER 1,000 SF OF BUILDING AREA

Peak Hour	ITE Trip Generation Rate	Observed Whole Foods Research Rate
Weekday Midday	7.60	14.13
Weekday Evening	9.24	12.30
Saturday Midday	10.34	12.78

To maintain a conservative analysis, the research trip generation rates were utilized to project the trip generation of the proposed 45,000 square foot Whole Foods Supermarket since the research rates were found to be higher than the ITE rates.

Table II provides the peak hour trip generation projections for the 45,000 square foot Whole Foods Supermarket based on the observed research rates. A significant portion of the site generated traffic of the supermarket is assumed to be "pass-by" in nature. Pass-by trips are defined

as diverted movements into the site from the adjacent flow of traffic (i.e.; one stop made in a series of linked "errand" type trips to multiple locations or made by a commuter on the way to work or home). The average peak hour pass-by trip percentage for a supermarket is 36% during the weekday evening peak hour as found in the *ITE Trip Generation Handbook*, 3rd Edition, September 2017. ITE does not provide a pass-by percentage for the weekday midday and Saturday midday peak hours; however, it can be assumed that the weekday midday and Saturday midday peak hour pass-by rate is similar to that of the weekday evening peak hour. Therefore, a 36% pass-by rate was utilized for each of the study peak hours.. Additionally, internal capture based on ITE research was taken into account between the existing retail uses and the proposed development.

TABLE II
WHOLE FOODS RESEARCH TRIP GENERATION
PROPOSED 45,000 SF WHOLE FOODS SUPERMARKET

Trip Type	Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
New	249	159	408	230	131	361	199	142	341
Pass-By	93	93	186	77	77	154	86	86	172
Internal Capture	21	21	42	20	19	39	29	33	62
Total	363	273	636	327	227	554	314	261	575

Trip generation for the proposed 15,035 square foot retail building was projected utilizing ITE Land Use Code 820: "*Shopping Center*." **Table III** below provides peak hour trip generation projections for the proposed retail building. The average peak hour pass-by trip percentage for a shopping center is 34% during the weekday evening peak hour and 26% during the Saturday midday peak hour as found in the *ITE Trip Generation Handbook*, 3rd Edition, September 2017. ITE does not provide a pass-by percentage during the weekday midday peak hour; however, it can be assumed that the weekday midday peak hour pass-by rate is similar to that of the weekday evening peak hour. Therefore, a 34% pass-by rate was utilized for each of the peak hours. Additionally, internal capture was taken into account between the existing retail uses and the proposed development. ITE trip generation printouts are contained in **Appendix D.**

TABLE III
ITE TRIP GENERATION
PROPOSED 15,035 SF SHOPPING CENTER TRIP GENERATION

Trip Type	Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
New	31	31	62	28	33	61	27	26	53
Pass-By	20	20	40	17	17	34	12	12	24
Internal Capture	21	21	42	19	20	39	33	29	62
Total	72	72	144	64	70	134	72	67	139

Table IV summarizes the additional site generated traffic for both the 45,000 square foot Whole Foods Supermarket and 15,035 square foot shopping center. This includes internal capture trips which naturally occurs between multiple retail uses within a shopping center.

TABLE IV
WHOLE FOODS RESEARCH & ITE TRIP GENERATION
TOTAL ADDITIONAL TRIP GENERATION INCLUDING INTERNAL CAPTURE TRIPS

Trip Type	Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
New	280	190	470	258	164	422	226	168	394
Pass-By	113	113	226	94	94	188	98	98	196
Internal Capture	42	42	84	39	39	78	62	62	124
Total	435	345	780	391	297	688	386	328	714

Table V illustrates the additional peak hour site generated traffic with removal of internal capture trips. The proposed development traffic is broken out into new and pass-by vehicle trips which was utilized when analyzing the adjacent roadway network.

TABLE V
WHOLE FOODS RESEARCH & ITE TRIP GENERATION
TOTAL ADDITIONAL TRIP GENERATION

Trip Type	Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
New	280	190	470	258	164	422	226	168	394
Pass-By	113	113	226	94	94	188	98	98	196
Total	393	303	696	352	258	610	324	266	590

Table VI compares the total additional trips from the proposed development to the trip generation of the former 60,035 square foot ACME Supermarket. The trip generation was projected using ITE rates for Land Use Code 850: "*Supermarket.*"

TABLE VI
WHOLE FOODS RESEARCH AND ITE TRIP GENERATION
FORMER ACME SUPERMARKET DEVELOPMENT VS.
PROPOSED WHOLE FOODS DEVELOPMENT

		Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
Former Acme Supermarket Development	Trip Type	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
	New	125	109	234	159	149	308	178	166	344
	Pass-By	74	74	148	94	94	188	110	110	220
	Total	199	183	382	253	243	496	288	276	564
		Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
Proposed Whole Foods Development	Trip Type	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
	New	280	190	470	258	164	422	226	168	394
	Pass-By	113	113	226	94	94	188	98	98	196
	Total	393	303	696	352	258	610	324	266	590
		Weekday Midday Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
Former vs. Proposed Trip Generation Comparison	Trip Type	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
	New	+155	+81	+236	+99	+15	+114	+48	+2	+50
	Pass-By	+39	+39	+78	0	0	0	-12	-12	-24
	Total	+194	+120	+314	+99	+15	+114	+36	-10	+26

As can be seen from **Table VI**, the proposed development is calculated to generate notably more peak hour vehicle trips than the former ACME Supermarket during the weekday evening and comparable trips during the Saturday midday peak hours.

FUTURE TRAFFIC CONDITIONS

FUTURE TRAFFIC VOLUMES

It is recognized traffic routinely fluctuates along various State and County roadways, as well as local streets, and varies not only day-to-day, but also on a monthly and yearly basis. It is expected as development continues in the vicinity of the site, traffic may be expected to increase on a regular basis. It is anticipated the construction of the proposed retail development will be completed within 2 years. As a result, minimal (if any) additional "background" traffic growth can be anticipated with such a short build-out. However, in order to perform a conservative analysis, the existing traffic volumes on the study roadway system were increased by a 2.50% growth rate per year which the NJDOT growth factor for urban arterials in Bergen County to develop the future No-Build traffic volumes.

OTHER AREA DEVELOPMENTS

The Woodcliff Lake Borough Planning & Zoning Board was contacted to determine if there are any proposed or planned developments in the vicinity of the site which could impact traffic conditions on the adjacent roadway network. According to the Borough's response, there are no approved developments expected to generate significant traffic along the adjacent roadway network in the vicinity of the subject property.

FUTURE NO-BUILD TRAFFIC VOLUMES

The future No-Build traffic volumes were established by growing the traffic volumes associated with the 2-year build-out at a traffic growth rate of 2.50%. The resulting future No-Build traffic volumes are summarized on **Figure 8** in **Appendix A**.

FUTURE BUILD TRAFFIC VOLUMES

The future Build traffic volumes were established by combining the site-generated traffic with the future No-Build traffic volumes. The resulting future Build traffic volumes are summarized on **Figure 9** in **Appendix A** for the study peak hours.

LEVEL OF SERVICE ASSESSMENT

A Volume/Capacity and Level of Service Analysis[1] was conducted for the future conditions at the study locations based on traffic signal field timings recorded by ATDE. The Synchro 10 summary printouts for future conditions are contained in **Appendix F**. Level of Service Summary tables are provided in **Appendix G.** The following is a narrative description of the vehicle capacity analysis results:

Chestnut Ridge Road (CR 73) & Tice Boulevard

The intersection is calculated to operate at an overall Level of Service C or better under No-Build conditions during each of the study peak hours. Under Build conditions, the intersection operates at an overall Level of Service D or better during each of the study peak hours. The individual Tice Boulevard movements were calculated to operate at a Level of Service E or better during each of the study peak hours with the exception of the eastbound approach during the weekday midday and weekday evening peak hours which were calculated to operate at a Level of Service F.

Timing mitigation was considered for each of the study peak hours in an effort to maintain No-Build Levels of Service under Build conditions. Reallocation of green time from the Chestnut Ridge Road (CR 73) right-of-way to the site street phases was found to mitigate the site traffic impacts.

Chestnut Ridge Road (CR 73) & Right-In/Right-Out Site Driveway

The unsignalized site driveway was calculated to operate at a Level of Service A under No-Build conditions and is calculated to operate at a Level of Service B or better under Build conditions. This driveway is calculated to operate generally consistent to No-Build Levels of Service under Build conditions.

[1] See **Appendix E** for Volume/Capacity and Level of Service description.

SITE ACCESS AND CIRCULATION

The Overall Site Layout Plan for the proposed Whole Foods Supermarket and retail development, prepared by Bohler Engineering, dated January 29, 2020, has been evaluated. In particular, the evaluation focuses on site access and parking supply. The following items address on-site design characteristics:

ACCESS

- Site access is provided via the signalized full-movement driveway at its intersection with Chestnut Ridge Road (CR 73) and a right-in/right-out driveway along northbound Chestnut Ridge Road (CR 73) located approximately 450 feet north of its intersection with Tice Boulevard.
- The existing site access and circulation of the shopping center will be maintained under proposed conditions.

PARKING

- The Borough requires 1 parking stall per 175 square feet of shopping center floor area, or 401 parking stalls.
- The Overall Site Layout Plan provides 407 parking stalls, including 8 ADA stalls, which exceeds the Borough requirement.

CONCLUSIONS

In summary, it has been determined from a review of projected future site-generated traffic conditions, the proposed development is not anticipated to significantly impact traffic conditions in the vicinity of the site with the implementation of timing mitigation adjustments to the traffic signal at the intersection of Chestnut Ridge Road (CR 73) and Tice Boulevard.

Research conducted by ATDE at a nearby Whole Foods Supermarket demonstrates that the redeveloped site would only generate a notable increase in site traffic during the weekday midday peak hour compared to the former ACME development. The street traffic volumes during the midday peak hour were found to be significantly lower than the other study peak hours which indicates that there is sufficient capacity for the proposed site redevelopment. The proposed parking supply exceeds the required amount of parking set by the Borough.

TECHNICAL APPENDIX

APPENDIX A – TRAFFIC VOLUME FIGURES

ATLANTIC TRAFFIC+DESIGN

FIGURE 1

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

SITE LOCATION MAP

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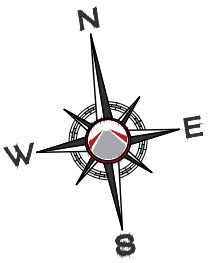
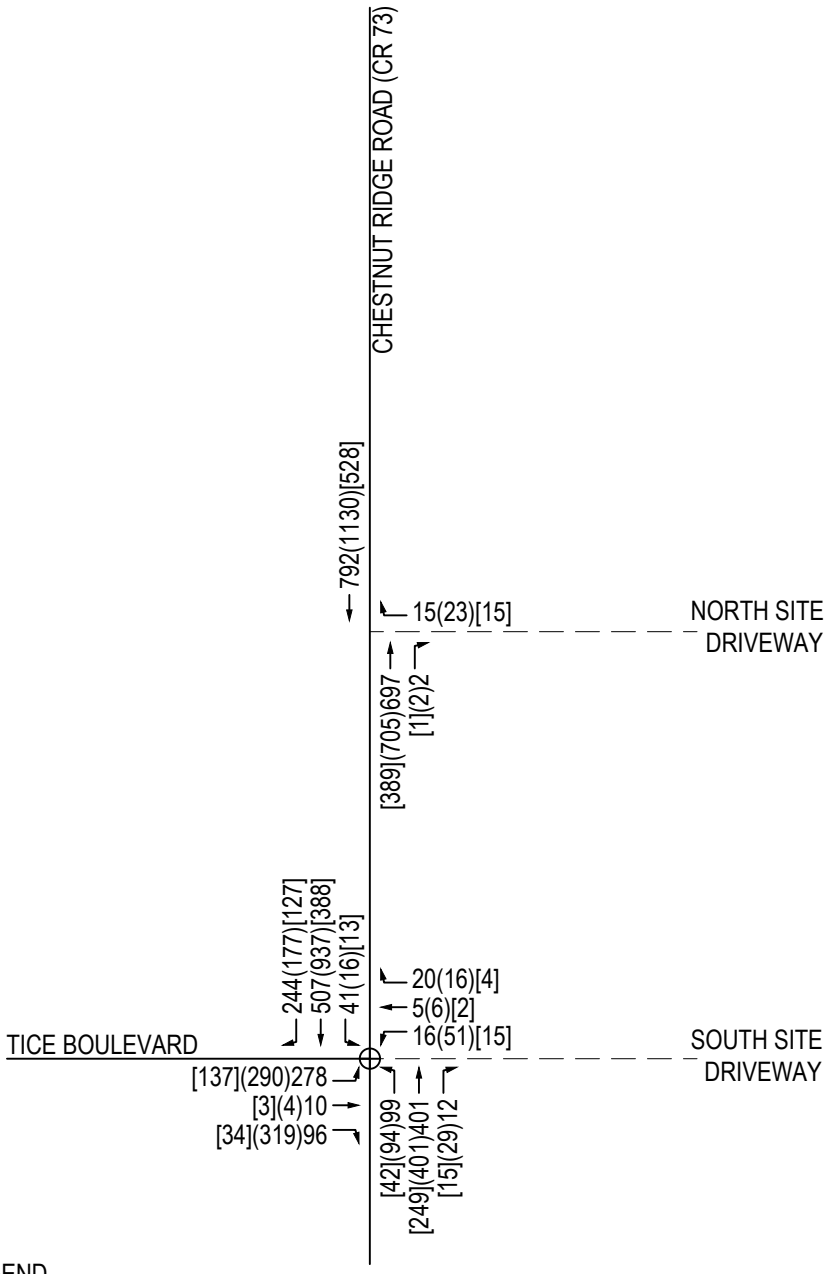
ATLANTIC TRAFFIC+DESIGN

