

**TRAFFIC IMPACT AND ACCESS STUDY
ADDENDUM 12/9/16**

**TUSCAN VILLAGE (PHASE II)
SALEM, NEW HAMPSHIRE**



**181 BALLARDVALE STREET, SUITE 202
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PREPARED FOR:

**Joseph Faro
67 MAIN STREET
SALEM, NEW HAMPSHIRE 03079**

DECEMBER 2016



***Traffic Impact and Access Study – Addendum 12/9/16
Tuscan Village (Phase II)
Salem, New Hampshire
December 2016***

TECHNICAL MEMORANDUM

REF: MAX-2014119.04

DATE: December 9, 2016

TO: Mr. Joseph Faro
67 Main Street
Salem, New Hampshire 03079

FROM: Ms. Heather L. Monticup, P.E. Senior Project Manager
Ms. Susannah E. Theriault, E.I.T. Engineer

RE: Traffic Impact and Access Study – Addendum 12/9/16
Tuscan Village (Phase II)
79 Rockingham Park Boulevard/11 Central Street – Salem, New Hampshire

INTRODUCTION

Greenman-Pedersen, Inc. (GPI) submitted a *Traffic Impact and Access Study* (TIAS) for the proposed Tuscan Village development located at 79 Rockingham Park Boulevard/11 Central Street in Salem, New Hampshire, dated June 17, 2016. The project consists of the redevelopment of an approximate 50-acre parcel currently occupied by barns associated with the Rockingham Park Racetrack located directly south of the Project site. The site location in relation to the surrounding roadways is shown on the map on Figure 1. In the TIAS, access was proposed to be provided via the following six access points (as designated on Figure 1):

- Node 5 – unsignalized right-in/access-only driveway to the site which was a mitigation measure
- Node 8 – signalized driveway on NH Route 28 (South Broadway), opposite the Coca-Cola (23 South Broadway) northern driveway
- Node 9 – signalized driveway on NH Route 28 (South Broadway), opposite the US Post Office/Citizens Bank/Rite Aid Pharmacy driveway
- Node 12 – signalized driveway providing access to Rockingham Park Boulevard
- Node 15 – unsignalized driveway providing access to Mall Road (NH Route 38), opposite the Mall driveway (near Sears Auto Center)
- Node 18 – unsignalized driveway on Pleasant Street

GPI Greenman-Pedersen, Inc.

181 BALLARDVALE STREET, SUITE 202, WILMINGTON, MA 01887 TELEPHONE: (978) 570-2999 FACSIMILE: (978) 658-3044

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Figure 1
Site Location Map

Due to the approvals needed for the site driveway opposite the Coca-Cola redevelopment driveway (Node 8), there is a possibility that this driveway will not be constructed and, therefore, is being eliminated as an access/egress point to the site. Accordingly, per the email provided in the Appendix, NHDOT has requested that the trip distribution for Nodes 4, 5, 6 and 9 (as designated on Figure 1) be regenerated to assume the removal of Node 8 as a point of access to the site. In addition, since the TIAS was submitted, additional mitigation measures have been committed to. Accordingly, this memo provides all capacity and queue analysis results with the mitigation commitments in place.

FUTURE CONDITIONS

Trip Distribution

The overall distribution into and out of the study area network remains the same as presented in the TIAS. The distribution of traffic to each driveway has been adjusted by removing Node 8 as an access point and including Node 5 as a right-in/right-out access point under the Build condition, which was further recommended by the Town of Salem since the TIAS was issued. The updated distribution percentages for the retail and residential are provided in the Appendix.

Site Access

For the purpose of this addendum, access will be provided via the following five access points:

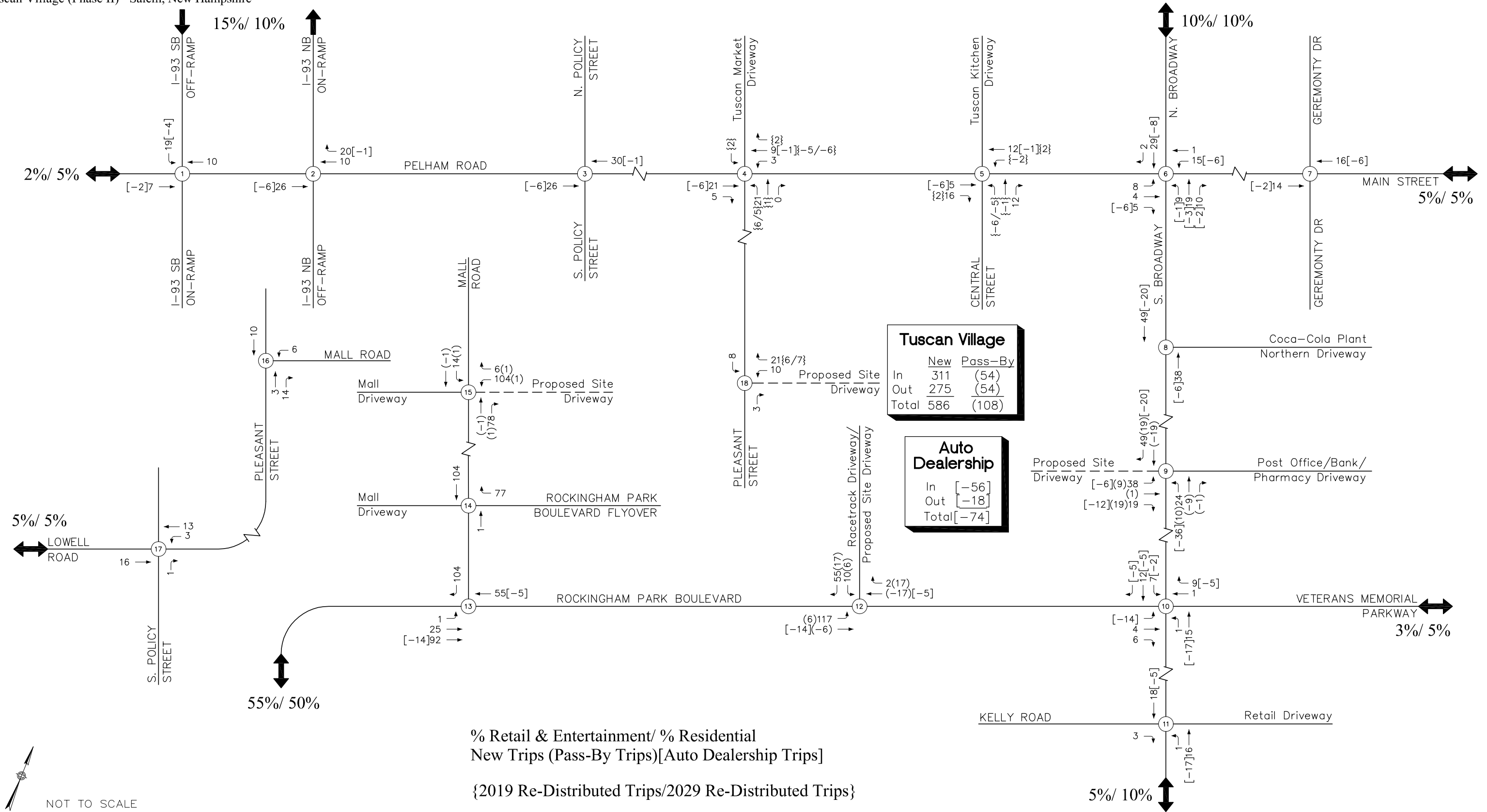
- Node 5 – unsignalized driveway providing access to Central Street, which will be restricted to right-in/right-out at Main Street
- Node 9 – signalized driveway on NH Route 28 (South Broadway), opposite the US Post Office/Citizens Bank/Rite Aid Pharmacy driveway
- Node 12 – signalized driveway providing access to Rockingham Park Boulevard
- Node 15 – unsignalized driveway providing access to Mall Road (NH Route 38), opposite the Mall driveway (near Sears Auto Center)
- Node 18 – unsignalized driveway on Pleasant Street

Build Traffic Volumes

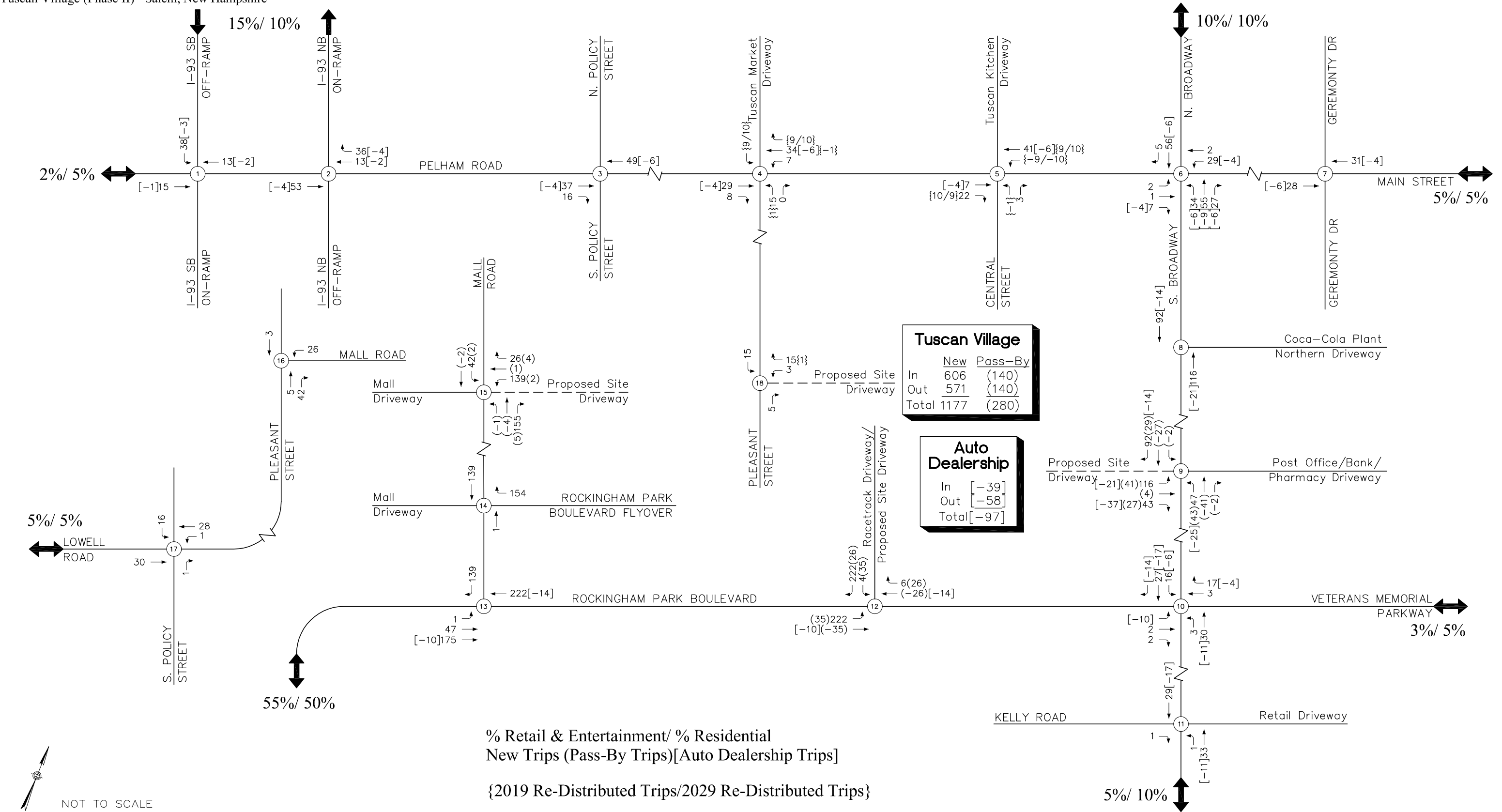
Based on the traffic-generation and updated distribution estimates for this project, the traffic volumes associated with the proposed development project were assigned to the roadway

network. The updated site-generated traffic-volumes for the proposed Tuscan Village development include the traffic associated with the auto dealership (Phase I) in order to provide the appropriate mixed-use methodology and to account for the added access points. Since the auto dealership was also accounted for in the No-Build condition (as it will be open prior to 2019) with access and egress only initially provided at the NH Route 28 intersection with the Post Office driveway and the site driveway, the previously approved trips associated with the auto dealership were removed from the site-generated network. The updated site-generated traffic networks are shown on Updated Figures 11, 12, and 13 for the weekday AM, weekday PM, and Saturday midday peak hours, respectively. The updated site-generated traffic volumes were then added to the No-Build traffic volumes (from the TIAS) to develop the updated Build peak-hour traffic-volume networks. The 2019 and 2029 Build peak-hour flow networks are graphically depicted on Updated Figures 14 through 19. The 2019 and 2029 No-Build peak-hour traffic-volume networks from the TIAS are provided in the Appendix for reference.