FIGURE 2

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

EXISTING TRAFFIC VOLUMES





LEGEND

AA(BB)[CC]	MD(PM)[SAT] PEAK HOUR VOLUMES
———	EXISTING ROADWAY
– – – –	EXISTING DRIVEWAY
⊕	EXISTING TRAFFIC SIGNAL

PEAK HOUR	ENTER	EXIT	TOTAL
MD	65	56	121
PM	51	96	147
SAT	32	36	68

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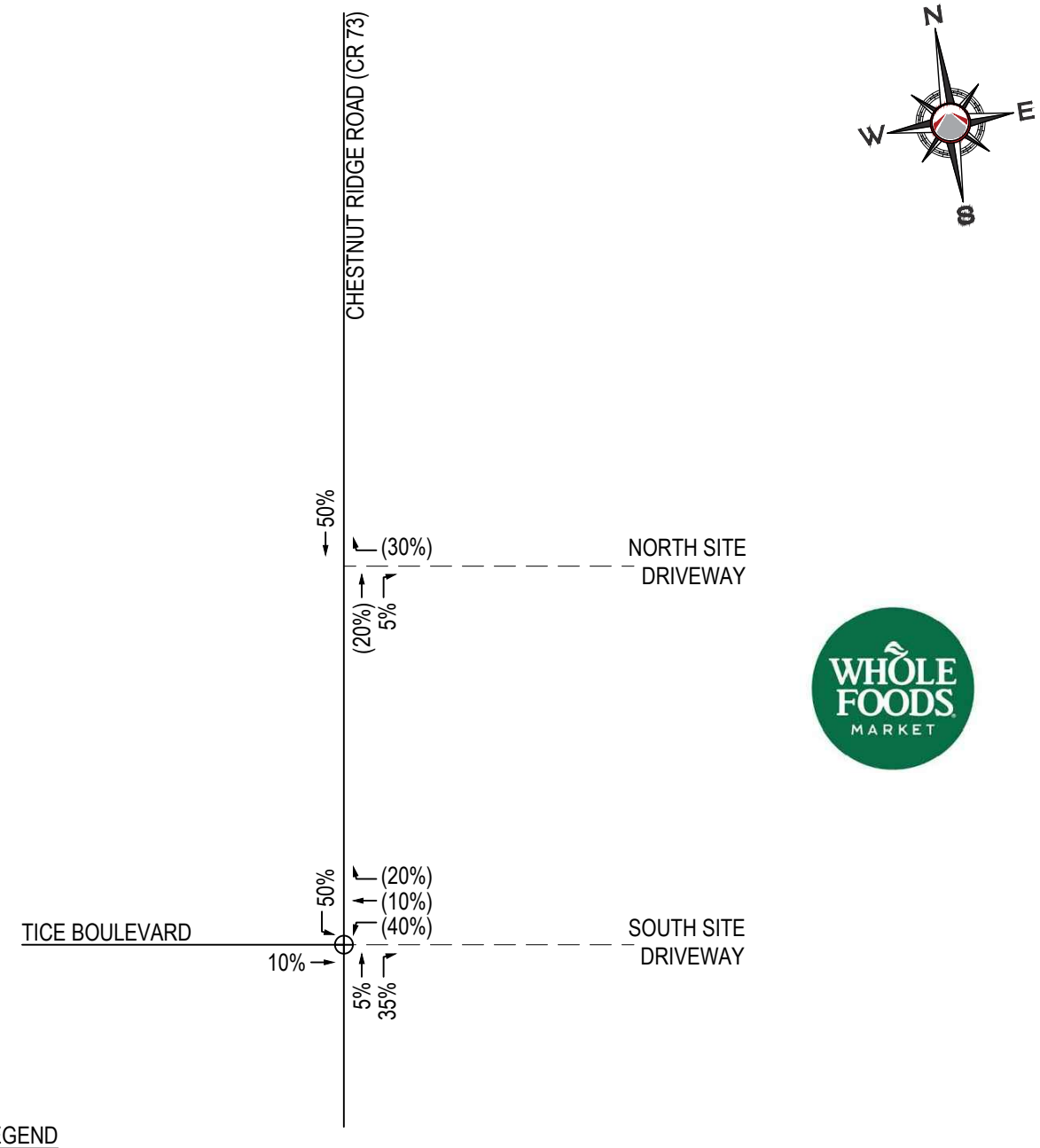
ATLANTIC TRAFFIC+DESIGN

FIGURE 3

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

DISTRIBUTION OF NEW PROJECT-GENERATED TRIPS



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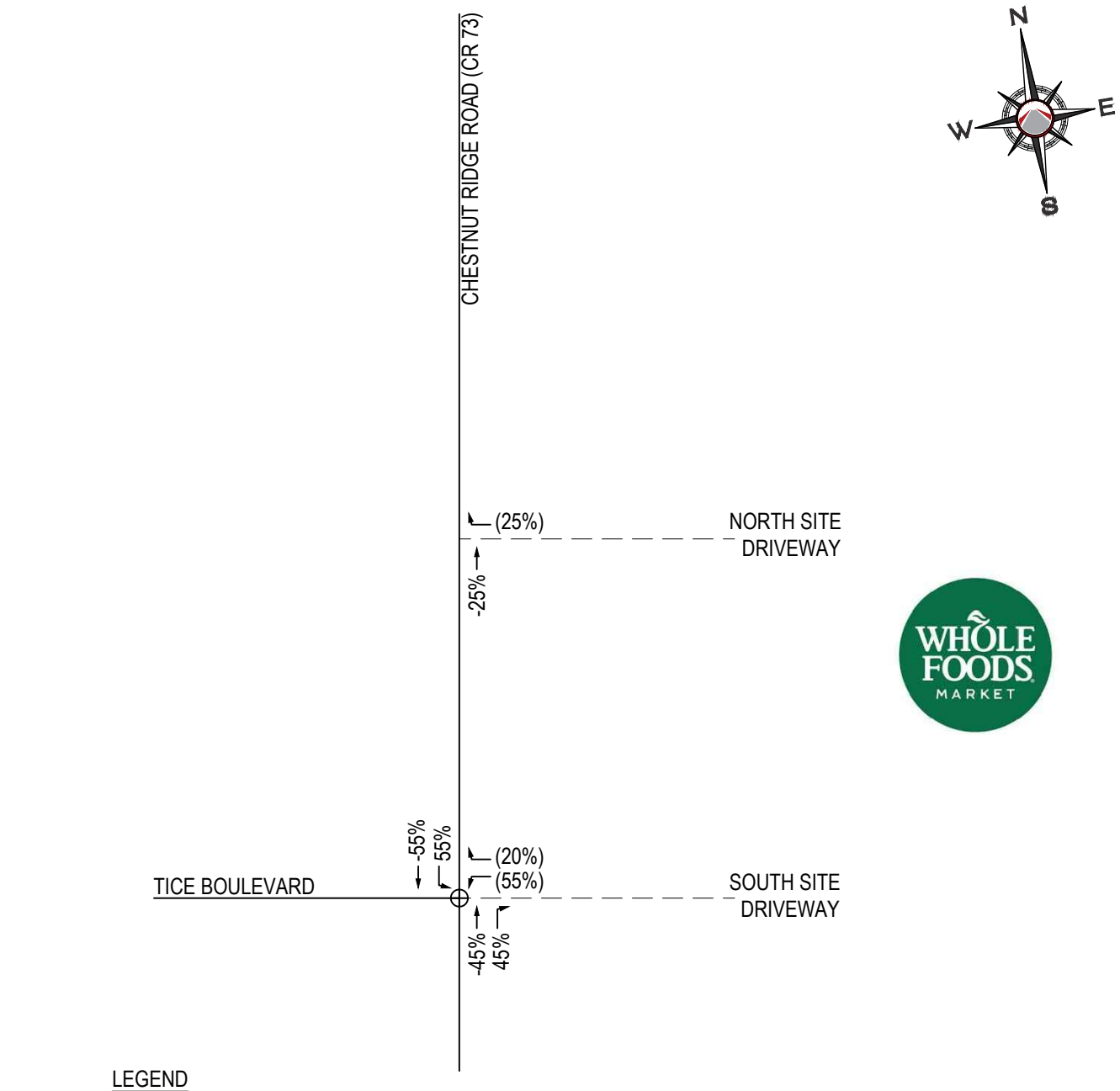
ATLANTIC TRAFFIC+DESIGN

FIGURE 4

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

DISTRIBUTION OF PASS-BY PROJECT-GENERATED TRIPS



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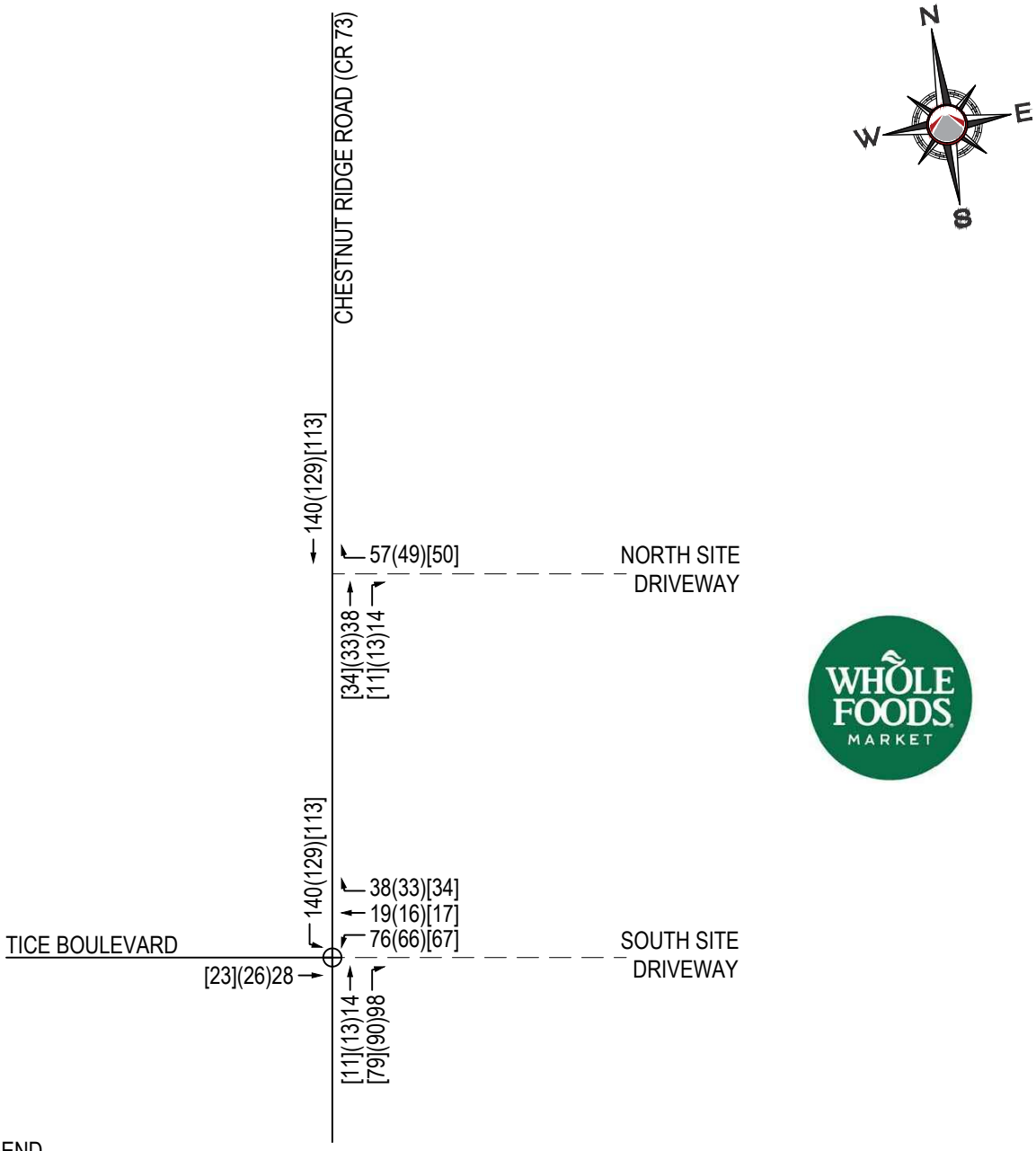
ATLANTIC TRAFFIC+DESIGN

FIGURE 5

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

PROJECT-GENERATED NEW TRAFFIC VOLUMES



LEGEND

AA(BB)[CC]	MD(PM)[SAT] PEAK HOUR VOLUMES
———	EXISTING ROADWAY
– – – –	EXISTING DRIVEWAY
⊕	EXISTING TRAFFIC SIGNAL
— —	PROPOSED DRIVEWAY
⊕	PROPOSED TRAFFIC SIGNAL