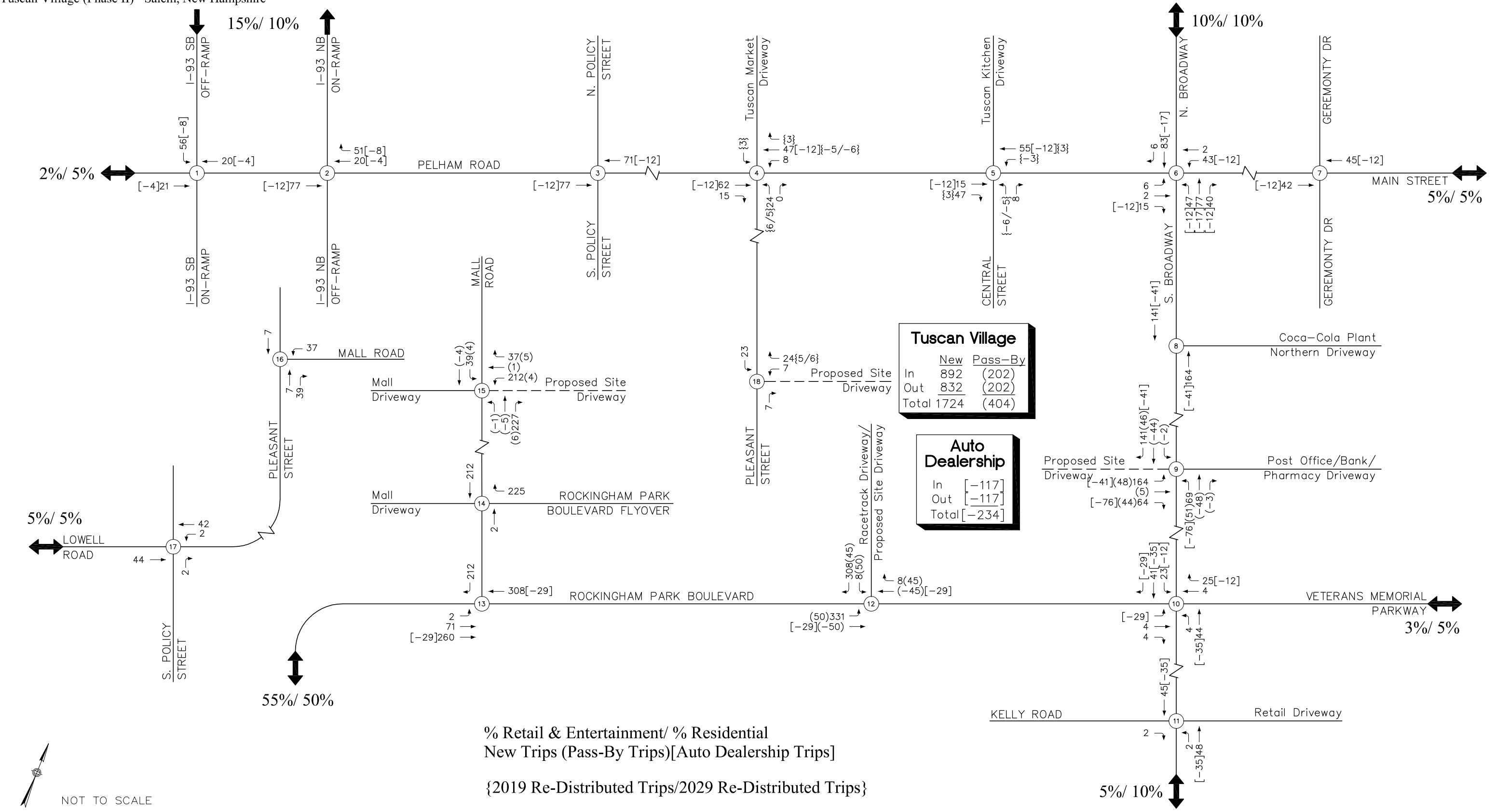
Tuscan Village (Phase II) - Salem, New Hampshire

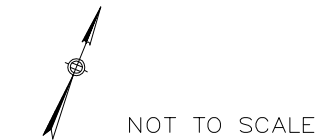
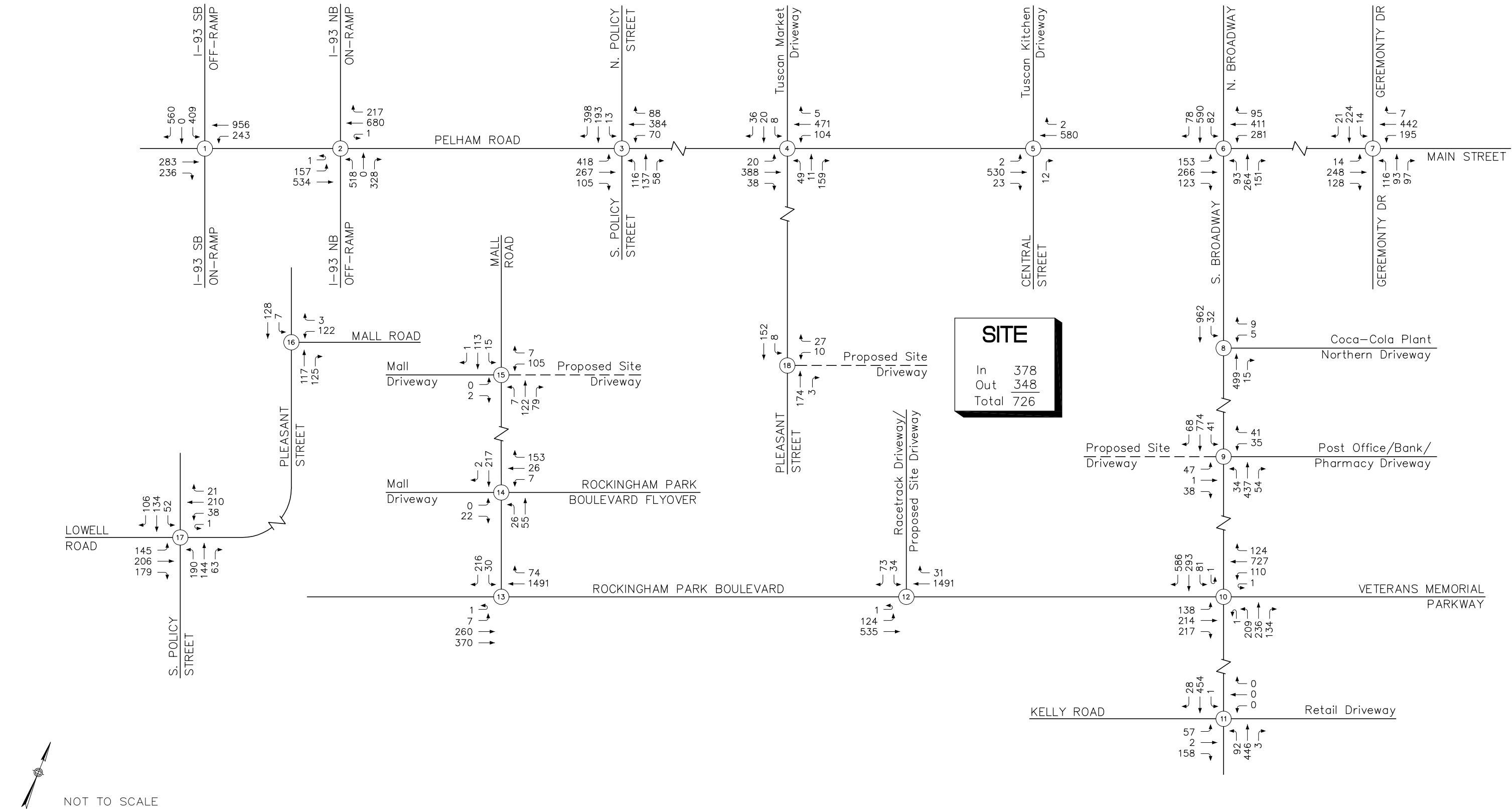