PEAK HOUR	ENTER	EXIT	TOTAL
MD	280	190	470
PM	258	164	422
SAT	226	168	394

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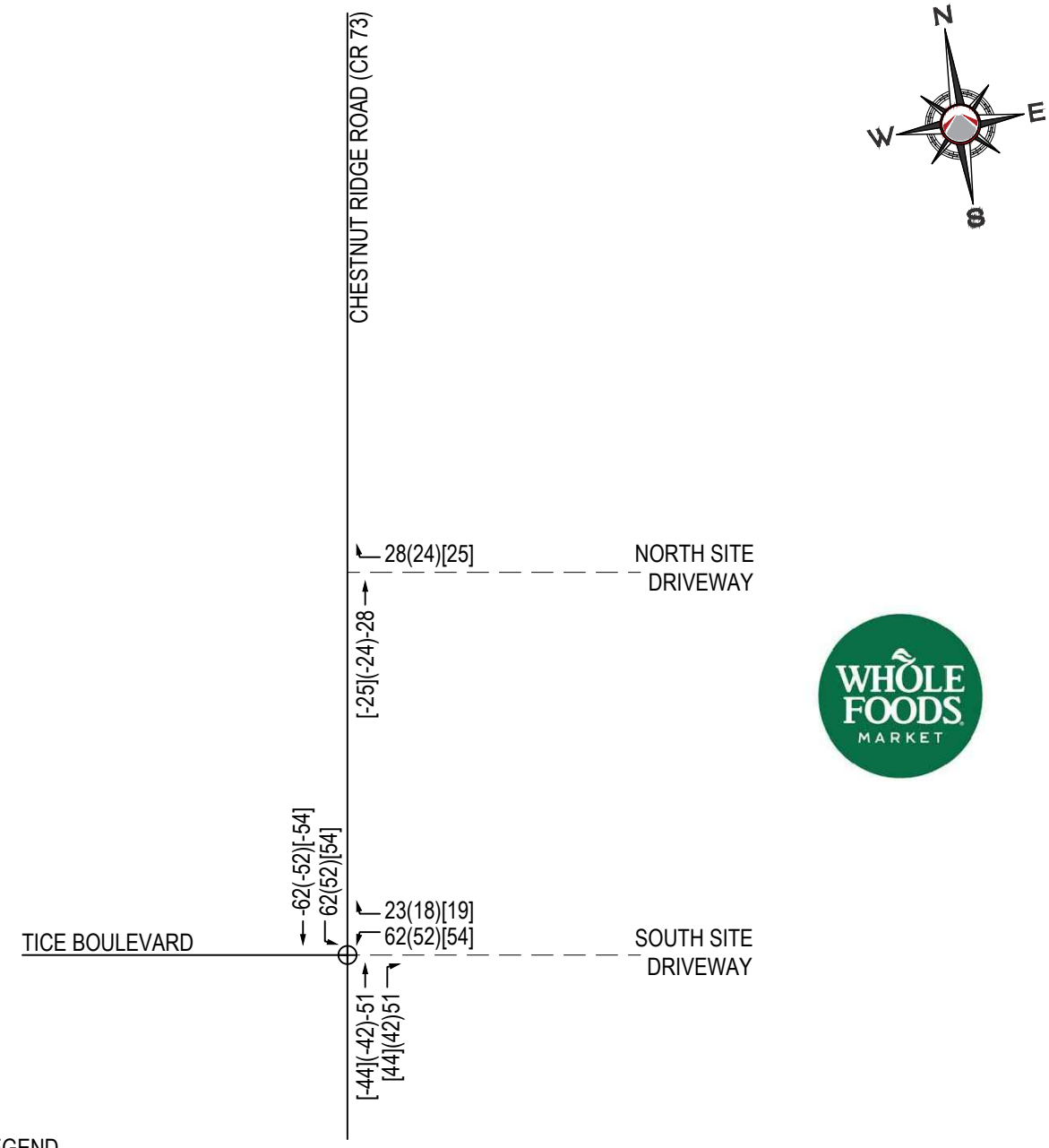
ATLANTIC TRAFFIC+DESIGN

FIGURE 6

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

PROJECT-GENERATED PASS-BY TRAFFIC VOLUMES



LEGEND

AA(BB)[CC]	MD(PM)[SAT] PEAK HOUR VOLUMES
———	EXISTING ROADWAY
- - - -	EXISTING DRIVEWAY
⊕	EXISTING TRAFFIC SIGNAL
— —	PROPOSED DRIVEWAY
◒	PROPOSED TRAFFIC SIGNAL

PEAK HOUR	ENTER	EXIT	TOTAL
MD	113	113	226
PM	94	94	188
SAT	98	98	196

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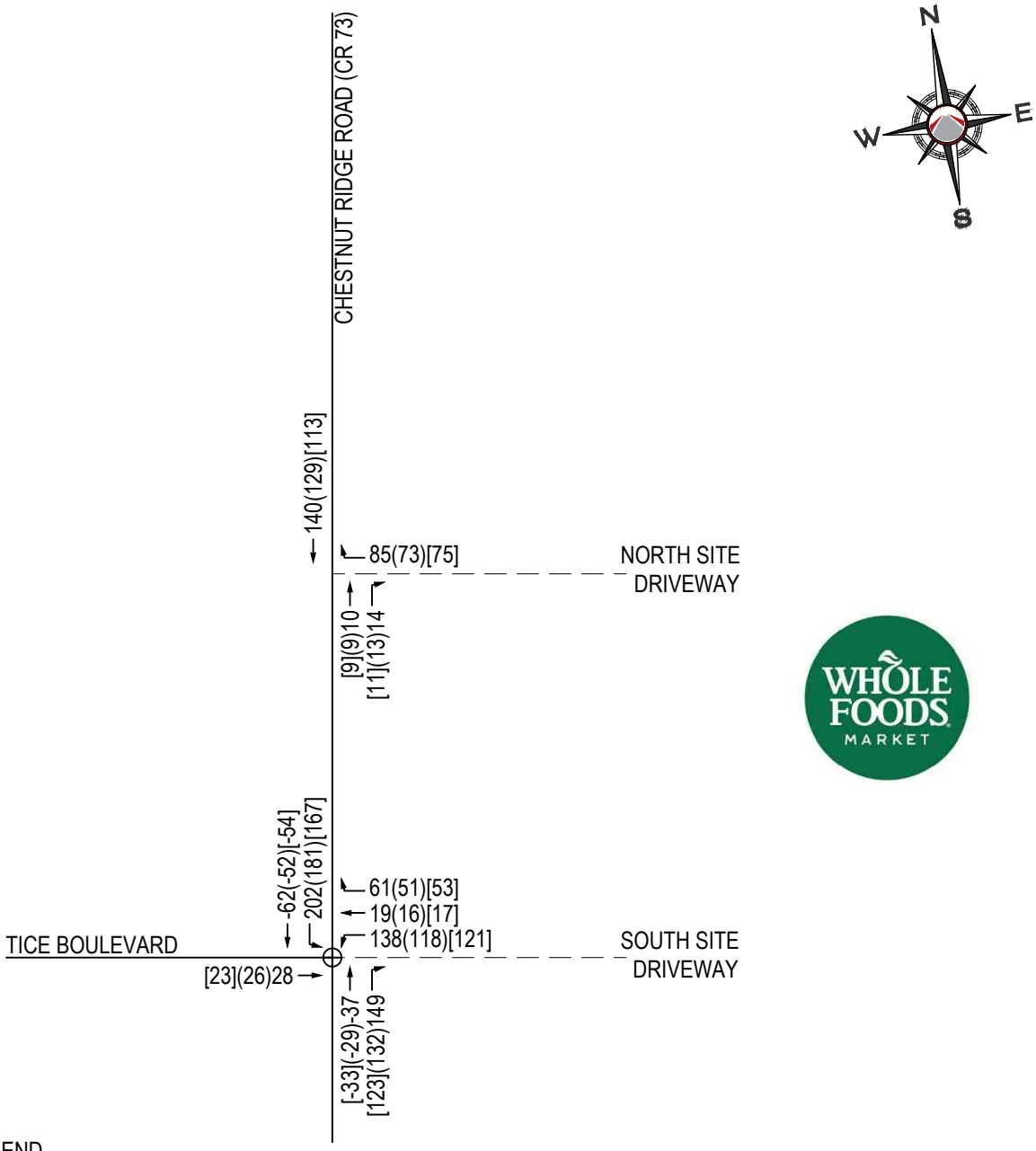
ATLANTIC TRAFFIC+DESIGN

FIGURE 7

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

TOTAL PROJECT-GENERATED TRAFFIC VOLUMES



LEGEND

AA(BB)[CC]	MD(PM)[SAT] PEAK HOUR VOLUMES
———	EXISTING ROADWAY
- - - -	EXISTING DRIVEWAY
⊕	EXISTING TRAFFIC SIGNAL
— —	PROPOSED DRIVEWAY
⊕	PROPOSED TRAFFIC SIGNAL

PEAK HOUR	ENTER	EXIT	TOTAL
MD	393	303	696
PM	352	258	610
SAT	324	266	590

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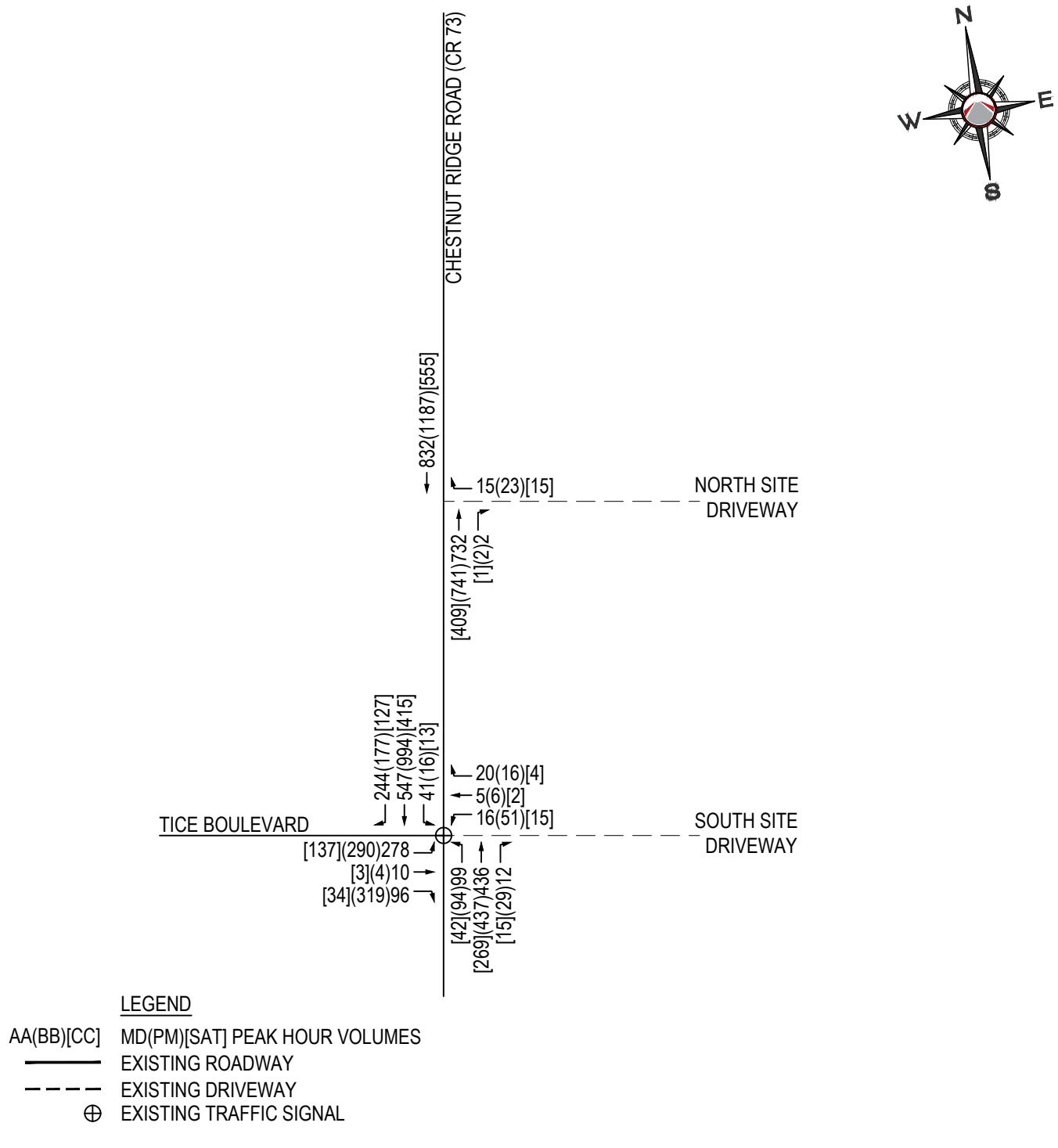
ATLANTIC TRAFFIC+DESIGN