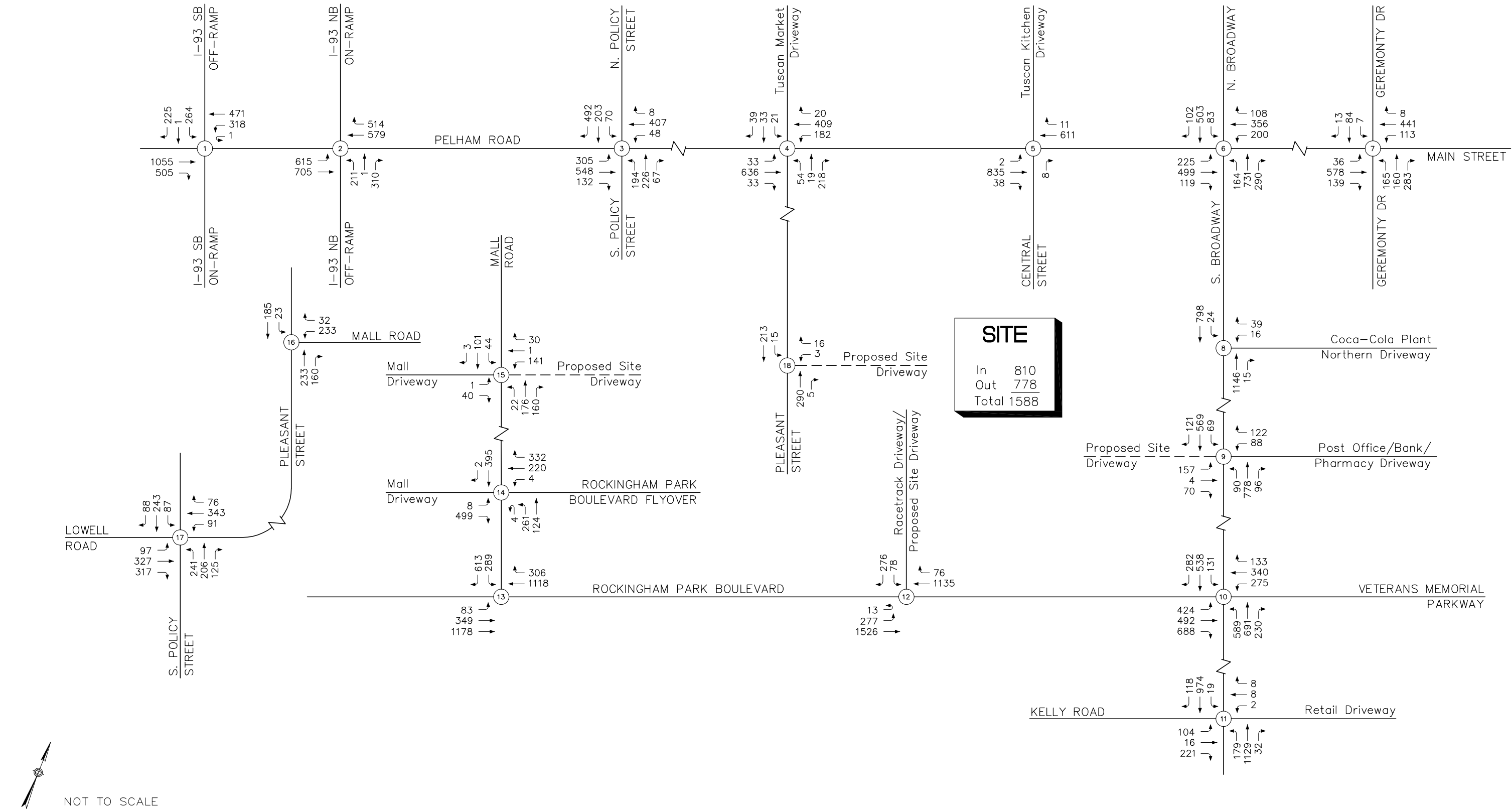
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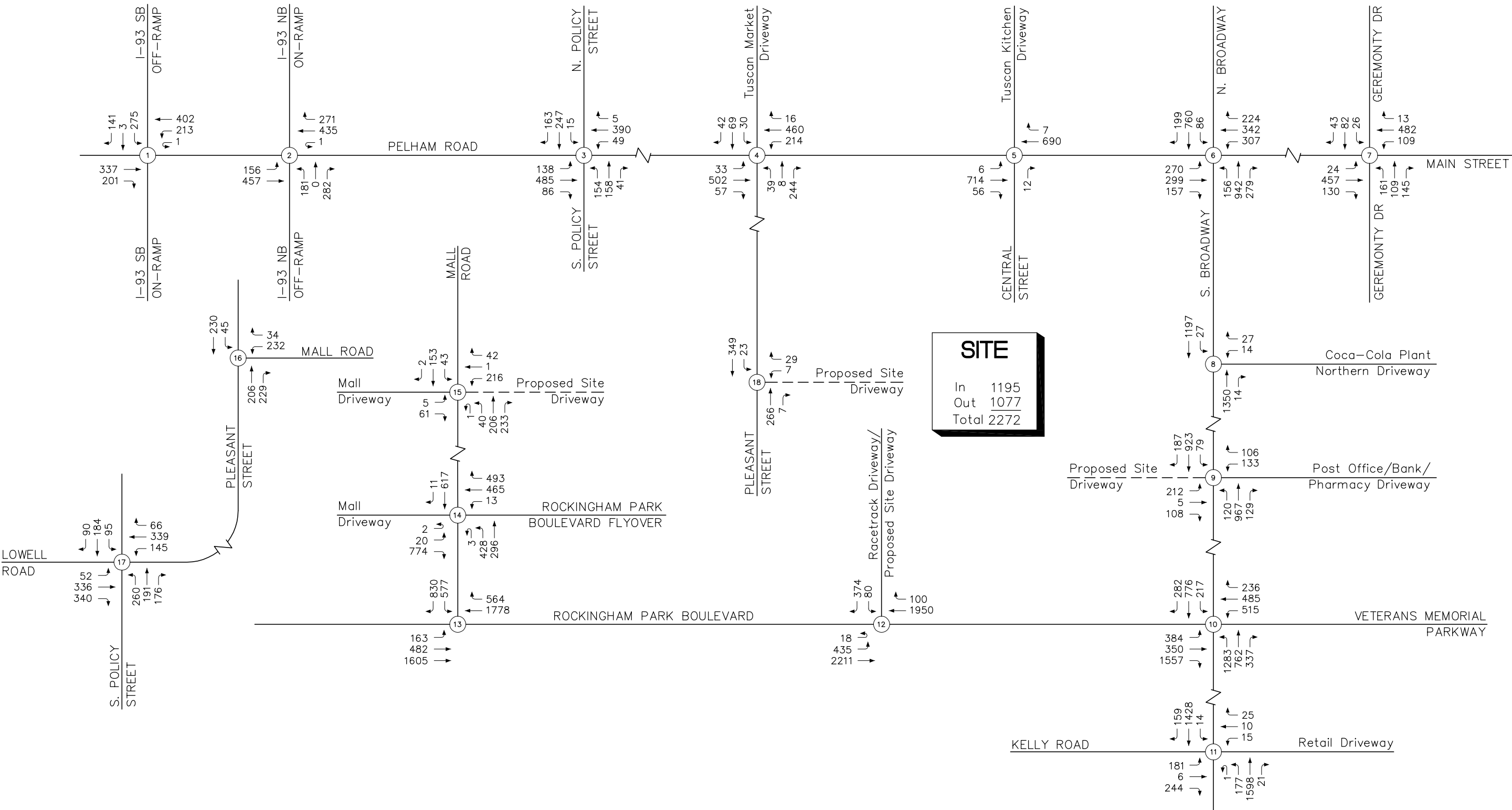


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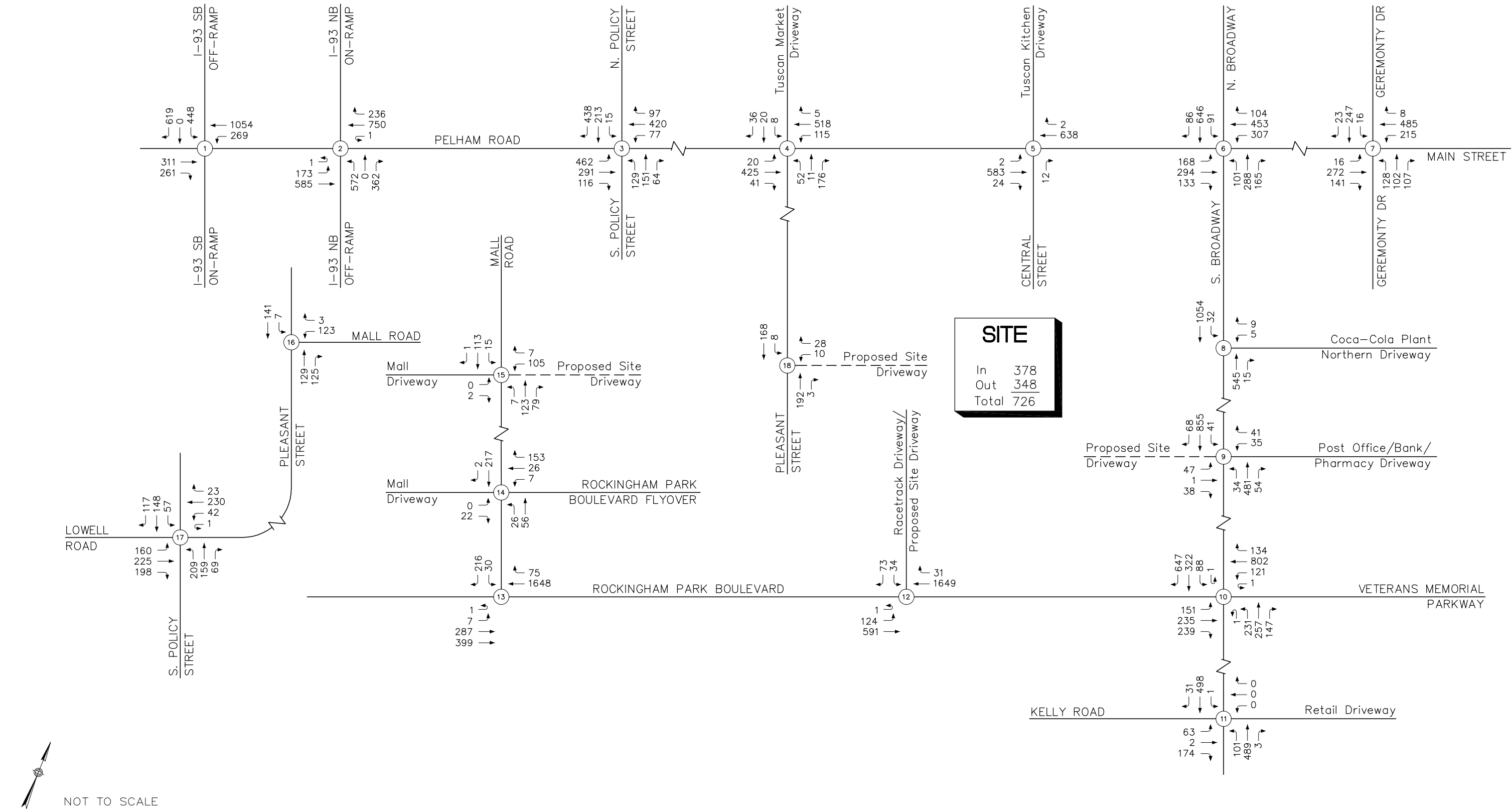