FIGURE 8

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

FUTURE NO-BUILD TRAFFIC VOLUMES



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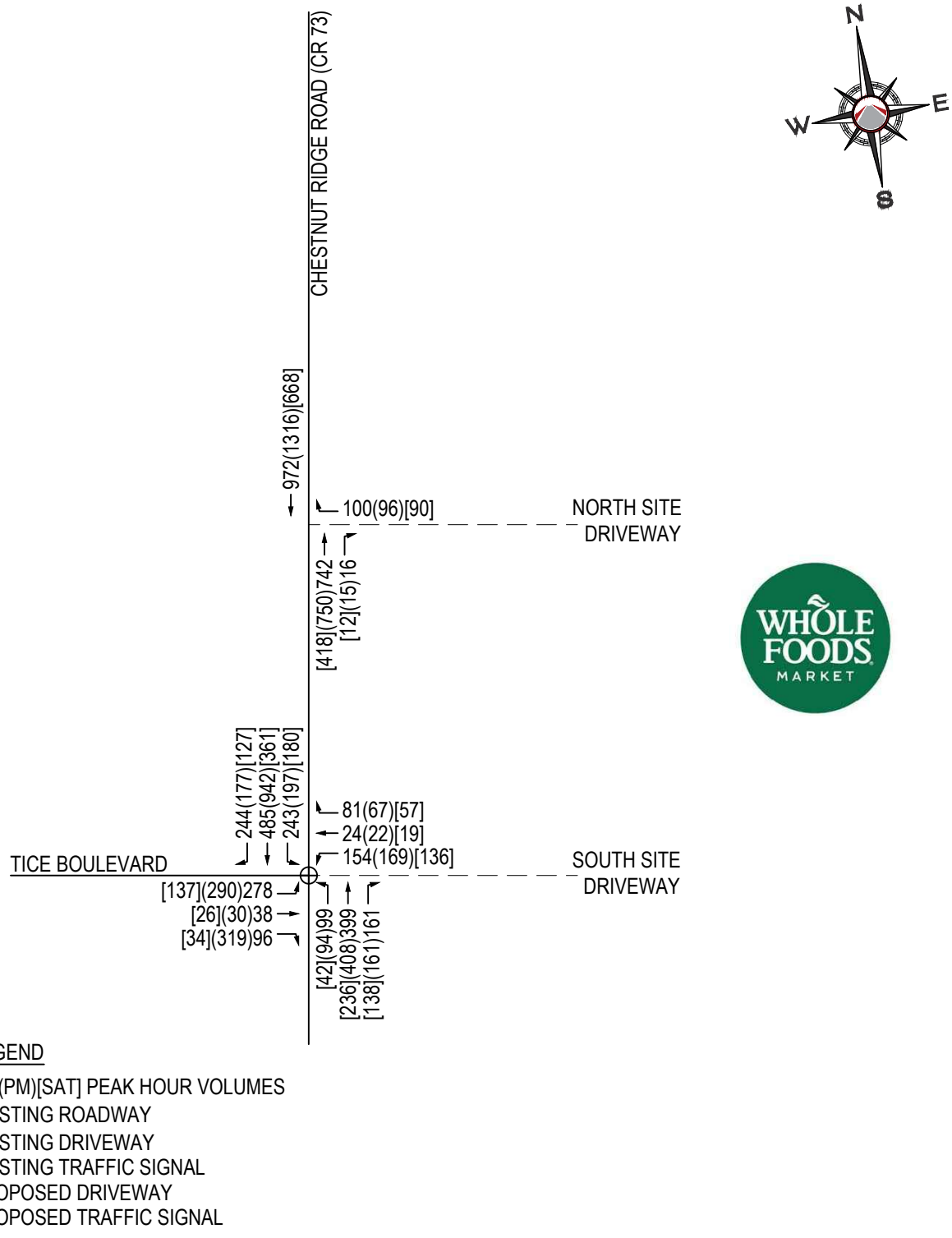
ATLANTIC TRAFFIC+DESIGN

FIGURE 9

PROPOSED WHOLE FOODS SUPERMARKET
WOODCLIFF LAKE BOROUGH
BERGEN COUNTY, NEW JERSEY

FUTURE BUILD TRAFFIC VOLUMES



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APPENDIX B – MANUAL TURNING MOVEMENT COUNT SUMMARY

35 Technology Drive
Warren, New Jersey 07059
908-769-5588
www.atlantictraffic.com

Whole Foods
500 Chestnut Ridge Road
Woodcliff Lake Borough
Bergen County, New Jersey

ATDE Project No. ANJ19204

SITE GENERATED TRAFFIC

Weekday Midday Peak Period

Wednesday, January 15, 2020

		Chestnut Ridge Road & Tice Boulevard												Chestnut Ridge Road & North Driveway		15-Min	Hour
Interval	Start Time	NB			EB			SB			WB			NB	WB	Sum	Sum
		L	T	R	L	T	R	L	T	R	L	T	R	R	R		
1	11:30 AM	23	72	2	40	1	6	8	94	45	4	1	2	0	3	301	1526
2	11:45 AM	17	87	4	59	0	11	4	112	37	5	4	4	0	1	345	1626
3	12:00 PM	19	104	4	69	2	16	7	137	56	4	1	8	0	5	432	1743
4	12:15 PM	26	99	4	70	4	32	7	141	50	6	1	4	0	4	448	1746
5	12:30 PM	17	91	4	59	0	25	13	118	59	5	2	4	0	4	401	1709
6	12:45 PM	20	121	3	75	2	18	12	125	71	3	1	5	1	5	462	1657
7	1:00 PM	36	90	1	74	4	21	9	123	64	2	1	7	1	2	435	
8	1:15 PM	28	80	6	63	5	29	6	123	61	5	0	2	0	3	411	
9	1:30 PM	19	77	2	55	2	14	6	112	50	6	3	2	0	1	349	
10	1:45 PM	16	101	4	44	1	17	4	136	61	3	1	3	0	2	393	

	Peak Hour Summary														Total	
	NB			EB			SB			WB			NB	WB	Enter	Exit
	L	T	R	L	T	R	L	T	R	L	T	R	R	R		
Peak Hour Volume	99	401	12	278	10	96	41	507	244	16	5	20	2	15	65	56
% Heavy Vehicles	3%	3%	17%	2%	0%	0%	7%	3%	1%	19%	0%	0%	50%	13%		
Peak Hour Factor		0.89			0.91			0.95			0.93		0.50	0.75		

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Warren, New Jersey 07059
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Whole Foods
500 Chestnut Ridge Road
Woodcliff Lake Borough
Bergen County, New Jersey

ATDE Project No. ANJ19204

SITE GENERATED TRAFFIC

Weekday Evening Peak Period

Wednesday, January 15, 2020

		Chestnut Ridge Road & Tice Boulevard												Chestnut Ridge Road & North		15-Min	Hour
Interval	Start Time	NB			EB			SB			WB			NB	WB	Sum	Sum
		L	T	R	L	T	R	L	T	R	L	T	R	R	R		
1	4:00 PM	18	116	5	69	2	50	3	177	34	7	0	3	2	3	489	1827
2	4:15 PM	17	112	5	39	2	44	0	177	51	5	1	1	0	4	458	1936
3	4:30 PM	20	77	6	62	1	41	3	145	24	7	3	4	0	2	395	2117
4	4:45 PM	21	88	7	59	1	66	5	184	36	8	2	4	2	2	485	2365
5	5:00 PM	29	95	10	70	1	87	5	223	49	15	1	4	0	9	598	2351
6	5:15 PM	23	118	6	80	1	78	4	243	53	17	3	4	0	9	639	2205
7	5:30 PM	21	100	6	81	1	88	2	287	39	11	0	4	0	3	643	1960
8	5:45 PM	6	82	1	78	1	71	0	181	35	9	1	2	1	3	471	1653
9	6:00 PM	15	89	2	64	1	48	5	193	24	6	2	1	0	2	452	
10	6:15 PM	12	75	3	49	0	44	5	165	31	4	1	4	0	1	394	
11	6:30 PM	12	56	3	37	1	31	2	147	37	3	3	2	0	2	336	
12	6:45 PM	10	45	2	42	2	30	1	131	18	9	1	0	0	1	292	

	Peak Hour Summary														Total	
	NB			EB			SB			WB			NB	WB	Enter	Exit
	L	T	R	L	T	R	L	T	R	L	T	R	R	R		
Peak Hour Volume	94	401	29	290	4	319	16	937	177	51	6	16	2	23	51	96
% Heavy Vehicles	3%	1%	3%	1%	25%	0%	0%	0%	0%	2%	0%	6%	0%	0%		
Peak Hour Factor		0.89			0.90			0.86			0.76		0.25	0.64		

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Whole Foods
500 Chestnut Ridge Road
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Bergen County, New Jersey

ATDE Project No. ANJ19204

SITE GENERATED TRAFFIC

Weekend Peak Period

Saturday, January 25, 2020

		Chestnut Ridge Road & Tice Boulevard												Chestnut Ridge Road & North Driveway		15-Min	Hour
Interval	Start Time	NB			EB			SB			WB			NB	WB	Sum	Sum
		L	T	R	L	T	R	L	T	R	L	T	R	R	R		
1	11:00 AM	8	68	4	29	1	4	3	98	23	1	0	1	0	3	243	1024
2	11:15 AM	8	56	8	35	1	6	4	88	35	4	0	1	0	7	253	1045
3	11:30 AM	12	74	2	27	0	9	4	104	27	6	2	3	0	3	273	1030
4	11:45 AM	13	61	1	37	1	9	2	98	29	2	0	0	0	2	255	983
5	12:00 PM	9	58	4	38	1	10	3	98	36	3	0	0	1	3	264	972
6	12:15 PM	5	55	2	37	0	9	3	99	25	2	1	0	0	0	238	991
7	12:30 PM	6	52	1	36	0	11	2	95	18	1	1	1	0	2	226	1011
8	12:45 PM	11	74	1	27	2	6	4	87	24	1	0	1	0	6	244	1037
9	1:00 PM	8	85	4	30	0	14	2	97	38	2	0	0	0	3	283	1024
10	1:15 PM	10	67	5	28	2	10	5	93	29	3	1	2	0	3	258	948
11	1:30 PM	6	79	4	33	0	11	2	87	19	3	1	1	0	6	252	901
12	1:45 PM	9	67	2	26	0	7	3	87	24	4	1	0	0	1	231	879
13	2:00 PM	6	54	2	27	1	5	2	81	25	3	0	1	0	0	207	859
14	2:15 PM	9	50	2	32	1	9	2	76	27	2	0	0	0	1	211	
15	2:30 PM	14	52	4	28	2	6	4	91	22	3	0	1	0	3	230	
16	2:45 PM	12	55	1	19	0	9	6	89	13	4	0	3	0	0	211	

	Peak Hour Summary														Total	
	NB			EB			SB			WB			NB	WB	Enter	Exit
	L	T	R	L	T	R	L	T	R	L	T	R	R	R		
Peak Hour Volume	42	249	15	137	3	34	13	388	127	15	2	4	1	15	32	36
% Heavy Vehicles	0%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%		
Peak Hour Factor		0.87			0.89			0.96			0.48		0.25	0.54		

APPENDIX C – ATDE WHOLE FOODS RESEARCH DATA

35 Technology Drive
Warren, New Jersey 07059
908-769-5588
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Whole Foods
44 Godwin Avenue
Village of Ridgewood
Bergen County, New Jersey

ATDE Project No. ANJ19204

SITE GENERATED TRAFFIC RESEARCH - 25,200 SF WHOLE FOODS MARKET

Weekday Midday Peak Period — **Wednesday, January 15, 2020**

		Whole Foods West Driveway & Godwin Avenue					Whole Foods East Driveway & Godwin Avenue					15-Min	Hour
Interval	Start Time	NB		EB		WB	NB		EB	WB		Sum	Sum
		L	R	T	R	L	L	R	R	L	T		
1	11:30 AM	17	6	95	20	13	0	5	0	0	53	209	938
2	11:45 AM	22	4	90	22	16	1	2	0	1	87	245	972
3	12:00 PM	22	1	89	18	17	0	2	0	1	75	225	987
4	12:15 PM	15	11	112	22	21	1	2	0	1	74	259	1021
5	12:30 PM	22	11	86	18	15	2	1	0	0	88	243	1031
6	12:45 PM	21	6	89	21	23	2	2	0	2	94	260	1029
7	1:00 PM	16	8	88	30	23	2	4	0	2	86	259	1021
8	1:15 PM	18	15	95	27	22	0	5	0	0	87	269	
9	1:30 PM	25	12	70	25	26	0	7	0	0	76	241	
10	1:45 PM	22	11	84	24	24	2	6	0	0	79	252	

	Peak Hour Summary										Total	
	NB		EB		WB	NB		EB	WB		Enter	Exit
	L	R	T	R	L	L	R	R	L	T		
Peak Hour Volume	81	46	337	106	95	4	22	0	2	328	203	153
% Heavy Vehicles	0%	2%	3%	1%	0%	0%	0%	0%	0%	3%		
Peak Hour Factor	0.86		0.91		0.91	0.81		No Data	0.94			

Peak Hour of the Generator
Peak Hour of the Street

K:\2019\ANJ19204\Data Collection-Photos\Data Summary\Research Location\ANJ19204 TMC Summary.xlsx

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SITE GENERATED TRAFFIC RESEARCH - 25,200 SF WHOLE FOODS MARKET

Weekday Evening Peak Period — **Wednesday, January 15, 2020**

		Whole Foods West Driveway & Godwin Avenue					Whole Foods East Driveway & Godwin Avenue					15-Min	Hour
Interval	Start Time	NB		EB		WB	NB		EB	WB		Sum	Sum
		L	R	T	R	L	L	R	R	L	T		
1	4:00 PM	22	3	97	29	17	2	0	0	2	117	289	1100
2	4:15 PM	17	13	80	17	17	4	2	0	0	127	277	1111
3	4:30 PM	16	10	76	27	23	5	2	0	0	105	264	1139
4	4:45 PM	21	8	91	17	19	2	0	0	0	112	270	1207
5	5:00 PM	17	11	108	29	25	0	0	0	0	110	300	1192
6	5:15 PM	16	16	89	20	23	3	0	0	0	138	305	1157
7	5:30 PM	19	12	91	24	17	3	2	0	0	164	332	1104
8	5:45 PM	21	9	89	16	23	2	0	0	0	95	255	1038
9	6:00 PM	21	8	97	18	15	2	0	0	0	104	265	1038
10	6:15 PM	19	7	97	22	17	2	0	0	0	88	252	
11	6:30 PM	13	5	97	28	14	1	0	0	0	108	266	
12	6:45 PM	28	2	102	23	15	0	0	0	0	85	255	

	Peak Hour Summary										Total	
	NB		EB		WB	NB		EB	WB		Enter	Exit
	L	R	T	R	L	L	R	R	L	T		
Peak Hour Volume	70	45	364	93	90	10	2	0	0	465	183	127
% Heavy Vehicles	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%		
Peak Hour Factor	0.90		0.83		0.90	0.43		No Data	0.84			