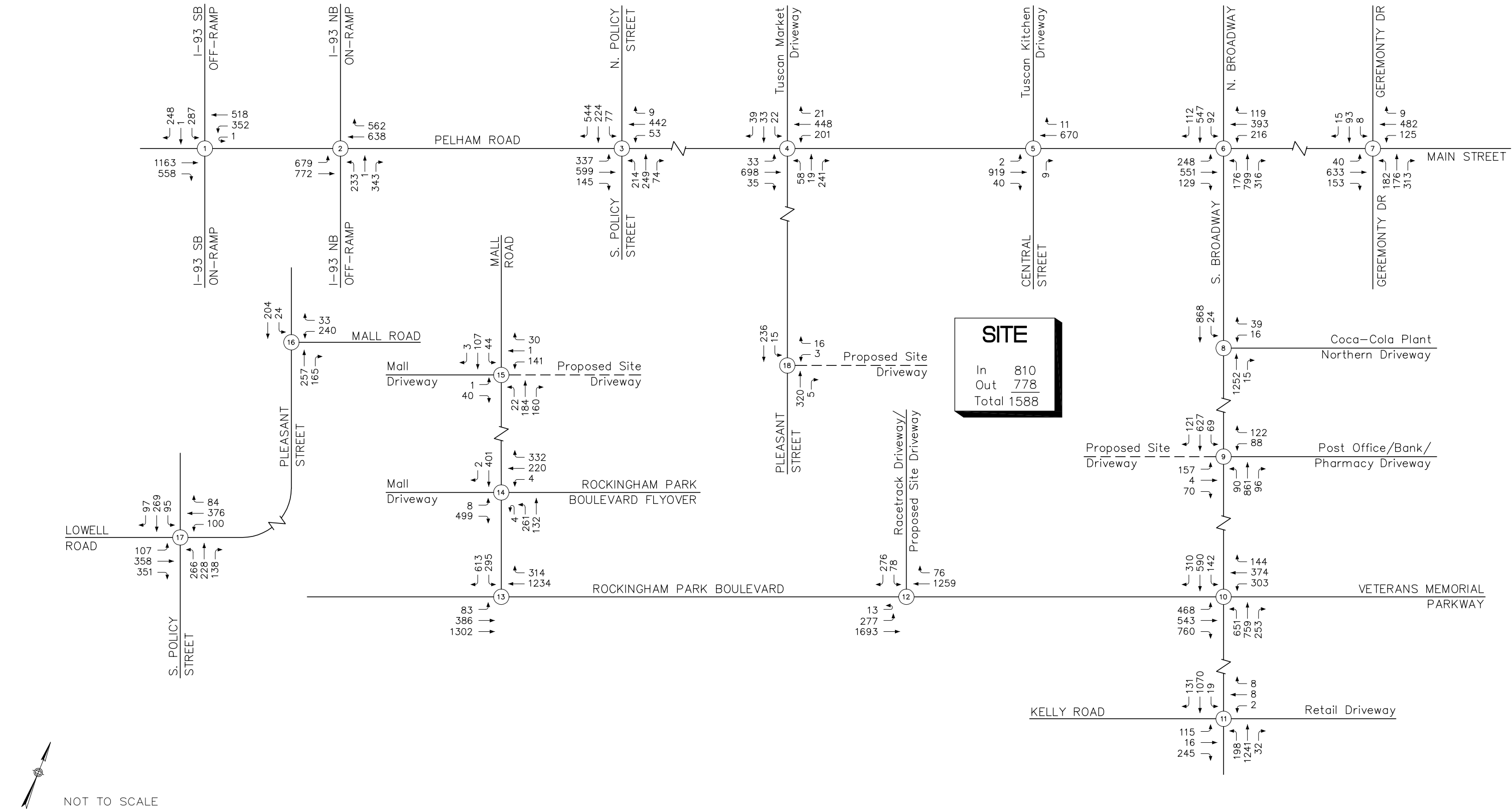




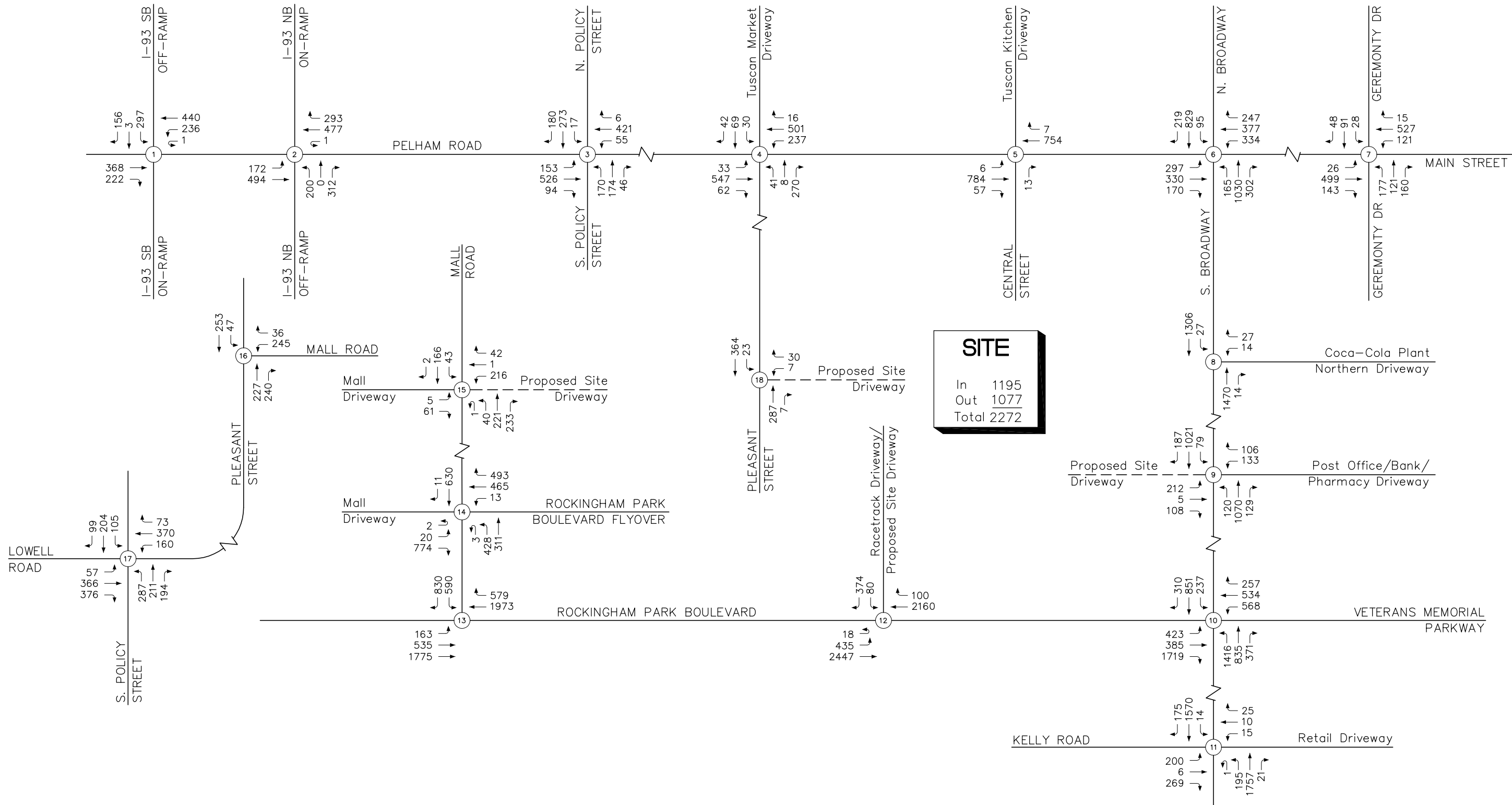


NOT TO SCALE





NOT TO SCALE



NOT TO SCALE

CAPACITY AND QUEUE ANALYSIS

Capacity and queuing analyses were conducted at the requested study-area locations under 2019 and 2029 Build conditions during the weekday AM, weekday PM, and Saturday midday peak hours. The 2016 Existing, 2019 No-Build, and 2029 No-Build conditions are included as previously provided in the TIAS. The impact of site-generated traffic can be measured by comparing No-Build conditions to Build conditions.

Methodology

The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM) and is described in the Appendix of this report.¹

The TIAS utilizes the HCM 2000 methodology due to the fact that all of the study area intersections do not follow the standard NEMA phasing. HCM 2010 does not provide results at a location where NEMA is not followed. The Town of Salem utilizes an ATMS.now/ITS system for the coordinated systems through the Town. The phasing and signal timings have been input based on information provided by the Town's traffic consultant for the ATMS.now/ITS system (VHB), as well as field observations. Accordingly, in order to provide consistent, comparable results, the HCM 2000 results are presented in the TIAS.

The queue analysis methodology for signalized and unsignalized intersections is based on the concepts and procedures described in the HCM. The maximum back of queue (measured in feet) during a 95th percentile signal cycle was calculated for each critical lane group during the peak periods studied. The back of queue is the length of a backup of vehicles from the stop line of a signalized intersection to the last vehicle in the queue that is required to stop, regardless of the signal indication. The length of this queue depends on a number of factors including signal timing, vehicle arrival patterns, and the saturation flow rate.

Analysis Results

The study area intersections have been analyzed through application of the procedures previously described. The level-of-service (LOS) and queue analysis results are presented in Tables 1 and 2 and are discussed below. All analysis worksheets are provided in the Appendix.

¹ Highway Capacity Manual 2000; Transportation Research Board; Washington, D.C.; 2000.

Main Street (NH Route 97) at Pleasant Street and Tuscan Market Driveway

Under existing and future conditions, the intersection of Main Street at Pleasant Street and the Tuscan Market driveway is expected to operate at an overall LOS C during the weekday AM peak hour, LOS E or better during the weekday PM peak hour, and LOS D or better during the Saturday midday peak hour. Increases in overall delay as a result of the project are anticipated to be less than 15 seconds with no drops in overall LOS.

Main Street (NH Route 97) at Central Street and Enter-Only Tuscan Kitchen Driveway

Under future conditions, the operations at the intersection of Main Street at Central Street and the enter-only Tuscan Kitchen driveway are expected to improve due to the reconstruction of the Central Street approach allowing right-in/right-out movements only.

Main Street (NH Route 97) at North Broadway/South Broadway (NH Route 28) – The Depot

Under 2019 and 2029 future conditions, with or without the proposed project in place, the intersection of South Broadway at Main Street and North Broadway is anticipated to operate with long delays (LOS E/F). Improvement measures are committed to at this location and are described in the *Mitigation Commitments* section of this memo.

South Broadway (NH Route 28) at Post Office Driveway and Proposed Site Driveway

Traffic signal phasing and timing modifications will need to be made to the traffic signal in order to accommodate the new site roadway (eastbound approach) as part of Phase I (auto dealership). As Phase I is expected to open before 2019, the 2019 No-Build and 2029 No-Build conditions include these modifications.

Due to the Phase II traffic and the increase in right-turns as a result of the connection from Central Street, improvement measures are committed to at this location and are described in the *Mitigation Commitments* section of this memo.

Pleasant Street at Proposed Site Driveway

The intersection of Pleasant Street at the proposed site driveway is unsignalized. With the proposed project in place, the intersection will operate with all movements at LOS B or better. Delays on Pleasant Street are expected to be negligible (< 1 second) and delays on the site driveway are expected to be less than 12 seconds with queue lengths of 1 vehicle or less. All v/c ratios are anticipated to be well below 1.00, indicating there will be adequate capacity to accommodate the anticipated traffic volumes.

Turn lane and traffic signal warrant analyses were conducted at this location to determine if turn lanes or a traffic signal were warranted. These analyses revealed that no turn-lanes are warranted along Pleasant Street, the site driveway can be constructed with a one-lane approach, and a traffic signal is not warranted. Pedestrian accommodations include a sidewalk provided along the west side of Pleasant Street. The warrant analysis worksheets are provided in the Appendix.

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 1
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2019 No-Build (TIAS)				2019 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
4. Main St at Pleasant St/Tuscan Market Driveway												
<i>Weekday AM:</i>												
Main Street EB left-turn	0.40	71.7	E	21/54	0.40	71.8	E	21/54	0.40	72.7	E	21/54
Main Street EB through/right-turn	0.40	15.4	B	184/325	0.44	16.3	B	212/372	0.47	17.7	B	242/400
Main Street WB left-turn	0.64	70.0	E	95/166	0.65	70.3	E	99/173	0.66	71.5	E	104/176
Main Street WB through/right-turn	0.39	11.1	B	187/328	0.42	11.4	B	203/355	0.42	12.1	B	220/362
Pleasant Street NB left-turn	0.25	64.5	E	25/52	0.26	64.6	E	25/54	0.47	66.7	E	56/96
Pleasant Street NB through/right-turn	0.26	64.9	E	11/63	0.27	64.9	E	11/63	0.27	64.2	E	13/66
Tuscan Market Driveway SB left-turn	0.08	64.1	E	6/23	0.08	64.2	E	6/23	0.12	65.4	E	9/29
Tuscan Market Driveway SB through/right-turn	0.38	67.5	E	29/74	0.38	67.6	E	29/74	0.39	68.5	E	30/75
Overall Intersection	0.43	30.6	C	--/--	0.46	30.5	C	--/--	0.50	32.0	C	--/--
<i>Weekday PM:</i>												
Main Street EB left-turn	0.32	55.2	E	27/61	0.32	55.2	E	27/61	0.32	55.6	E	27/61
Main Street EB through/right-turn	0.87	45.8	D	408/939	0.95	57.4	E	459/1015	1.04	54.2	F	519/1077
Main Street WB left-turn	0.72	37.7	D	111/163	0.71	37.5	D	118/150	0.70	52.8	D	126/147
Main Street WB through/right-turn	0.46	14.0	B	211/318	0.51	13.2	B	219/326	0.57	55.8	B	241/344
Pleasant Street NB left-turn	0.33	54.6	D	30/66	0.34	54.5	D	31/68	0.46	55.2	E	44/89
Pleasant Street NB through/right-turn	0.35	55.0	D	16/124	0.35	54.9	D	16/128	0.34	81.1	D	16/128
Tuscan Market Driveway SB left-turn	0.11	52.1	D	11/28	0.11	52.1	D	11/28	0.20	37.6	D	20/43
Tuscan Market Driveway SB through/right-turn	0.46	55.8	E	40/76	0.46	55.8	E	40/76	0.46	13.3	E	40/76
Overall Intersection	0.70	39.2	D	--/--	0.73	42.9	D	--/--	0.78	51.5	D	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