Peak Hour of the Generator
Peak Hour of the Street

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SITE GENERATED TRAFFIC RESEARCH - 25,200 SF WHOLE FOODS MARKET

Weekend Peak Period — **Saturday, January 25, 2020**

		Whole Foods West Driveway & Godwin Avenue					Whole Foods East Driveway & Godwin Avenue					15-Min	Hour
Interval	Start Time	NB		EB		WB	NB		EB	WB		Sum	Sum
		L	R	T	R	L	L	R	R	L	T		
1	11:00 AM	15	6	70	21	7	0	0	0	4	63	186	978
2	11:15 AM	21	9	102	18	19	0	0	0	1	73	243	1073
3	11:30 AM	14	8	99	35	23	0	0	0	1	97	277	1123
4	11:45 AM	21	11	102	27	16	2	0	0	3	90	272	1101
5	12:00 PM	18	17	106	23	14	0	2	0	1	100	281	1104
6	12:15 PM	18	15	107	26	8	0	0	0	0	119	293	1110
7	12:30 PM	17	17	94	25	14	0	0	0	4	84	255	1086
8	12:45 PM	19	9	109	16	20	0	0	0	0	102	275	1084
9	1:00 PM	21	16	98	36	18	9	5	0	1	83	287	1073
10	1:15 PM	20	11	105	24	17	0	2	0	1	89	269	1066
11	1:30 PM	16	10	82	20	15	1	4	0	0	105	253	1045
12	1:45 PM	31	8	94	15	13	1	1	0	0	101	264	991
13	2:00 PM	18	9	114	29	23	0	0	0	0	87	280	981
14	2:15 PM	18	8	89	20	11	0	0	0	0	102	248	
15	2:30 PM	20	10	65	18	22	0	0	0	0	64	199	
16	2:45 PM	29	12	96	21	9	2	1	0	0	84	254	

	Peak Hour Summary										Total	
	NB		EB		WB	NB		EB	WB		Enter	Exit
	L	R	T	R	L	L	R	R	L	T		
Peak Hour Volume	77	53	406	101	69	9	7	0	6	358	176	146
% Heavy Vehicles	0%	0%	1%	0%	1%	0%	0%	0%	0%	1%		
Peak Hour Factor	0.88		0.95		0.86	0.29		No Data	0.89			

Peak Hour of the Generator
Peak Hour of the Street

APPENDIX D – ITE TRIP GENERATION

Shopping Center
(820)

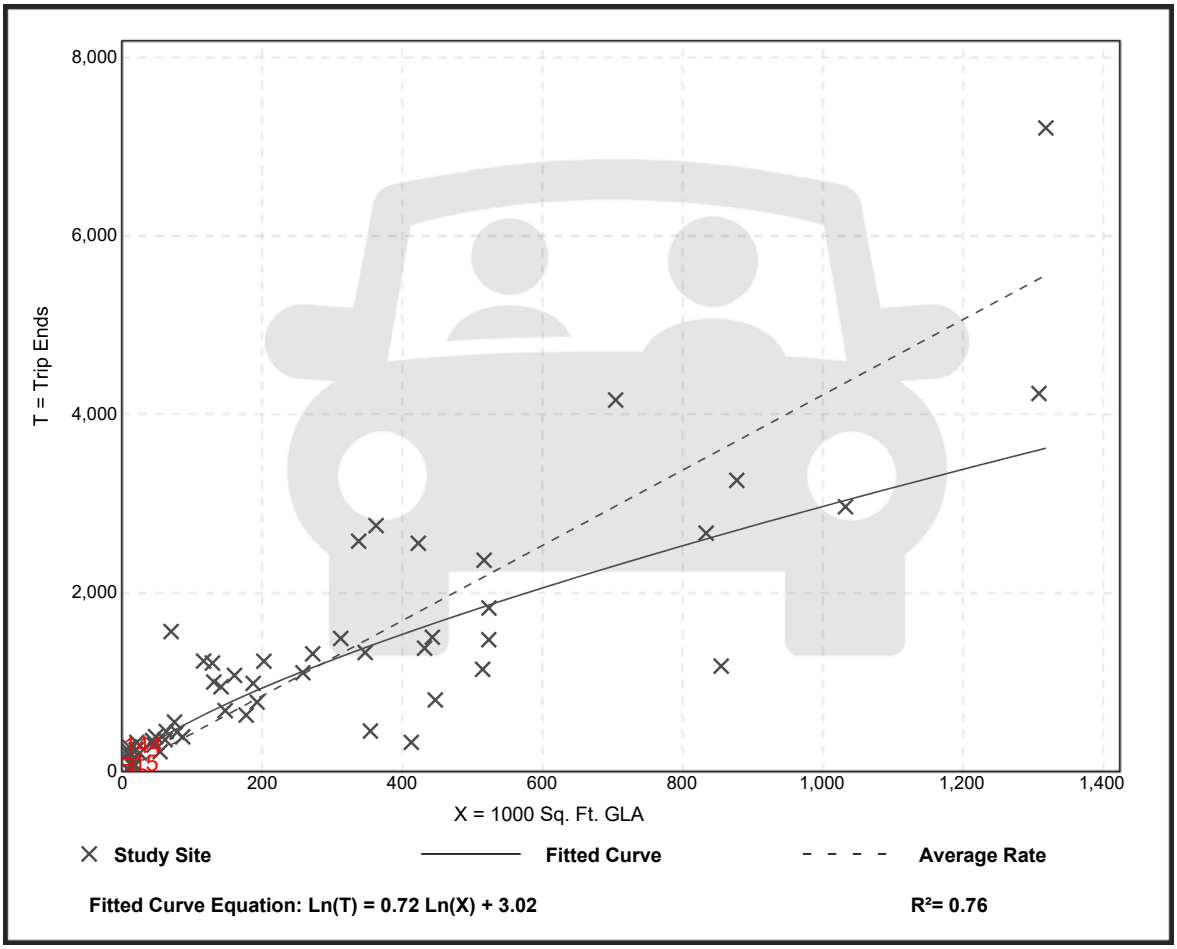
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GLA: 298
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.21	0.78 - 27.27	2.47

Data Plot and Equation



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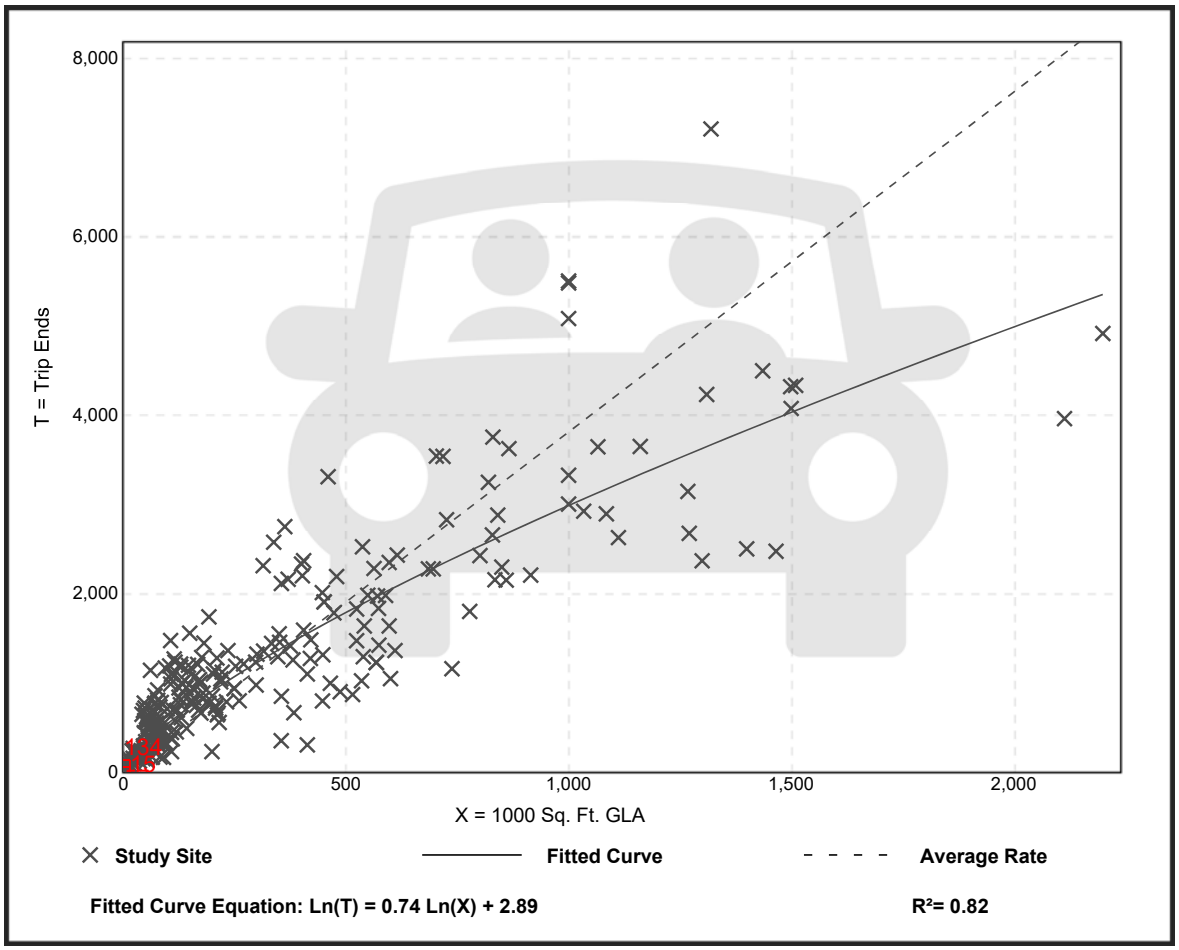
Shopping Center
(820)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 261
Avg. 1000 Sq. Ft. GLA: 327
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation



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Shopping Center
(820)

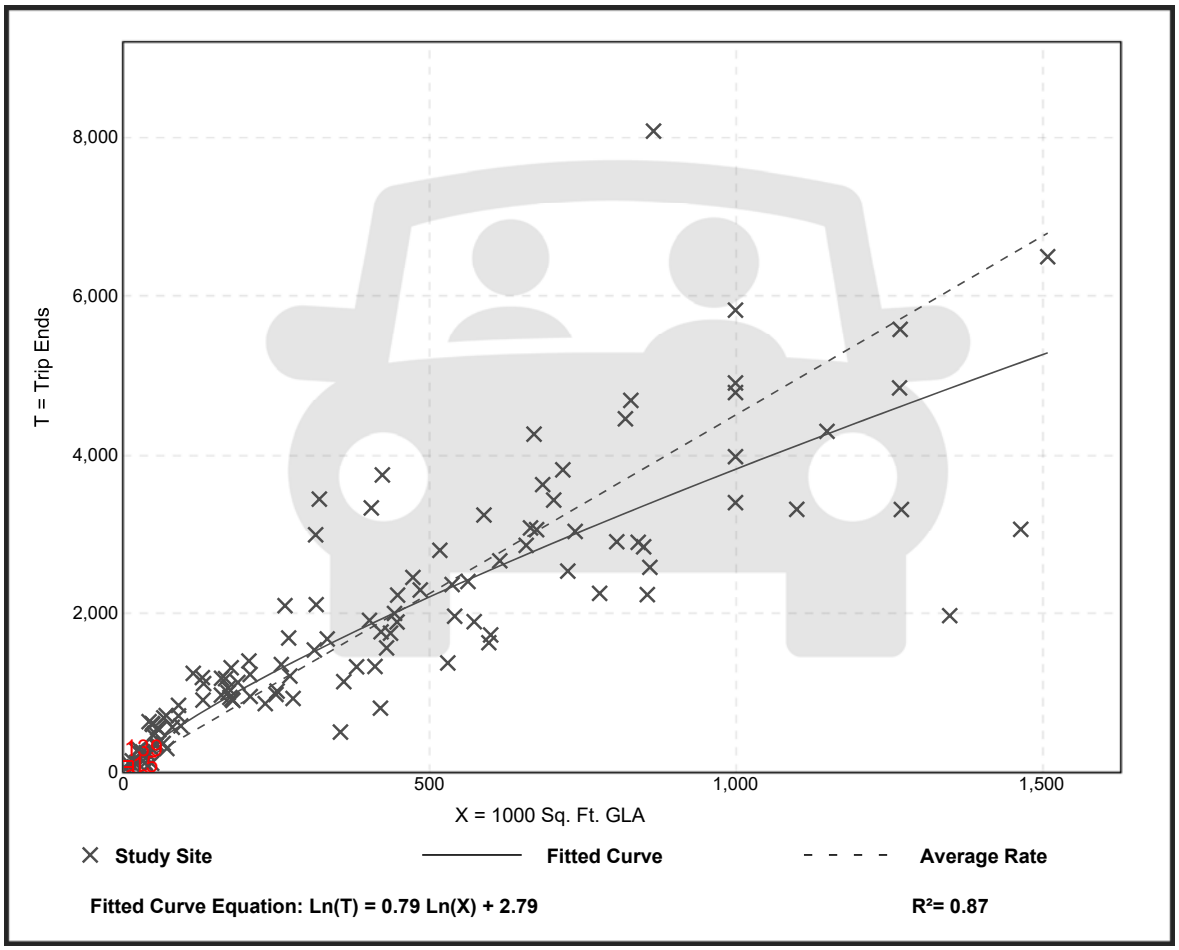
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 119
Avg. 1000 Sq. Ft. GLA: 416
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.50	1.42 - 15.10	1.88

Data Plot and Equation



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APPENDIX E – LEVEL OF SERVICE DESCRIPTION

TABLE E-I
LEVEL OF SERVICE AND EXPECTED DELAY
FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	AVERAGE TOTAL DELAY (SEC./VEH.)
A	≤10
B	>10 and ≤ 15
C	>15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

* Transportation Research Board, Highway Capacity Manual, HCM2010, 2010, by the Transportation Research Board, Washington, D.C.