Table 1 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2019 No-Build (TIAS)				2019 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
4. Main St at Pleasant St/Tuscan Market Driveway												
<i>Saturday Midday:</i>												
Main Street EB left-turn	0.43	50.9	D	20/62	0.45	54.2	D	21/65	0.36	54.3	D	24/69
Main Street EB through/right-turn	0.77	36.0	D	263/440	0.81	37.9	D	306/502	0.85	41.2	D	381/591
Main Street WB left-turn	0.54	35.6	D	112/245	0.56	38.1	D	123/271	0.62	43.2	D	146/329
Main Street WB through/right-turn	0.45	15.0	B	164/302	0.48	14.9	B	190/349	0.52	16.2	B	224/380
Pleasant Street NB left-turn	0.08	43.4	D	6/26	0.08	46.2	D	7/28	0.30	50.3	D	29/75
Pleasant Street NB through/right-turn	0.25	44.9	D	5/92	0.26	47.7	D	6/96	0.25	50.0	D	6/101
Tuscan Market Driveway SB left-turn	0.18	42.6	D	18/54	0.19	45.6	D	19/57	0.23	49.3	D	23/66
Tuscan Market Driveway SB through/right-turn	0.68	55.0	D	69/194	0.72	62.2	E	73/211	0.77	71.2	E	82/230
Overall Intersection	0.66	33.1	C	--/--	0.69	35.5	D	--/--	0.74	38.5	D	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 1 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2019 No-Build (TIAS)				2019 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
5. Main St at Central St/Tuscan Kitchen Driveway												
<i>Weekday AM:</i>												
Main Street EB left-turn	0.00	8.9	A	--/0	0.00	9.0	A	--/0	0.00	9.1	A	--/0
Main Street EB through/right-turn	0.35	0.0	A	--/0	0.38	0.0	A	--/0	0.40	0.0	A	--/0
Main Street WB left-turn	0.00	8.9	A	--/0	0.00	9.1	A	--/0	--	--	--	--/--
Main Street WB through/right-turn	0.36	0.0	A	--/0	0.38	0.0	A	--/0	0.38	0.0	A	--/0
Central Street NB approach	0.09	22.7	C	--/7	0.09	24.3	C	--/8	0.09	14.0	B	--/7
<i>Weekday PM:</i>												
Main Street EB left-turn	0.00	8.8	A	--/0	0.00	9.0	A	--/0	0.00	9.2	A	--/0
Main Street EB through/right-turn	0.51	0.0	A	--/0	0.54	0.0	A	--/0	0.56	0.0	A	--/0
Main Street WB left-turn	0.02	10.5	B	--/1	0.02	11.0	B	--/1	--	--	--	--/--
Main Street WB through/right-turn	0.35	0.0	A	--/0	0.38	0.0	A	--/0	0.41	0.0	A	--/0
Central Street NB approach	0.08	17.8	C	--/6	0.09	19.6	C	--/7	0.11	19.1	C	--/9
<i>Saturday Middy:</i>												
Main Street EB left-turn	0.01	9.0	A	--/1	0.01	9.2	A	--/1	0.01	9.5	A	--/1
Main Street EB through/right-turn	0.40	0.0	A	--/0	0.43	0.0	A	--/0	0.47	0.0	A	--/0
Main Street WB left-turn	0.00	9.3	A	--/0	0.00	9.6	A	--/0	--	--	--	--/--
Main Street WB through/right-turn	0.38	0.0	A	--/0	0.41	0.0	A	--/0	0.44	0.0	A	--/0
Central Street NB approach	0.05	17.4	A	--/4	0.06	20.0	C	--/5	0.05	14.1	B	--/4

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 1 (continued)

INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2019 No-Build (TIAS)				2019 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
6. South Broadway at Main St. and N. Broadway												
<i>Weekday AM:</i>												
South Broadway NB left-turn/through	0.68	39.3	D	72/120	0.75	47.9	D	81/177	0.80	48.4	D	93/188
South Broadway NB right-turn	0.09	60.0	E	0/6	0.09	98.5	F	0/68	0.10	89.8	F	0/108
North Broadway SB approach	1.03	81.7	F	238/370	1.12	111.8	F	295/416	1.16	126.7	F	312/434
Main Street EB left-turn	0.58	28.9	C	87/130	0.58	28.4	C	87/132	0.57	27.8	C	92/137
Main Street EB through	0.55	29.6	C	169/226	0.55	28.8	C	172/233	0.55	28.6	C	174/235
Main Street EB right-turn	0.08	24.1	C	0/0	0.10	23.6	C	0/0	0.10	23.3	C	0/0
Main Street WB left-turn	0.57	30.5	C	131/215	0.67	33.3	C	152/245	0.71	36.2	D	160/263
Main Street WB through/right-turn	0.88	45.4	D	317/539	0.93	53.1	D	337/577	0.97	63.0	E	343/587
Overall Intersection	0.92	49.8	D	--/--	0.98	63.0	E	--/--	1.00	68.7	E	--/--
<i>Weekday PM:</i>												
South Broadway NB left-turn/through	1.34	204.4	F	447/525	1.49	274.8	F	537/591	1.62	329.8	F	612/665
South Broadway NB right-turn	0.15	32.9	C	25/27	0.19	58.9	E	24/110	0.23	44.4	D	22/96
North Broadway SB approach	1.08	109.1	F	245/393	1.21	158.2	F	311/450	1.32	203.1	F	377/505
Main Street EB left-turn	0.68	23.3	C	126/303	0.67	21.7	C	122/292	0.67	20.2	C	107/272
Main Street EB through	0.90	39.0	D	368/815	0.93	40.7	D	386/788	0.93	37.9	D	382/739
Main Street EB right-turn	0.06	30.8	C	0/24	0.07	30.9	C	4/34	0.08	31.0	C	3/32
Main Street WB left-turn	0.51	42.2	D	100/219	0.60	45.4	D	116/263	0.69	49.1	D	135/315
Main Street WB through/right-turn	1.00	86.3	F	354/765	1.08	109.9	F	377/797	1.10	116.7	F	381/800
Overall Intersection	1.07	102.4	F	--/--	1.17	138.4	F	--/--	1.22	164.6	F	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 1 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2019 No-Build (TIAS)				2019 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
6. South Broadway at Main St. and N. Broadway												
<i>Saturday Middy:</i>												
South Broadway NB left-turn/through	1.55	289.0	F	560/692	1.71	367.0	F	651/767	1.06	443.9	F	714/858
South Broadway NB right-turn	0.15	8.9	A	3/22	0.19	41.0	D	8/139	0.24	63.0	E	63/124
North Broadway SB approach	1.88	451.7	F	655/709	2.05	524.2	F	731/780	2.20	594.5	F	807/852
Main Street EB left-turn	0.62	41.1	D	192/463	0.62	40.5	D	194/484	0.63	40.5	D	199/492
Main Street EB through	0.65	43.0	D	216/515	0.66	42.3	D	221/540	0.66	42.3	D	222/542
Main Street EB right-turn	0.08	33.9	C	0/0	0.11	33.3	C	0/30	0.11	33.3	C	0/33
Main Street WB left-turn	0.78	57.5	E	186/383	0.94	82.3	F	219/454	1.05	111.9	F	251/511
Main Street WB through/right-turn	1.80	419.6	F	632/962	1.92	475.2	F	677/1001	1.98	500.8	F	692/1004
Overall Intersection	1.40	274.4	F	--/--	1.49	323.6	F	--/--	1.57	371.3	F	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

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Tuscan Village (Phase II) – Salem, New Hampshire

Table 1 (continued)
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	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
9. South Broadway at Post Office Driveway and Proposed Site Driveway												
<i>Weekday AM:</i>												
South Broadway NB left-turn	--	--	--	--/--	0.57	50.3	D	24/62	0.54	48.5	D	22/60
South Broadway NB through	0.21	11.6	B	75/106	0.24	11.7	B	83/126	0.25	12.8	B	81/123
South Broadway NB right-turn	0.04	18.0	B	0/9	0.04	7.5	A	0/3	0.04	8.4	A	0/2
South Broadway SB left-turn	--	--	--	--/--	0.47	50.8	D	28/31	0.47	52.3	D	28/29
South Broadway SB through/right-turn	0.33	4.3	A	62/87	0.40	10.0	B	83/295	0.43	11.5	B	90/301
Site Driveway EB left-turn	--	--	--	--/--	0.10	46.2	D	4/18	0.59	52.5	D	32/80
Site Driveway EB through/right-turn	--	--	--	--/--	0.11	46.3	D	4/18	0.22	44.7	D	13/38
Site Driveway EB right-turn	--	--	--	--/--	0.10	46.2	D	4/17	0.22	44.7	D	13/38
Post Office Driveway WB left-turn/through	0.43	46.2	D	29/53	0.60	54.0	D	29/54	0.43	44.8	D	28/54
Post Office Driveway WB right-turn	0.03	28.7	C	0/18	0.02	39.6	D	0/5	0.02	37.6	D	0/5
Overall Intersection	0.34	9.5	A	--/--	0.41	15.3	B	--/--	0.43	17.4	B	--/--
<i>Weekday PM:</i>												
South Broadway NB left-turn	--	--	--	--/--	0.45	71.0	E	23/47	0.64	77.8	E	84/183
South Broadway NB through	0.37	4.4	A	42/83	0.46	8.6	A	56/331	0.52	13.2	B	218/313
South Broadway NB right-turn	0.08	2.3	A	1/5	0.07	4.8	A	0/17	0.07	6.8	A	0/15
South Broadway SB left-turn	--	--	--	--/--	0.60	62.8	E	66/73	0.59	69.2	E	65/65
South Broadway SB through/right-turn	0.34	4.6	A	61/65	0.32	10.0	A	75/280	0.49	18.2	B	105/308
Site Driveway EB left-turn	--	--	--	--/--	0.20	50.6	D	17/42	0.74	56.8	E	123/281
Site Driveway EB through/right-turn	--	--	--	--/--	0.15	50.2	D	14/40	0.15	41.1	D	27/66
Site Driveway EB right-turn	--	--	--	--/--	0.15	50.2	D	14/40	0.15	41.1	D	27/66
Post Office Driveway WB left-turn/through	0.60	56.4	E	74/126	0.67	61.0	E	73/127	0.37	42.0	D	64/127
Post Office Driveway WB right-turn	0.08	35.5	D	0/44	0.07	40.5	D	0/46	0.07	32.3	C	0/46
Overall Intersection	0.39	9.2	A	--/--	0.49	17.3	B	--/--	0.57	25.2	C	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 1 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2019 No-Build (TIAS)				2019 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
9. South Broadway at Post Office Driveway and Proposed Site Driveway												
<i>Saturday Midday:</i>												
South Broadway NB left-turn	--	--	--	--/--	0.63	60.0	E	63/150	1.16	188.9	F	121/250
South Broadway NB through	0.49	14.7	B	247/312	0.58	18.6	B	242/486	0.81	38.7	D	366/455
South Broadway NB right-turn	0.12	10.8	B	19/50	0.09	12.6	B	1/42	0.09	24.1	C	0/40
South Broadway SB left-turn	--	--	--	--/--	0.63	63.6	E	72/72	0.64	68.5	E	62/62
South Broadway SB through/right-turn	0.54	8.0	A	120/120	0.57	15.1	B	143/339	0.92	35.9	D	518/518
Site Driveway EB left-turn	--	--	--	--/--	0.38	49.1	D	32/71	0.65	39.6	D	144/404
Site Driveway EB through/right-turn	--	--	--	--/--	0.23	47.6	D	30/68	0.14	30.4	C	33/91
Site Driveway EB right-turn	--	--	--	--/--	0.23	47.6	D	30/67	0.14	30.4	C	33/91
Post Office Driveway WB left-turn/through	0.69	58.6	E	110/171	0.80	69.9	E	109/206	0.35	31.7	C	80/209
Post Office Driveway WB right-turn	0.11	30.0	C	13/55	0.06	37.3	D	0/44	0.07	22.6	C	0/44
Overall Intersection	0.56	14.8	B	--/--	0.61	24.1	C	--/--	0.80	42.8	D	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 1 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2019 No-Build (TIAS)				2019 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
18. Pleasant Street at Site Driveway												
<i>Weekday AM:</i>												
Pleasant Street NB approach	--	--	--	--/--	--	--	--	--/--	0.12	0.0	A	--/0
Pleasant Street SB approach	--	--	--	--/--	--	--	--	--/--	0.01	0.4	A	--/1
Site Driveway WB approach	--	--	--	--/--	--	--	--	--/--	0.05	10.1	B	--/4
<i>Weekday PM:</i>												
Pleasant Street NB approach	--	--	--	--/--	--	--	--	--/--	0.18	0.0	A	--/0
Pleasant Street SB approach	--	--	--	--/--	--	--	--	--/--	0.01	0.6	A	--/1
Site Driveway WB approach	--	--	--	--/--	--	--	--	--/--	0.03	10.5	B	--/2
<i>Saturday Midday:</i>												
Pleasant Street NB approach	--	--	--	--/--	--	--	--	--/--	0.18	0.0	A	--/0
Pleasant Street SB approach	--	--	--	--/--	--	--	--	--/--	0.02	0.7	A	--/2
Site Driveway WB approach	--	--	--	--/--	--	--	--	--/--	0.06	11.3	B	--/5