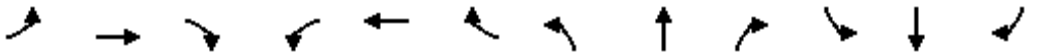
T A B L E E-II

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	DESCRIPTION	AVERAGE TOTAL DELAY PER VEHICLE (SECONDS)
A	Very short delay, good progression; most vehicles do not stop at intersection.	≤ 10
B	Generally good signal progression and/or short cycle length; more vehicles stop at intersection than Level of Service A.	>10 and ≤ 20
C	Fair progression and/or longer cycle length; significant number of vehicles stop at intersection.	>20 and ≤ 35
D	Congestion becomes noticeable; individual cycle failures; longer delays from unfavorable progression, long cycle length; or high volume/capacity ratios; most vehicles stop at intersection.	>35 and ≤ 55
E	Usually considered limit of acceptable delay indicative of poor progression long cycle length, or high volume/capacity ratio; frequent individual cycle failures.	>55 and ≤ 80
F	Could be considered excessive delay in some areas, frequently an indication or over-saturation (i.e., arrival flows exceed capacity), or very long cycle lengths with minimal side street green time. Capacity is not necessarily exceeded under this Level of Service.	> 80.0

* Transportation Research Board, *Highway Capacity Manual*, *HCM2010*, 2010, published by the Transportation Research Board, Washington, D.C.

APPENDIX F – SYNCHRO 10 SUMMARY PRINTOUTS

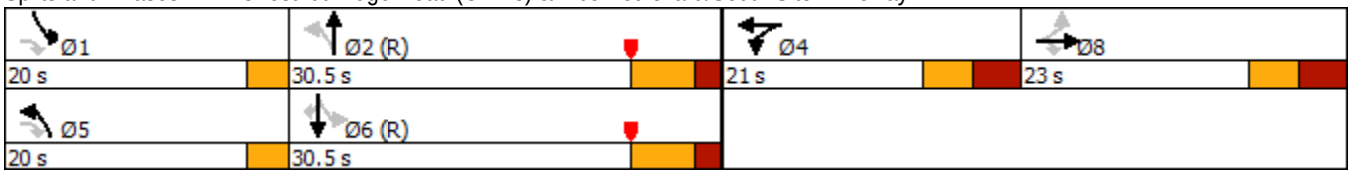


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	10	96	16	5	20	99	436	12	41	547	244
Future Volume (vph)	278	10	96	16	5	20	99	436	12	41	547	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.886			0.996				0.850
Flt Protected	0.950	0.956		0.950	0.997		0.950			0.950		
Satd. Flow (prot)	1641	1654	1849	1419	1550	0	1761	3613	0	1582	3522	1714
Flt Permitted	0.737	0.719		0.950	0.997		0.372			0.467		
Satd. Flow (perm)	1273	1244	1849	1419	1550	0	690	3613	0	778	3522	1714
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			121									257
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	19%	0%	0%	3%	3%	17%	7%	3%	1%
Adj. Flow (vph)	305	11	105	17	5	22	111	490	13	43	576	257
Shared Lane Traffic (%)	48%			10%								
Lane Group Flow (vph)	159	157	105	15	29	0	111	503	0	43	576	257
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	24.0		5.0	24.0	24.0
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	30.5		8.0	30.5	30.5
Total Split (s)	23.0	23.0		21.0	21.0		20.0	30.5		20.0	30.5	30.5
Total Split (%)	24.3%	24.3%		22.2%	22.2%		21.2%	32.3%		21.2%	32.3%	32.3%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	16.5	16.5	30.9	8.2	8.2		57.9	48.0		54.4	45.0	45.0
Actuated g/C Ratio	0.17	0.17	0.33	0.09	0.09		0.61	0.51		0.58	0.48	0.48
v/c Ratio	0.72	0.72	0.15	0.12	0.22		0.22	0.27		0.09	0.34	0.27
Control Delay	54.0	54.9	3.2	42.2	44.3		11.3	17.2		11.2	19.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	54.0	54.9	3.2	42.2	44.3		11.3	17.2		11.2	19.4	3.8
LOS	D	D	A	D	D		B	B		B	B	A
Approach Delay		41.7			43.6			16.1			14.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			B			B	
Queue Length 50th (ft)	94	93	0	8	17		30	102		11	125	0
Queue Length 95th (ft)	158	158	24	29	46		62	160		30	197	52
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	244	239	858	210	229		622	1835		628	1676	950
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.65	0.66	0.12	0.07	0.13		0.18	0.27		0.07	0.34	0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 94.5			
Actuated Cycle Length: 94.5			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 21.5		Intersection LOS: C	
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway



Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	15	732	2	0	832
Future Vol, veh/h	0	15	732	2	0	832
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	0	-	-	2
Peak Hour Factor	75	75	89	65	95	95
Heavy Vehicles, %	0	13	3	50	0	3
Mvmt Flow	0	20	822	3	0	876

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	413	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.56	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.43	-	-	-	-
Pot Cap-1 Maneuver	0	*759	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*759	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	759	-
HCM Lane V/C Ratio	-	-	0.026	-
HCM Control Delay (s)	-	-	9.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

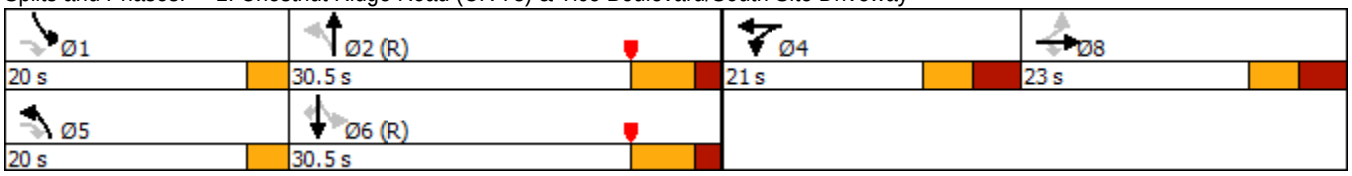
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	4	319	51	6	16	94	437	29	16	994	177
Future Volume (vph)	290	4	319	51	6	16	94	437	29	16	994	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.933			0.991				0.850
Flt Protected	0.950	0.954		0.950	0.981		0.950			0.950		
Satd. Flow (prot)	1658	1655	1849	1656	1573	0	1761	3674	0	1693	3628	1731
Flt Permitted	0.725	0.695		0.950	0.981		0.104			0.446		
Satd. Flow (perm)	1265	1206	1849	1656	1573	0	193	3674	0	795	3628	1731
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			226									162
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.90	0.90	0.90	0.76	0.76	0.76	0.89	0.89	0.89	0.86	0.86	0.86
Heavy Vehicles (%)	1%	25%	0%	2%	0%	6%	3%	1%	3%	0%	0%	0%
Adj. Flow (vph)	322	4	354	67	8	21	106	491	33	19	1156	206
Shared Lane Traffic (%)	49%			27%								
Lane Group Flow (vph)	164	162	354	49	47	0	106	524	0	19	1156	206
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	24.0		5.0	24.0	24.0
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	30.5		8.0	30.5	30.5
Total Split (s)	23.0	23.0		21.0	21.0		20.0	30.5		20.0	30.5	30.5
Total Split (%)	24.3%	24.3%		22.2%	22.2%		21.2%	32.3%		21.2%	32.3%	32.3%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	17.4	17.4	31.8	8.6	8.6		53.4	42.7		49.4	40.6	40.6
Actuated g/C Ratio	0.18	0.18	0.34	0.09	0.09		0.57	0.45		0.52	0.43	0.43
v/c Ratio	0.70	0.73	0.46	0.33	0.33		0.46	0.32		0.04	0.74	0.25
Control Delay	52.3	55.2	9.8	46.1	46.5		17.9	19.2		12.0	29.3	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	52.3	55.2	9.8	46.1	46.5		17.9	19.2		12.0	29.3	7.0
LOS	D	E	A	D	D		B	B		B	C	A
Approach Delay		30.9			46.3			19.0			25.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			D			B			C	
Queue Length 50th (ft)	95	94	53	29	28		30	111		5	322	16
Queue Length 95th (ft)	#171	#181	117	54	53		60	161		16	#460	61
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	247	236	937	245	233		393	1661		620	1558	836
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.66	0.69	0.38	0.20	0.20		0.27	0.32		0.03	0.74	0.25

Intersection Summary

Area Type: Other
Cycle Length: 94.5
Actuated Cycle Length: 94.5
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 26.2 Intersection LOS: C
Intersection Capacity Utilization 68.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway



Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	23	741	2	0	1187
Future Vol, veh/h	0	23	741	2	0	1187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	0	-	-	2
Peak Hour Factor	65	65	89	65	86	86
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	0	35	833	3	0	1380

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	418	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.3	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	*789	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*789	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	789	-
HCM Lane V/C Ratio	-	-	0.045	-
HCM Control Delay (s)	-	-	9.8	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

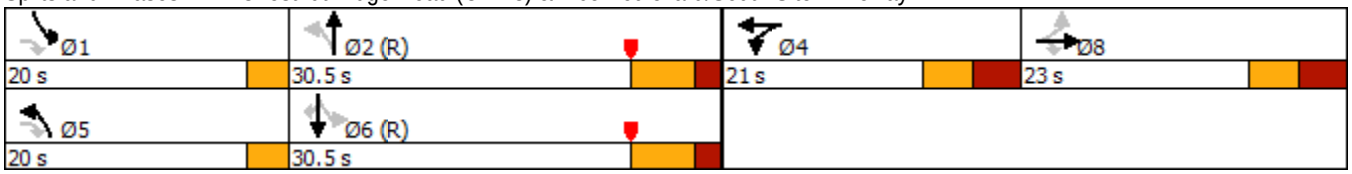
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	3	34	15	2	4	42	269	15	13	415	127
Future Volume (vph)	137	3	34	15	2	4	42	269	15	13	415	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.944			0.992				0.850
Flt Protected	0.950	0.954		0.950	0.979		0.950			0.950		
Satd. Flow (prot)	1674	1681	1849	1689	1643	0	1814	3684	0	1693	3592	1731
Flt Permitted	0.746	0.722		0.950	0.979		0.487			0.555		
Satd. Flow (perm)	1315	1272	1849	1689	1643	0	930	3684	0	989	3592	1731
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			121									162
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.89	0.89	0.89	0.65	0.65	0.65	0.87	0.87	0.87	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	154	3	38	23	3	6	48	309	17	14	432	132
Shared Lane Traffic (%)	49%			29%								
Lane Group Flow (vph)	79	78	38	16	16	0	48	326	0	14	432	132
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	24.0		5.0	24.0	24.0
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	30.5		8.0	30.5	30.5
Total Split (s)	23.0	23.0		21.0	21.0		20.0	30.5		20.0	30.5	30.5
Total Split (%)	24.3%	24.3%		22.2%	22.2%		21.2%	32.3%		21.2%	32.3%	32.3%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	10.7	10.7	21.8	8.0	8.0		66.5	60.7		64.8	58.5	58.5
Actuated g/C Ratio	0.11	0.11	0.23	0.08	0.08		0.70	0.64		0.69	0.62	0.62
v/c Ratio	0.53	0.54	0.07	0.11	0.12		0.07	0.14		0.02	0.19	0.12
Control Delay	51.8	52.8	0.3	42.0	42.1		7.6	11.2		8.0	12.3	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	51.8	52.8	0.3	42.0	42.1		7.6	11.2		8.0	12.3	1.8
LOS	D	D	A	D	D		A	B		A	B	A
Approach Delay		42.2			42.0			10.7			9.8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			B			A	
Queue Length 50th (ft)	48	47	0	9	9		10	53		3	73	0
Queue Length 95th (ft)	90	91	0	22	22		26	85		12	120	21
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	222	215	704	250	243		825	2364		835	2224	1133
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.36	0.36	0.05	0.06	0.07		0.06	0.14		0.02	0.19	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 94.5			
Actuated Cycle Length: 94.5			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 16.3		Intersection LOS: B	
Intersection Capacity Utilization 49.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway



Intersection	
Int Delay, s/veh	0.2

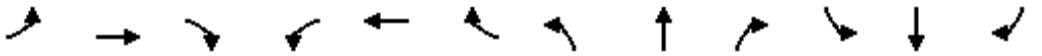
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	15	409	1	0	555
Future Vol, veh/h	0	15	409	1	0	555
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	0	-	-	2
Peak Hour Factor	65	65	87	65	96	96
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	23	470	2	0	578

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	236	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.3	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	*952	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*952	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	952	-
HCM Lane V/C Ratio	-	-	0.024	-
HCM Control Delay (s)	-	-	8.9	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