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 2
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2029 No-Build (TIAS)				2029 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
4. Main St at Pleasant St/Tuscan Market Driveway												
<i>Weekday AM:</i>												
Main Street EB left-turn	0.40	71.7	E	21/54	0.40	72.1	E	21/54	0.40	73.3	E	21/54
Main Street EB through/right-turn	0.40	15.4	B	184/325	0.49	17.8	B	248/434	0.52	19.5	B	283/468
Main Street WB left-turn	0.64	70.0	E	95/166	0.68	71.1	E	109/186	0.69	72.2	E	115/192
Main Street WB through/right-turn	0.39	11.1	B	187/328	0.46	12.1	B	234/410	0.47	12.9	B	254/416
Pleasant Street NB left-turn	0.25	64.5	E	25/52	0.28	64.9	E	28/58	0.49	66.9	E	60/101
Pleasant Street NB through/right-turn	0.26	64.9	E	11/63	0.28	65.1	E	11/65	0.28	64.3	E	13/66
Tuscan Market Driveway SB left-turn	0.08	64.1	E	6/23	0.08	64.5	E	6/23	0.12	65.8	E	9/29
Tuscan Market Driveway SB through/right-turn	0.38	67.5	E	29/74	0.38	67.8	E	29/75	0.39	68.9	E	30/75
Overall Intersection	0.43	30.6	C	--/--	0.50	31.1	C	--/--	0.54	32.7	C	--/--
<i>Weekday PM:</i>												
Main Street EB left-turn	0.32	55.2	E	27/61	0.32	55.2	E	27/61	0.32	55.2	E	27/61
Main Street EB through/right-turn	0.87	45.8	D	408/939	1.13	115.6	F	567/1136	1.23	156.8	F	683/1197
Main Street WB left-turn	0.72	37.7	D	111/163	0.68	40.1	D	112/137	0.67	39.0	D	118/128
Main Street WB through/right-turn	0.46	14.0	B	211/318	0.57	11.7	B	193/306	0.62	12.1	B	251/317
Pleasant Street NB left-turn	0.33	54.6	D	30/66	0.37	54.6	D	35/74	0.48	55.7	E	47/95
Pleasant Street NB through/right-turn	0.35	55.0	D	16/124	0.36	54.7	D	16/137	0.35	54.2	D	15/137
Tuscan Market Driveway SB left-turn	0.11	52.1	D	11/28	0.11	52.1	D	11/28	0.21	52.9	D	21/43
Tuscan Market Driveway SB through/right-turn	0.46	55.8	E	40/76	0.46	55.8	E	40/76	0.46	55.8	E	40/76
Overall Intersection	0.70	39.2	D	--/--	0.80	64.9	E	--/--	0.85	79.8	E	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 2 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2029 No-Build (TIAS)				2029 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
4. Main St at Pleasant St/Tuscan Market Driveway												
<i>Saturday Midday:</i>												
Main Street EB left-turn	0.43	50.9	D	20/62	0.47	57.6	E	23/69	0.38	59.2	E	26/75
Main Street EB through/right-turn	0.77	36.0	D	263/440	0.83	39.0	D	352/577	0.84	39.6	D	438/679
Main Street WB left-turn	0.54	35.6	D	112/245	0.65	43.6	D	147/361	0.74	54.0	D	184/437
Main Street WB through/right-turn	0.45	15.0	B	164/302	0.51	15.0	B	217/398	0.54	16.1	B	256/433
Pleasant Street NB left-turn	0.08	43.4	D	6/26	0.09	48.5	D	8/31	0.31	54.5	D	33/83
Pleasant Street NB through/right-turn	0.25	44.9	D	5/92	0.28	50.3	D	6/104	0.27	54.2	D	7/110
Tuscan Market Driveway SB left-turn	0.18	42.6	D	18/54	0.20	48.4	D	19/60	0.24	54.0	D	26/71
Tuscan Market Driveway SB through/right-turn	0.68	55.0	D	69/194	0.76	70.0	E	77/229	0.83	87.8	F	90/255
Overall Intersection	0.66	33.1	C	--/--	0.74	37.5	D	--/--	0.78	41.2	D	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 2 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2029 No-Build (TIAS)				2029 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
5. Main St at Central St/Tuscan Kitchen Driveway												
<i>Weekday AM:</i>												
Main Street EB left-turn	0.00	8.9	A	--/0	0.00	9.3	A	--/0	0.00	9.4	A	--/0
Main Street EB through/right-turn	0.35	0.0	A	--/0	0.42	0.0	A	--/0	0.44	0.0	A	--/0
Main Street WB left-turn	0.00	8.9	A	--/0	0.00	9.4	A	--/0	--	--	--	--/--
Main Street WB through/right-turn	0.36	0.0	A	--/0	0.41	0.0	A	--/0	0.42	0.0	A	--/0
Central Street NB approach	0.09	22.7	C	--/7	0.13	28.3	D	--/11	0.10	15.0	C	--/8
<i>Weekday PM:</i>												
Main Street EB left-turn	0.00	8.8	A	--/0	0.00	9.3	A	--/0	0.00	9.5	A	--/0
Main Street EB through/right-turn	0.51	0.0	A	--/0	0.59	0.0	A	--/0	0.61	0.0	A	--/0
Main Street WB left-turn	0.02	10.5	B	--/1	0.02	11.8	B	--/2	--	--	--	--/--
Main Street WB through/right-turn	0.35	0.0	A	--/0	0.42	0.0	A	--/0	0.45	0.0	A	--/0
Central Street NB approach	0.08	17.8	C	--/6	0.14	25.2	D	--/12	0.15	22.8	C	--/13
<i>Saturday Midday:</i>												
Main Street EB left-turn	0.01	9.0	A	--/1	0.01	9.5	A	--/1	0.01	9.7	A	--/1
Main Street EB through/right-turn	0.40	0.0	A	--/0	0.48	0.0	A	--/0	0.51	0.0	A	--/0
Main Street WB left-turn	0.00	9.3	A	--/0	0.00	10.0	B	--/0	--	--	--	--/--
Main Street WB through/right-turn	0.38	0.0	A	--/0	0.45	0.0	A	--/0	0.48	0.0	A	--/0
Central Street NB approach	0.05	17.4	A	--/4	0.11	28.0	D	--/9	0.06	15.4	C	--/5

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 2 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2029 No-Build (TIAS)				2029 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
6. South Broadway at Main St. and N. Broadway												
<i>Weekday AM:</i>												
South Broadway NB left-turn	--	--	--	--/--	0.97	123.4	F	49/166	1.06	150.4	F	67/181
South Broadway NB through	0.68	39.3	D	72/120	0.53	46.9	D	113/113	0.56	45.7	D	121/121
South Broadway NB right-turn	0.09	60.0	E	0/6	0.12	12.2	B	21/21	0.13	9.6	A	18/18
South Broadway SB left-turn	--	--	--	--/--	0.81	79.1	E	62/153	0.81	79.1	E	62/153
North Broadway SB through/right-turn	1.03	81.7	F	238/370	1.16	130.0	F	295/415	1.20	145.7	F	313/435
Main Street EB left-turn	0.58	28.9	C	87/130	0.62	39.5	D	117/163	0.61	38.0	D	121/169
Main Street EB through	0.55	29.6	C	169/226	1.37	232.1	F	272/369	1.46	269.7	F	289/382
Main Street EB right-turn	0.08	24.1	C	0/0	0.17	27.3	C	15/49	0.17	27.8	C	15/49
Main Street WB left-turn	0.57	30.5	C	131/215	0.55	27.5	C	172/270	0.55	27.2	C	176/276
Main Street WB through/right-turn	0.88	45.4	D	317/539	1.14	119.3	F	450/694	1.19	140.6	F	463/703
Overall Intersection	0.92	49.8	D	--/--	1.05	100.0	F	--/--	1.09	112.2	F	--/--
<i>Weekday PM:</i>												
South Broadway NB left-turn	--	--	--	--/--	1.76	433.7	F	195/330	2.09	579.1	F	249/391
South Broadway NB through	1.34	204.4	F	447/525	1.04	84.5	F	375/425	1.10	105.6	F	416/473
South Broadway NB right-turn	0.15	32.9	C	25/27	0.24	37.6	D	81/81	0.27	26.4	C	90/90
South Broadway SB left-turn	--	--	--	--/--	1.01	149.2	F	80/198	1.01	149.2	F	80/198
North Broadway SB through/right-turn	1.08	109.1	F	245/393	0.79	49.8	D	240/310	0.86	54.7	D	268/343
Main Street EB left-turn	0.68	23.3	C	126/303	0.63	23.0	C	132/280	0.63	22.6	C	133/264
Main Street EB through	0.90	39.0	D	368/815	1.44	249.5	F	535/749	1.64	336.5	F	588/705
Main Street EB right-turn	0.06	30.8	C	0/24	0.11	53.6	D	49/64	0.12	56.0	E	50/61
Main Street WB left-turn	0.51	42.2	D	100/219	0.56	44.8	D	141/363	0.56	42.6	D	156/415
Main Street WB through/right-turn	1.00	86.3	F	354/765	1.60	330.5	F	531/940	1.62	341.7	F	537/943
Overall Intersection	1.07	102.4	F	--/--	1.05	143.2	F	--/--	1.10	167.7	F	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 2 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2029 No-Build (TIAS)				2029 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
6. South Broadway at Main St. and N. Broadway												
<i>Saturday MIDDAY:</i>												
South Broadway NB left-turn	--	--	--	--/--	1.10	162.0	F	121/268	1.39	285.4	F	191/282
South Broadway NB through	1.55	289.0	F	560/692	1.25	157.5	F	517/633	1.33	186.6	F	552/695
South Broadway NB right-turn	0.15	8.9	A	3/22	0.22	30.9	C	91/91	0.25	8.3	A	0/56
South Broadway SB left-turn	--	--	--	--/--	1.14	189.1	F	103/199	1.14	189.1	F	103/199
North Broadway SB through/right-turn	1.88	451.7	F	655/709	1.51	282.1	F	631/680	1.62	332.4	F	706/751
Main Street EB left-turn	0.62	41.1	D	192/463	0.67	41.2	D	221/519	0.67	41.0	D	225/532
Main Street EB through	0.65	43.0	D	216/515	1.52	304.8	F	347/630	1.76	412.2	F	407/637
Main Street EB right-turn	0.08	33.9	C	0/0	0.26	35.8	D	43/117	0.28	37.5	D	47/120
Main Street WB left-turn	0.78	57.5	E	186/383	0.64	40.2	D	213/545	0.67	39.6	D	227/605
Main Street WB through/right-turn	1.80	419.6	F	632/962	2.72	836.5	F	813/1194	2.81	876.5	F	825/1197
Overall Intersection	1.40	274.4	F	--/--	1.30	269.3	F	--/--	1.39	300.0	F	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 2 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2029 No-Build (TIAS)				2029 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
9. South Broadway at Post Office Driveway and Proposed Site Driveway												
<i>Weekday AM:</i>												
South Broadway NB left-turn	--	--	--	--/--	0.57	49.7	D	24/63	0.54	48.4	D	22/60
South Broadway NB through	0.21	11.6	B	75/106	0.27	11.8	B	92/137	0.27	13.0	B	90/133
South Broadway NB right-turn	0.04	18.0	B	0/9	0.04	7.5	A	0/4	0.04	8.4	A	0/1
South Broadway SB left-turn	--	--	--	--/--	0.47	58.2	E	28/35	0.47	60.2	E	28/34
South Broadway SB through/right-turn	0.33	4.3	A	62/87	0.44	4.6	A	26/239	0.47	5.1	A	28/242
Site Driveway EB left-turn	--	--	--	--/--	0.10	46.2	D	4/18	0.59	52.5	D	32/80
Site Driveway EB through/right-turn	--	--	--	--/--	0.11	46.3	D	4/18	0.22	44.7	D	13/38
Site Driveway EB right-turn	--	--	--	--/--	0.10	46.2	D	4/17	0.22	44.7	D	13/38
Post Office Driveway WB left-turn/through	0.43	46.2	D	29/53	0.60	54.0	D	29/54	0.43	44.8	D	28/54
Post Office Driveway WB right-turn	0.03	28.7	C	0/18	0.02	39.6	D	0/5	0.02	37.6	D	0/5
Overall Intersection	0.34	9.5	A	--/--	0.44	12.2	B	--/--	0.46	13.9	B	--/--
<i>Weekday PM:</i>												
South Broadway NB left-turn	--	--	--	--/--	0.45	70.7	E	23/46	0.64	78.9	E	84/175
South Broadway NB through	0.37	4.4	A	42/83	0.51	9.7	A	73/393	0.57	14.0	B	72/374
South Broadway NB right-turn	0.08	2.3	A	1/5	0.07	5.0	A	0/13	0.07	6.4	A	0/11
South Broadway SB left-turn	--	--	--	--/--	0.60	67.4	E	67/82	0.59	74.9	E	65/76
South Broadway SB through/right-turn	0.34	4.6	A	61/65	0.35	10.1	B	32/377	0.53	15.4	B	62/420
Site Driveway EB left-turn	--	--	--	--/--	0.20	50.6	D	17/42	0.74	56.8	E	123/281
Site Driveway EB through/right-turn	--	--	--	--/--	0.15	50.2	D	14/40	0.15	41.1	D	27/66
Site Driveway EB right-turn	--	--	--	--/--	0.15	50.2	D	14/40	0.15	41.1	D	27/66
Post Office Driveway WB left-turn/through	0.60	56.4	E	74/126	0.67	61.0	E	73/127	0.37	42.0	D	64/127
Post Office Driveway WB right-turn	0.08	35.5	D	0/44	0.07	40.5	D	0/46	0.07	32.3	C	0/46
Overall Intersection	0.39	9.2	A	--/--	0.52	17.5	B	--/--	0.61	24.2	C	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