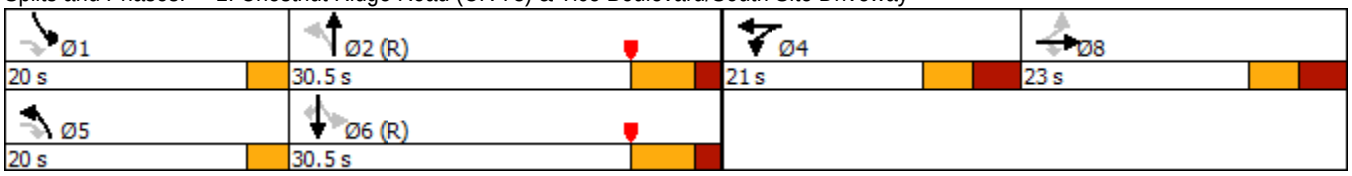
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	38	96	154	24	81	99	399	161	243	485	244
Future Volume (vph)	278	38	96	154	24	81	99	399	161	243	485	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.903			0.957				0.850
Flt Protected	0.950	0.963		0.950	0.992		0.950			0.950		
Satd. Flow (prot)	1641	1672	1849	1419	1545	0	1761	3352	0	1582	3522	1714
Flt Permitted	0.666	0.687		0.950	0.992		0.464			0.273		
Satd. Flow (perm)	1151	1193	1849	1419	1545	0	860	3352	0	455	3522	1714
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			121									257
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	19%	0%	0%	3%	3%	17%	7%	3%	1%
Adj. Flow (vph)	305	42	105	166	26	87	111	448	181	256	511	257
Shared Lane Traffic (%)	44%			13%								
Lane Group Flow (vph)	171	176	105	144	135	0	111	629	0	256	511	257
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	24.0		5.0	24.0	24.0
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	30.5		8.0	30.5	30.5
Total Split (s)	23.0	23.0		21.0	21.0		20.0	30.5		20.0	30.5	30.5
Total Split (%)	24.3%	24.3%		22.2%	22.2%		21.2%	32.3%		21.2%	32.3%	32.3%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	15.8	15.8	35.9	12.4	12.4		40.9	29.7		49.3	35.2	35.2
Actuated g/C Ratio	0.17	0.17	0.38	0.13	0.13		0.43	0.31		0.52	0.37	0.37
v/c Ratio	0.89	0.89	0.14	0.77	0.67		0.25	0.60		0.65	0.39	0.32
Control Delay	82.5	80.4	2.9	66.8	55.4		14.4	31.7		22.0	23.9	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	82.5	80.4	2.9	66.8	55.4		14.4	31.7		22.0	23.9	4.3
LOS	F	F	A	E	E		B	C		C	C	A
Approach Delay		63.2			61.3			29.1			18.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			E			C			B	
Queue Length 50th (ft)	106	109	0	87	81		34	172		87	120	0
Queue Length 95th (ft)	#233	#236	23	#176	145		62	242		140	173	52
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	199	206	848	210	228		602	1054		440	1311	799
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.86	0.85	0.12	0.69	0.59		0.18	0.60		0.58	0.39	0.32

Intersection Summary

Area Type: Other
Cycle Length: 94.5
Actuated Cycle Length: 94.5
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 34.5 Intersection LOS: C
Intersection Capacity Utilization 63.4% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway



Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	100	742	16	0	972
Future Vol, veh/h	0	100	742	16	0	972
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	0	-	-	2
Peak Hour Factor	75	75	89	65	95	95
Heavy Vehicles, %	0	13	3	50	0	3
Mvmt Flow	0	133	834	25	0	1023

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	430	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.56	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.43	-	-	-	-
Pot Cap-1 Maneuver	0	*759	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*759	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	759	-
HCM Lane V/C Ratio	-	-	0.176	-
HCM Control Delay (s)	-	-	10.8	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

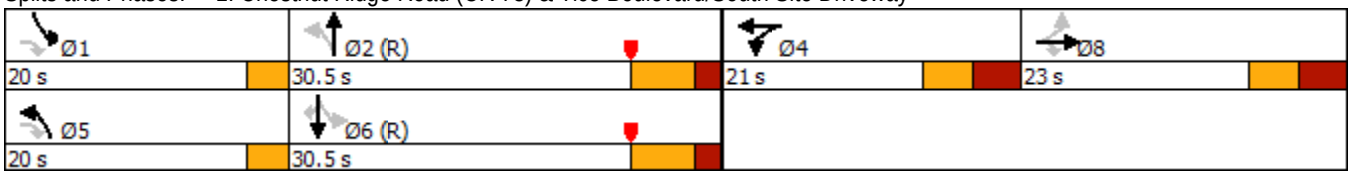
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	30	319	169	22	67	94	408	161	197	942	177
Future Volume (vph)	290	30	319	169	22	67	94	408	161	197	942	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.920			0.958				0.850
Flt Protected	0.950	0.961		0.950	0.985		0.950			0.950		
Satd. Flow (prot)	1658	1606	1849	1656	1553	0	1761	3536	0	1693	3628	1731
Flt Permitted	0.647	0.652		0.950	0.985		0.135			0.267		
Satd. Flow (perm)	1129	1090	1849	1656	1553	0	250	3536	0	476	3628	1731
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			121									164
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.90	0.90	0.90	0.76	0.76	0.76	0.89	0.89	0.89	0.86	0.86	0.86
Heavy Vehicles (%)	1%	25%	0%	2%	0%	6%	3%	1%	3%	0%	0%	0%
Adj. Flow (vph)	322	33	354	222	29	88	106	458	181	229	1095	206
Shared Lane Traffic (%)	45%			22%								
Lane Group Flow (vph)	177	178	354	173	166	0	106	639	0	229	1095	206
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	24.0		5.0	24.0	24.0
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	30.5		8.0	30.5	30.5
Total Split (s)	23.0	23.0		21.0	21.0		20.0	30.5		20.0	30.5	30.5
Total Split (%)	24.3%	24.3%		22.2%	22.2%		21.2%	32.3%		21.2%	32.3%	32.3%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	16.7	16.7	35.6	12.7	12.7		40.8	29.7		48.1	34.2	34.2
Actuated g/C Ratio	0.18	0.18	0.38	0.13	0.13		0.43	0.31		0.51	0.36	0.36
v/c Ratio	0.89	0.93	0.46	0.78	0.80		0.47	0.57		0.58	0.84	0.28
Control Delay	81.3	89.8	15.8	63.6	67.0		20.4	30.6		19.7	35.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	81.3	89.8	15.8	63.6	67.0		20.4	30.6		19.7	35.3	7.2
LOS	F	F	B	E	E		C	C		B	D	A
Approach Delay		50.8			65.3			29.1			29.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			C			C	
Queue Length 50th (ft)	111	112	101	105	101		32	169		76	315	16
Queue Length 95th (ft)	#245	#251	164	147	144		61	241		116	#421	60
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	199	192	864	245	230		397	1112		461	1311	730
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.89	0.93	0.41	0.71	0.72		0.27	0.57		0.50	0.84	0.28

Intersection Summary

Area Type: Other
Cycle Length: 94.5
Actuated Cycle Length: 94.5
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 37.5 Intersection LOS: D
Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway



Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	96	750	15	0	1316
Future Vol, veh/h	0	96	750	15	0	1316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	0	-	-	2
Peak Hour Factor	65	65	89	65	86	86
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	0	148	843	23	0	1530

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	433	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.3	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	*789	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*789	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	789	-
HCM Lane V/C Ratio	-	-	0.187	-
HCM Control Delay (s)	-	-	10.6	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.7	-

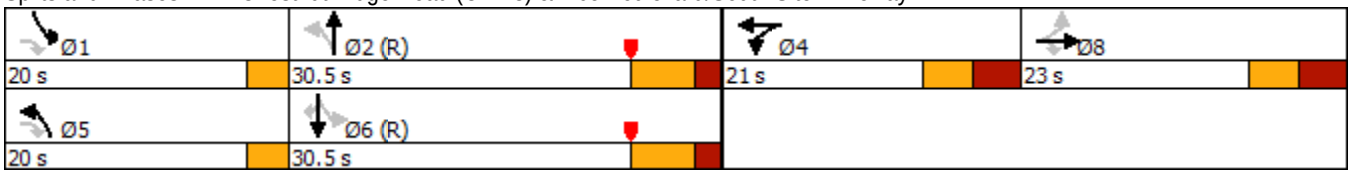
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	26	34	136	19	57	42	236	138	180	361	127
Future Volume (vph)	137	26	34	136	19	57	42	236	138	180	361	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.917			0.945				0.850
Flt Protected	0.950	0.967		0.950	0.987		0.950			0.950		
Satd. Flow (prot)	1674	1704	1849	1689	1609	0	1814	3521	0	1693	3592	1731
Flt Permitted	0.651	0.695		0.950	0.987		0.529			0.441		
Satd. Flow (perm)	1147	1225	1849	1689	1609	0	1010	3521	0	786	3592	1731
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			121									162
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.89	0.89	0.89	0.65	0.65	0.65	0.87	0.87	0.87	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	154	29	38	209	29	88	48	271	159	188	376	132
Shared Lane Traffic (%)	41%			20%								
Lane Group Flow (vph)	91	92	38	167	159	0	48	430	0	188	376	132
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	24.0		5.0	24.0	24.0
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	30.5		8.0	30.5	30.5
Total Split (s)	23.0	23.0		21.0	21.0		20.0	30.5		20.0	30.5	30.5
Total Split (%)	24.3%	24.3%		22.2%	22.2%		21.2%	32.3%		21.2%	32.3%	32.3%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	11.9	11.9	28.9	12.4	12.4		46.1	36.8		53.3	42.5	42.5
Actuated g/C Ratio	0.13	0.13	0.31	0.13	0.13		0.49	0.39		0.56	0.45	0.45
v/c Ratio	0.63	0.60	0.06	0.76	0.76		0.09	0.31		0.35	0.23	0.15
Control Delay	58.0	54.6	0.2	61.2	62.1		11.9	22.8		13.3	18.3	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	58.0	54.6	0.2	61.2	62.1		11.9	22.8		13.3	18.3	2.4
LOS	E	D	A	E	E		B	C		B	B	A
Approach Delay		46.7			61.6			21.7			14.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			E			C			B	
Queue Length 50th (ft)	55	55	0	101	95		13	95		54	74	0
Queue Length 95th (ft)	103	103	0	118	114		31	150		101	120	25
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	194	207	772	250	238		713	1370		606	1616	868
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.47	0.44	0.05	0.67	0.67		0.07	0.31		0.31	0.23	0.15

Intersection Summary	
Area Type:	Other
Cycle Length: 94.5	
Actuated Cycle Length: 94.5	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 29.4	Intersection LOS: C
Intersection Capacity Utilization 57.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway



Intersection	
Int Delay, s/veh	1

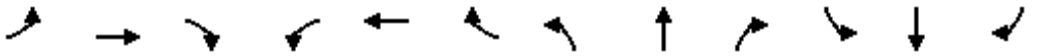
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	90	418	12	0	668
Future Vol, veh/h	0	90	418	12	0	668
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	4	-	0	-	-	2
Peak Hour Factor	65	65	87	65	96	96
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	0	138	480	18	0	696

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	249	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.3	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	*919	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*919	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	919	-
HCM Lane V/C Ratio	-	-	0.151	-
HCM Control Delay (s)	-	-	9.6	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



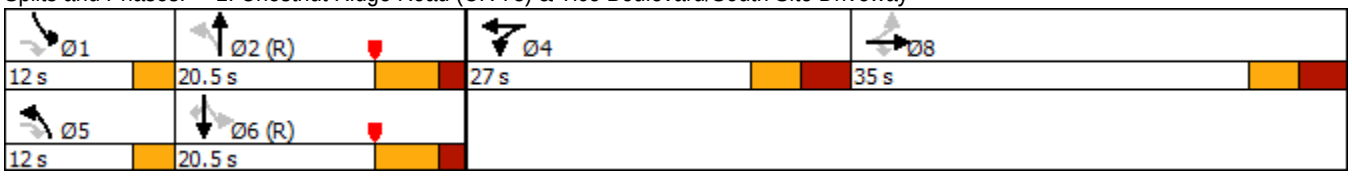
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	38	96	154	24	81	99	399	161	243	485	244
Future Volume (vph)	278	38	96	154	24	81	99	399	161	243	485	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.903			0.957				0.850
Flt Protected	0.950	0.963		0.950	0.992		0.950			0.950		
Satd. Flow (prot)	1641	1672	1849	1419	1545	0	1761	3352	0	1582	3522	1714
Flt Permitted	0.666	0.687		0.950	0.992		0.464			0.190		
Satd. Flow (perm)	1151	1193	1849	1419	1545	0	860	3352	0	316	3522	1714
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			121									257
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.89	0.89	0.89	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	19%	0%	0%	3%	3%	17%	7%	3%	1%
Adj. Flow (vph)	305	42	105	166	26	87	111	448	181	256	511	257
Shared Lane Traffic (%)	44%			13%								
Lane Group Flow (vph)	171	176	105	144	135	0	111	629	0	256	511	257
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	14.0		5.0	14.0	14.0
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	20.5		8.0	20.5	20.5
Total Split (s)	35.0	35.0		27.0	27.0		12.0	20.5		12.0	20.5	20.5
Total Split (%)	37.0%	37.0%		28.6%	28.6%		12.7%	21.7%		12.7%	21.7%	21.7%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	18.8	18.8	42.9	14.0	14.0		32.2	21.1		44.1	30.7	30.7
Actuated g/C Ratio	0.20	0.20	0.45	0.15	0.15		0.34	0.22		0.47	0.32	0.32
v/c Ratio	0.75	0.74	0.12	0.69	0.59		0.30	0.84		0.68	0.45	0.35
Control Delay	54.0	52.9	2.4	54.2	47.5		21.0	49.7		32.7	30.9	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	54.0	52.9	2.4	54.2	47.5		21.0	49.7		32.7	30.9	6.2
LOS	D	D	A	D	D		C	D		C	C	A
Approach Delay		41.6			51.0			45.4			25.2	

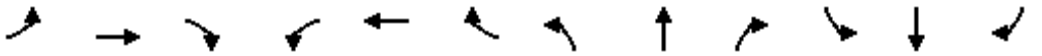
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	103	105	0	87	81		36	195		92	126	0
Queue Length 95th (ft)	158	162	22	144	133		89	#356		#308	#268	67
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	341	353	905	300	326		393	749		376	1142	729
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.50	0.50	0.12	0.48	0.41		0.28	0.84		0.68	0.45	0.35