TRAFFIC IMPACT AND ACCESS STUDY – ADDENDUM 12/9/16

Tuscan Village (Phase II) – Salem, New Hampshire

Table 2 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2029 No-Build (TIAS)				2029 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
9. South Broadway at Post Office Driveway and Proposed Site Driveway												
<i>Saturday Midday:</i>												
South Broadway NB left-turn	--	--	--	--/--	0.63	60.0	E	63/150	1.16	188.9	F	121/250
South Broadway NB through	0.49	14.7	B	247/312	0.64	19.8	B	281/568	0.89	44.5	D	425/526
South Broadway NB right-turn	0.12	10.8	B	19/50	0.09	12.6	B	1/42	0.09	24.1	C	0/40
South Broadway SB left-turn	--	--	--	--/--	0.63	66.8	E	73/73	0.64	66.9	E	58/58
South Broadway SB through/right-turn	0.54	8.0	A	120/120	0.63	12.3	B	58/456	1.00	33.3	C	524/524
Site Driveway EB left-turn	--	--	--	--/--	0.38	49.1	D	32/71	0.65	39.6	D	144/404
Site Driveway EB through/right-turn	--	--	--	--/--	0.23	47.6	D	30/68	0.14	30.4	C	33/91
Site Driveway EB right-turn	--	--	--	--/--	0.23	47.6	D	30/67	0.14	30.4	C	33/91
Post Office Driveway WB left-turn/through	0.69	58.6	E	110/171	0.80	69.9	E	109/206	0.35	31.7	C	80/209
Post Office Driveway WB right-turn	0.11	30.0	C	13/55	0.06	37.3	D	0/44	0.07	22.6	C	0/44
Overall Intersection	0.56	14.8	B	--/--	0.65	23.1	C	--/--	0.84	43.4	D	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

Table 2 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS

Intersection/Peak Hour/Lane Group	2016 Existing (TIAS)				2029 No-Build (TIAS)				2029 Build			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
18. Pleasant Street at Site Driveway												
<i>Weekday AM:</i>												
Pleasant Street NB approach	--	--	--	--/--	--	--	--	--/--	0.13	0.0	A	--/0
Pleasant Street SB approach	--	--	--	--/--	--	--	--	--/--	0.01	0.4	A	--/1
Site Driveway WB approach	--	--	--	--/--	--	--	--	--/--	0.06	10.3	B	--/5
<i>Weekday PM:</i>												
Pleasant Street NB approach	--	--	--	--/--	--	--	--	--/--	0.20	0.0	A	--/0
Pleasant Street SB approach	--	--	--	--/--	--	--	--	--/--	0.01	0.6	A	--/1
Site Driveway WB approach	--	--	--	--/--	--	--	--	--/--	0.03	10.8	B	--/3
<i>Saturday Midday:</i>												
Pleasant Street NB approach	--	--	--	--/--	--	--	--	--/--	0.19	0.0	A	--/0
Pleasant Street SB approach	--	--	--	--/--	--	--	--	--/--	0.02	0.7	A	--/2
Site Driveway WB approach	--	--	--	--/--	--	--	--	--/--	0.07	11.5	B	--/6

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

MITIGATION COMMITMENTS

Since the submission of the TIAS, mitigation measures have been committed to by the Applicant. These include mitigation measures previously committed to, as well as additional mitigation required at the intersection of Main Street and Pleasant Street (Node 4) due to the elimination of the site driveway opposite the Coca-Cola driveway (Node 8) and the redistribution of traffic as requested by the NHDOT. The following mitigation is currently proposed for the 50-acre parcel (North Village):

Signal Timing Modifications (during AM, PM, and SAT peak periods):

Coordination of South Broadway Corridor:

6. Main Street (NH Route 97) at North Broadway and South Broadway (NH Route 28)
9. South Broadway (NH Route 28) at Post Office Driveway and Site Driveway
10. South Broadway (NH Route 28) at Rockingham Park Boulevard and Veterans Memorial Parkway*
11. South Broadway (NH Route 28) at Kelly Road and Shared Retail Driveway

Coordination of Rockingham Park Boulevard Corridor:

12. Rockingham Park Boulevard at Existing Racetrack Driveway/Site Driveway
13. Rockingham Park Boulevard at Mall Road (NH Route 38)

Other Locations:

3. Main Street/Pelham Road (NH Route 97) at North Policy Street and South Policy Street
4. Main Street (NH Route 97) at Pleasant Street and Tuscan Market Driveway
7. Main Street (NH Route 97) at Geremonty Drive
 - Replace LEFT TURN YIELD ON GREEN BALL sign (R10-12) on NB approach*
14. Mall Road (NH Route 38) at Mall Driveway and Rockingham Park Boulevard Flyover

Geometric Improvements:

5. Main Street (NH Route 97) at Central Street and Enter-Only Tuscan Kitchen Driveway
 - Right-in/Right-out only
15. Mall Road (NH Route 38) at Mall Driveway (Sears) and Site Driveway
 - Restripe the southbound approach to include a left-turn lane into the site per meeting with Simon Mall

New Traffic Signal and Geometric Improvements:

9. South Broadway (NH Route 28) at Post Office Driveway and Site Driveway
 - This work will include construction of exclusive left-turn lanes, all new signal equipment/poles/mast arms and other geometric improvements to the Post Office Driveway as part of the auto dealership development (Phase I).
11. South Broadway (NH Route 28) at Kelly Road and Shared Retail Driveway*
 - Add pedestrian equipment and phasing for NH28 crosswalk
12. Rockingham Park Boulevard at Existing Racetrack Driveway/Site Driveway
 - This work will include construction of an additional Rockingham Park Boulevard eastbound left-turn lane along with new signal equipment to accommodate the new lanes and relocation of the existing equipment.
13. Rockingham Park Boulevard at Mall Road (NH Route 38)
 - This work will include construction of an additional Rockingham Park Boulevard westbound through lane along with new signal equipment to accommodate the new lanes and relocation of the existing equipment.

Fair-Share Contribution

7. Main Street (NH Route 97) at Geremonty Drive** - \$11,100
 - Improvements needed at this location with or without the North Village project in place includes the construction of a Main Street eastbound exclusive right-turn lane so this movement can run as an overlap with the Geremonty Drive northbound left-turn movement, as well as the addition of a Geremonty Drive northbound exclusive right-turn lane. These improvements will also require modifications to the signal equipment to accommodate the new lanes. These improvements are expected to cost approximately \$300,000. The North Village project's impact to this location is 1.4% during the

weekday AM peak hour, 2.5% during the weekday PM peak hour, and 3.7% during the Saturday midday peak hour. Accordingly, the fair-share contribution for improvements is \$11,100.

*It is expected there would be a credit on Traffic Impact Fees for the project at these locations (Node # 7, Node #10, and Node #11) since the modifications being made are not due to the project.

**It is expected that the Traffic Impact Fees for the project would be applied to Node #7 for geometric improvements.

The mitigation commitment sketches are provided in the Appendix for the following intersections:

- Node 5 – Main Street (NH Route 97) at Central Street and Enter-Only Tuscan Kitchen Driveway
- Node 9 – South Broadway (NH Route 28) at Post Office Driveway and Site Driveway
- Node 12 – Rockingham Park Boulevard at Existing Racetrack Driveway/Site Driveway
- Node 13 – Rockingham Park Boulevard at Mall Road (NH Route 38)
- Node 15 – Mall Road (NH Route 38) at Mall Driveway (Sears) and Site Driveway

The 2019 and 2029 capacity analysis results for the mitigation are shown in Tables 3 and 4, respectively. All mitigation analysis worksheets are provided in the Appendix.

Main Street/Pelham Road (NH Route 97) at North Policy Street and South Policy Street

Traffic signal timing modifications are committed to at this location during the weekday AM, weekday PM, and Saturday midday. With the improved timings, the intersection is anticipated to operate at an overall LOS D during the weekday AM and Saturday midday peak hours, and overall LOS E during the weekday PM peak hour in the 2029 future condition only. All volume-to-capacity (v/c) ratios are anticipated to be below 1.00, indicating adequate capacity. Overall intersection delay is expected to be brought back to the no-build condition, within 1 second.

Main Street (NH Route 97) at Pleasant Street and Tuscan Market Driveway

Traffic signal timing modifications are committed to at this location during the weekday AM, weekday PM, and Saturday midday. Concurrent phasing will be provided for the northbound/southbound (Pleasant Street/Tuscan Market Driveway) approaches. With the improved timings, the intersection is anticipated to operate at an overall LOS D or better. All v/c ratios are anticipated to be below 1.00, indicating adequate capacity. Overall intersection delay is expected to improve over the no-build condition.

Main Street (NH Route 97) at Central Street and Enter-Only Tuscan Kitchen Driveway

Improvements at this location include limiting this intersection to a right-in/right-out for Central Street traffic. As a result, the intersection is anticipated to operate with all movements at LOS C or better. All v/c ratios are anticipated to be below 1.00, indicating adequate capacity.