Intersection Summary

Area Type: Other
Cycle Length: 94.5
Actuated Cycle Length: 94.5
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 37.0 Intersection LOS: D
Intersection Capacity Utilization 59.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway





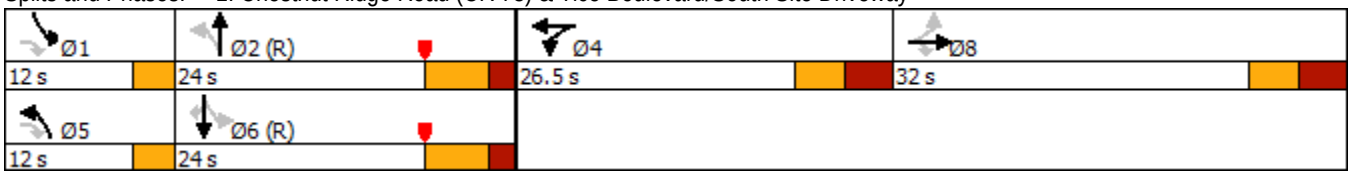
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	290	30	319	169	22	67	94	408	161	197	942	177
Future Volume (vph)	290	30	319	169	22	67	94	408	161	197	942	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.920			0.958				0.850
Flt Protected	0.950	0.961		0.950	0.985		0.950			0.950		
Satd. Flow (prot)	1658	1606	1849	1656	1553	0	1761	3536	0	1693	3628	1731
Flt Permitted	0.647	0.652		0.950	0.985		0.157			0.231		
Satd. Flow (perm)	1129	1090	1849	1656	1553	0	291	3536	0	412	3628	1731
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			141									162
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.90	0.90	0.90	0.76	0.76	0.76	0.89	0.89	0.89	0.86	0.86	0.86
Heavy Vehicles (%)	1%	25%	0%	2%	0%	6%	3%	1%	3%	0%	0%	0%
Adj. Flow (vph)	322	33	354	222	29	88	106	458	181	229	1095	206
Shared Lane Traffic (%)	45%			22%								
Lane Group Flow (vph)	177	178	354	173	166	0	106	639	0	229	1095	206
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	17.5		5.0	17.5	17.5
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	24.0		8.0	24.0	24.0
Total Split (s)	32.0	32.0		26.5	26.5		12.0	24.0		12.0	24.0	24.0
Total Split (%)	33.9%	33.9%		28.0%	28.0%		12.7%	25.4%		12.7%	25.4%	25.4%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	19.6	19.6	38.4	14.2	14.2		36.4	25.4		43.0	29.7	29.7
Actuated g/C Ratio	0.21	0.21	0.41	0.15	0.15		0.39	0.27		0.46	0.31	0.31
v/c Ratio	0.76	0.79	0.42	0.70	0.71		0.46	0.67		0.66	0.96	0.31
Control Delay	54.6	58.4	12.5	52.3	54.4		25.1	38.3		31.3	54.8	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	54.6	58.4	12.5	52.3	54.4		25.1	38.3		31.3	54.8	10.4
LOS	D	E	B	D	D		C	D		C	D	B
Approach Delay		34.5			53.3			36.4			45.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	104	105	76	104	101		36	193		85	~351	19
Queue Length 95th (ft)	173	176	149	136	133		81	#311		#194	#592	76
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	298	288	830	341	320		258	948		347	1138	654
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.59	0.62	0.43	0.51	0.52		0.41	0.67		0.66	0.96	0.31

Intersection Summary

Area Type: Other
Cycle Length: 94.5
Actuated Cycle Length: 94.5
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 41.8 Intersection LOS: D
Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway

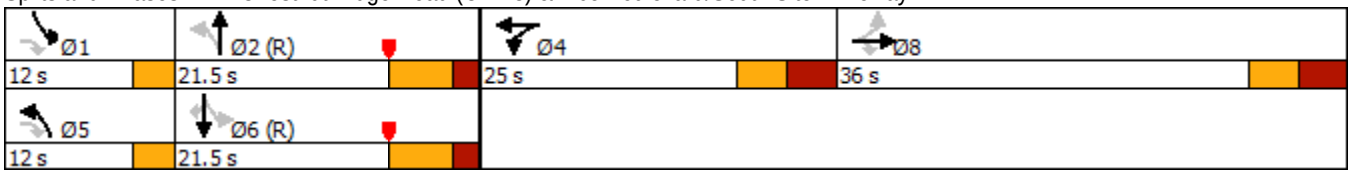


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	26	34	136	19	57	42	236	138	180	361	127
Future Volume (vph)	137	26	34	136	19	57	42	236	138	180	361	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	13	13	10	12	14
Grade (%)		-2%			3%			-1%			-1%	
Storage Length (ft)	240		0	165		0	660		0	430		200
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	110			25			80			85		
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt			0.850		0.917			0.945				0.850
Flt Protected	0.950	0.967		0.950	0.987		0.950			0.950		
Satd. Flow (prot)	1674	1704	1849	1689	1609	0	1814	3521	0	1693	3592	1731
Flt Permitted	0.651	0.695		0.950	0.987		0.529			0.434		
Satd. Flow (perm)	1147	1225	1849	1689	1609	0	1010	3521	0	773	3592	1731
Right Turn on Red			Yes			No			No			Yes
Satd. Flow (RTOR)			121									162
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		431			264			887			526	
Travel Time (s)		11.8			7.2			15.1			9.0	
Peak Hour Factor	0.89	0.89	0.89	0.65	0.65	0.65	0.87	0.87	0.87	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	154	29	38	209	29	88	48	271	159	188	376	132
Shared Lane Traffic (%)	41%			20%								
Lane Group Flow (vph)	91	92	38	167	159	0	48	430	0	188	376	132
Turn Type	Perm	NA	custom	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		8		4	4		5	2		1	6	
Permitted Phases	8		1 5 8				2			6		6
Detector Phase	8	8	1 5 8	4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	15.0		5.0	15.0	15.0
Minimum Split (s)	15.0	15.0		15.0	15.0		8.0	21.5		8.0	21.5	21.5
Total Split (s)	36.0	36.0		25.0	25.0		12.0	21.5		12.0	21.5	21.5
Total Split (%)	38.1%	38.1%		26.5%	26.5%		12.7%	22.8%		12.7%	22.8%	22.8%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5		3.0	4.5	4.5
All-Red Time (s)	3.5	3.5		3.5	3.5		0.0	2.0		0.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0		3.0	6.5		3.0	6.5	6.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	C-Max
Act Effct Green (s)	12.4	12.4	29.9	13.4	13.4		44.1	34.7		51.7	40.9	40.9
Actuated g/C Ratio	0.13	0.13	0.32	0.14	0.14		0.47	0.37		0.55	0.43	0.43
v/c Ratio	0.61	0.57	0.06	0.70	0.70		0.09	0.33		0.36	0.24	0.16
Control Delay	54.8	51.8	0.2	53.7	54.3		13.7	25.4		14.9	20.2	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	54.8	51.8	0.2	53.7	54.3		13.7	25.4		14.9	20.2	2.9
LOS	D	D	A	D	D		B	C		B	C	A
Approach Delay		44.1			54.0			24.2			15.5	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	55	55	0	101	96		13	95		54	74	0
Queue Length 95th (ft)	101	100	0	112	109		36	168		117	135	27
Internal Link Dist (ft)		351			184			807			446	
Turn Bay Length (ft)	240			165			660			430		200
Base Capacity (vph)	351	375	756	321	306		580	1291		532	1553	840
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.26	0.25	0.05	0.52	0.52		0.08	0.33		0.35	0.24	0.16

Intersection Summary			
Area Type:	Other		
Cycle Length: 94.5			
Actuated Cycle Length: 94.5			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow, Master Intersection			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 49.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Chestnut Ridge Road (CR 73) & Tice Boulevard/South Site Driveway



APPENDIX G – LEVEL OF SERVICE SUMMARY TABLES

35 Technology Drive
Warren, New Jersey 07059
908-769-5588
www.atlantictraffic.com

Proposed Whole Foods Market
Woodcliff Lake Borough
Bergen County, New Jersey
ATDE Project No. ANJ19204

TABLE I
SIGNALIZED LEVEL OF SERVICE SUMMARY
CHESTNUT RIDGE ROAD (CR 73) & TICE BOULEVARD/SITE DRIVEWAY
WEEKDAY MIDDAY PEAK HOUR

Approach	Movement	No-Build	Build	Build w/ Mitigation
Eastbound	Left	D(54.0)	F(82.5)	D(54.0)
	Left/Thru	D(54.9)	F(80.4)	D(52.9)
	Right	A(3.2)	A(2.9)	A(2.4)
Westbound	Left	D(42.2)	E(66.8)	D(54.2)
	Left/Thru/Right	D(44.3)	E(55.4)	D(47.5)
Northbound	Left	B(11.3)	B(14.4)	C(21.0)
	Thru/Right	B(17.2)	C(31.7)	D(49.7)
Southbound	Left	B(11.2)	C(22.0)	C(32.7)
	Thru	B(19.4)	C(23.9)	C(30.9)
	Right	A(3.8)	A(4.3)	A(6.2)
Overall Intersection		C(21.5)	C(34.5)	D(37.0)

- Eastbound and Westbound approaches are the Tice Boulevard/Site Driveway approaches.
- Northbound and Southbound approaches are the Chestnut Ridge Road (CR 73) approaches.
- Delay shown in seconds.

TABLE II
SIGNALIZED LEVEL OF SERVICE SUMMARY
CHESTNUT RIDGE ROAD (CR 73) & TICE BOULEVARD/SITE DRIVEWAY
WEEKDAY EVENING PEAK HOUR

Approach	Movement	No-Build	Build	Build w/ Mitigation
Eastbound	Left	D(52.3)	F(81.3)	D(54.6)
	Left/Thru	E(55.2)	F(89.8)	E(58.4)
	Right	A(9.8)	B(15.8)	B(12.5)
Westbound	Left	D(46.1)	E(63.6)	D(52.3)
	Left/Thru/Right	D(46.5)	E(67.0)	D(54.4)
Northbound	Left	B(17.9)	C(20.4)	C(25.1)
	Thru/Right	B(19.2)	C(30.6)	D(38.3)
Southbound	Left	B(12.0)	B(19.7)	C(31.3)
	Thru	C(29.3)	D(35.3)	D(54.8)
	Right	A(7.0)	A(7.2)	B(10.4)
Overall Intersection		C(26.2)	D(37.5)	D(41.8)

- Eastbound and Westbound approaches are the Tice Boulevard/Site Driveway approaches.
- Northbound and Southbound approaches are the Chestnut Ridge Road (CR 73) approaches.
- Delay shown in seconds.

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TABLE III
SIGNALIZED LEVEL OF SERVICE SUMMARY
CHESTNUT RIDGE ROAD (CR 73) & TICE BOULEVARD/SITE DRIVEWAY
SATURDAY MIDDAY PEAK HOUR

Approach	Movement	No-Build	Build	Build w/ Mitigation
Eastbound	Left	D(51.8)	E(58.0)	D(54.8)
	Left/Thru	D(52.8)	D(54.6)	D(51.8)
	Right	A(0.3)	A(0.2)	A(0.2)
Westbound	Left	D(42.0)	E(61.2)	D(53.7)
	Left/Thru/Right	D(42.1)	E(62.1)	D(54.3)
Northbound	Left	A(7.6)	B(11.9)	B(13.7)
	Thru/Right	B(11.2)	C(22.8)	C(25.4)
Southbound	Left	A(8.0)	B(13.3)	B(14.9)
	Thru	B(12.3)	B(18.3)	C(20.2)
	Right	A(1.8)	A(2.4)	A(2.9)
Overall Intersection		B(16.3)	C(29.4)	C(28.9)

- Eastbound and Westbound approaches are the Tice Boulevard/Site Driveway approaches.
- Northbound and Southbound approaches are the Chestnut Ridge Road (CR 73) approaches.
- Delay shown in seconds.

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TABLE IV
UNSIGNALIZED LEVEL OF SERVICE SUMMARY
CHESTNUT RIDGE ROAD (CR 73) & RIGHT-IN/RIGHT-OUT DRIVEWAY
WEEKDAY MIDDAY PEAK HOUR

Approach	Movement	No-Build	Build
Westbound	Right	A(9.9)	B(10.8)
Overall Intersection		A(0.1)	A(0.7)

- Westbound approach is the Right-In/Right-Out Driveway approach.
- Delay shown in seconds.

TABLE V
UNSIGNALIZED LEVEL OF SERVICE SUMMARY
CHESTNUT RIDGE ROAD (CR 73) & RIGHT-IN/RIGHT-OUT DRIVEWAY
WEEKDAY EVENING PEAK HOUR

Approach	Movement	No-Build	Build
Westbound	Right	A(9.8)	B(10.6)
Overall Intersection		A(0.2)	A(0.6)

- Westbound approach is the Right-In/Right-Out Driveway approach.
- Delay shown in seconds.

TABLE VI
UNSIGNALIZED LEVEL OF SERVICE SUMMARY
CHESTNUT RIDGE ROAD (CR 73) & RIGHT-IN/RIGHT-OUT DRIVEWAY
SATURDAY MIDDAY PEAK HOUR

Approach	Movement	No-Build	Build
Westbound	Right	A(8.9)	A(9.6)
Overall Intersection		A(0.2)	A(1.0)

- Westbound approach is the Right-In/Right-Out Driveway approach.
- Delay shown in seconds.