Main Street (NH Route 97) at North Broadway/South Broadway (NH Route 28) – The Depot

Capacity constraints exist at this location with or without the North Village project in place. The roadway extension of Central Street into the site will allow a connection to the signalized site driveway on South Broadway (NH Route 28) across from the Post Office driveway, thereby relieving The Depot of some Main Street eastbound right-turn movements. The updated figures showing the Build condition with mitigation is provided in the Appendix. In addition, the owner of the Tuscan Village project has donated funds in order to construct a sidewalk along the west side of South Broadway (NH Route 28) as part the Town's improvements at this location. Finally, the coordination of the South Broadway corridor has been committed to during the weekday AM, weekday PM, and Saturday midday. With the updated timings in place, progression through the corridor improves.

Per discussions with the Town, a ring road is also proposed to be constructed to the east of the Depot intersection in 2018. This ring road will reduce the number of westbound left turns at the Depot intersection. The volumes in the analysis does not account for this shift in traffic since engineered plans have not been prepared for this improvement, however, it is anticipated to alleviate traffic at the Depot.

Main Street (NH Route 97) at Geremonty Drive

Traffic signal timing modifications are committed to at this location during the weekday AM, weekday PM, and Saturday midday. With the improved timings, the intersection is anticipated to improve over no-build conditions in terms of overall delay. Overall levels-of-service are anticipated to either remain the same or improve over the no-build conditions. Capacity constraints exist at this location with or without the North Village project in place, and therefore a monetary contribution for improvements is committed to, as discussed previously in this *Mitigation Commitments* section.

It was noted in the field, that the LEFT TURN YIELD ON GREEN BALL sign (R10-12) facing the Geremonty Drive northbound approach was faded. It is recommended that this sign be replaced with a new one.

South Broadway (NH Route 28) at Post Office Driveway and Proposed Site Driveway

The coordination of the South Broadway corridor has been committed to during the weekday AM, weekday PM, and Saturday midday. With the improved timings, the intersection is anticipated to operate at an overall LOS C or better. All v/c ratios are anticipated to be below 1.00, indicating adequate capacity.

South Broadway (NH Route 28) at Rockingham Park Boulevard and Veterans Memorial Pkwy

The coordination of the South Broadway and Rockingham Park Boulevard corridors has been committed to during the weekday AM, weekday PM, and Saturday midday. With the improved timings along the corridors, the intersection is anticipated to operate at an overall LOS C during the weekday AM peak hour, LOS D during the weekday PM peak hour, and LOS F during the Saturday midday peak hour. Capacity constraints exist at this location on Saturday with or without the North Village project in place. Overall delay is expected to decrease with the improvements along the corridor in place.

South Broadway (NH Route 28) at Kelly Road and Shared Retail Driveway

The coordination of the South Broadway corridor has been committed to during the weekday AM, weekday PM, and Saturday midday. With the improved timings, the intersection is anticipated to operate at an overall LOS D or better. All v/c ratios are anticipated to be below 1.00, indicating adequate capacity. Overall intersection delay is expected to be brought back to the no-build condition, within 1 second.

It was noted in the field that there was a crosswalk across South Broadway, but no pedestrian signal accommodations in order to cross safely. Adding pedestrian equipment to this intersection has been committed to in order to allow a concurrent pedestrian phase to run with phase 3 (Kelly Road approach).

Rockingham Park Boulevard at Racetrack Driveway/Proposed Site Driveway

Geometric improvements at this location include the construction of a second eastbound left-turn lane into the site. In addition, the coordination of the Rockingham Park Boulevard corridor has been committed to during the weekday AM, weekday PM, and Saturday midday. With the improved timings, the intersection is anticipated to operate at an overall LOS B or better. All v/c ratios are anticipated to be below 1.00, indicating adequate capacity. Overall intersection delay is expected to be less than 15 seconds.

Rockingham Park Boulevard at Mall Road (NH Route 38)

Geometric improvements at this location include the construction of a third westbound through lane. In addition, the coordination of the Rockingham Park Boulevard corridor has been committed to during the weekday AM, weekday PM, and Saturday midday. With the improved timings, the intersection is anticipated to operate at an overall LOS C or better. All v/c ratios are anticipated to be below 1.00, indicating adequate capacity. Overall intersection delay is expected to be brought back to the no-build condition, within 1 second.

Mall Road (NH Route 38) at Mall Driveway and Rockingham Park Boulevard Flyover

Traffic signal timing modifications are committed to at this location during the weekday AM, weekday PM, and Saturday midday. With the improved timings, the intersection is anticipated to operate at an overall LOS C or better. All v/c ratios are anticipated to be below 1.00, indicating adequate capacity. Overall intersection delay is expected to be brought back to the no-build condition, within 2 seconds.

Mall Road (NH Route 38) at Mall Driveway and Proposed Site Driveway

The proposed site driveway creates the fourth leg to the unsignalized intersection of Mall Road at the Mall driveway, near the Sears Auto Center. The site driveway will consist of two approach lanes including an exclusive left-turn lane and a shared through/right-turn lane. Improvements at this location include the striping of a southbound left-turn lane into the site.

With the two-lane approach and an exclusive southbound left-turn lane in place, the intersection is anticipated to operate with all movements at LOS C or better with the exception to the site driveway left-turn movement during the Saturday midday peak hour which will operate with long delays (LOS F). Delays on all other movements are expected to be 17 seconds or less with v/c ratios below 1.00, indicating adequate capacity.

Table 3
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
3. Main Street at N. Policy Street/S. Policy Street												
Weekday AM:	Cycle Length = 123 seconds				Cycle Length = 123 seconds				Cycle Length = 123 seconds			
Pelham Road EB left-turn	0.66	31.7	C	307/501	0.66	31.7	C	307/501	0.70	34.8	C	320/524
Pelham Road EB through	0.20	24.1	C	75/120	0.22	24.3	C	82/129	0.22	24.7	C	83/129
Pelham Road EB right-turn	0.08	14.5	B	0/16	0.08	14.5	B	0/16	0.08	14.7	B	0/16
Main Street WB left-turn	0.43	52.9	D	54/103	0.43	52.9	D	54/103	0.43	52.9	D	54/103
Main Street WB through	1.12	140.9	F	153/234	1.21	174.5	F	167/263	1.02	105.5	F	164/237
Main Street WB right-turn	0.06	0.1	A	0/0	0.06	0.1	A	0/0	0.06	0.1	A	0/0
South Policy Street NB left-turn	0.68	59.4	E	105/157	0.68	59.4	E	105/157	0.67	58.5	E	105/157
South Policy Street NB through	0.32	35.1	D	94/149	0.32	35.1	D	94/149	0.32	34.6	C	93/149
South Policy Street NB right-turn	0.04	32.3	C	0/0	0.04	32.3	C	0/0	0.04	31.8	C	0/0
North Policy Street SB left-turn	0.39	61.9	E	11/33	0.39	61.9	E	11/33	0.39	61.9	E	11/33
North Policy Street SB through	0.62	48.9	D	155/229	0.62	48.9	D	155/229	0.61	48.1	D	154/229
North Policy Street SB right-turn	0.14	11.2	B	0/23	0.14	11.2	B	0/23	0.14	12.2	B	0/24
Overall Intersection	0.73	45.9	D	--/--	0.74	52.3	D	--/--	0.74	41.9	D	--/--
Weekday PM::	Cycle Length = 143 seconds				Cycle Length = 143 seconds				Cycle Length = 143 seconds			
Pelham Road EB left-turn	0.75	56.3	E	284/545	0.75	56.3	E	284/545	0.81	63.3	E	289/509
Pelham Road EB through	0.45	37.2	D	206/380	0.48	37.8	D	222/419	0.44	33.3	C	213/322
Pelham Road EB right-turn	0.08	17.9	B	0/27	0.09	18.0	B	0/29	0.09	15.2	B	0/26
Main Street WB left-turn	0.36	61.1	E	53/87	0.36	61.1	E	53/87	0.55	68.1	E	55/92
Main Street WB through	0.67	58.9	E	203/296	0.75	62.1	E	231/348	0.67	56.2	E	232/273
Main Street WB right-turn	0.01	0.0	A	0/0	0.01	0.0	A	0/0	0.01	0.0	A	0/0
South Policy Street NB left-turn	0.82	74.9	E	210/269	0.82	74.9	E	210/269	0.81	72.0	E	205/343
South Policy Street NB through	0.55	46.6	D	215/293	0.55	46.6	D	215/293	0.56	46.9	D	210/313
South Policy Street NB right-turn	0.05	39.8	D	0/0	0.05	39.8	D	0/0	0.05	40.1	D	0/0
North Policy Street SB left-turn	0.63	71.5	E	73/128	0.63	71.5	E	73/128	0.65	73.9	E	73/141
North Policy Street SB through	0.74	64.5	E	204/391	0.74	64.5	E	204/391	0.78	68.5	E	205/378
North Policy Street SB right-turn	0.22	26.6	C	22/71	0.22	26.6	C	22/71	0.21	28.8	C	17/59
Overall Intersection	0.71	47.0	D	--/--	0.73	47.6	D	--/--	0.73	47.1	D	--/--
Saturday Midday:	Cycle Length = 254 seconds				Cycle Length = 254 seconds				Cycle Length = 254 seconds			
Pelham Road EB left-turn	0.63	51.7	D	112/183	0.64	54.0	D	117/190	0.57	48.9	D	110/220
Pelham Road EB through	0.62	41.8	D	176/236	0.66	42.4	D	211/274	0.57	36.9	D	195/315
Pelham Road EB right-turn	0.08	21.3	C	4/19	0.09	20.8	C	7/22	0.08	18.0	B	5/23
Main Street WB left-turn	0.34	49.7	D	39/80	0.35	51.8	D	40/85	0.34	50.8	D	38/97
Main Street WB through	0.62	46.0	D	137/195	0.66	46.8	D	167/232	0.59	42.7	D	157/270
Main Street WB right-turn	0.00	0.0	A	0/0	0.00	0.0	A	0/0	0.00	0.0	A	0/0
South Policy Street NB left-turn	0.62	47.0	D	124/198	0.62	49.0	D	129/205	0.63	49.0	D	125/239
South Policy Street NB through	0.23	19.9	B	72/153	0.23	21.3	C	77/161	0.26	24.9	C	99/175
South Policy Street NB right-turn	0.03	18.1	B	0/0	0.03	19.4	B	0/0	0.03	22.5	C	0/0
North Policy Street SB left-turn	0.45	59.3	E	12/39	0.46	61.7	E	12/40	0.35	58.6	E	12/46
North Policy Street SB through	0.50	34.4	C	168/303	0.52	36.6	D	177/318	0.60	41.5	D	180/359
North Policy Street SB right-turn	0.09	19.1	B	16/43	0.09	20.5	C	17/46	0.09	21.9	C	17/51
Overall Intersection	0.62	37.6	D	--/--	0.64	39.3	D	--/--	0.64	37.5	D	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

^e Mitigation – Optimize splits.

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
4. Main St at Pleasant St/Tuscan Market Dwy												
Weekday AM:	Cycle Length = 195 seconds				Cycle Length = 195 seconds				Cycle Length = 100 seconds			
Main Street EB left-turn	0.40	71.8	E	21/54	0.40	72.7	E	21/54	0.66	72.3	E	9/28
Main Street EB through/right-turn	0.44	16.3	B	212/372	0.47	17.7	B	242/400	0.52	12.7	B	129/204
Main Street WB left-turn	0.65	70.3	E	99/173	0.66	71.5	E	104/176	0.58	35.0	C	45/93
Main Street WB through/right-turn	0.42	11.4	B	203/355	0.42	12.1	B	220/362	0.44	7.8	A	64/213
Pleasant Street NB left-turn	0.26	64.6	E	25/54	0.47	66.7	E	56/96	0.51	35.4	D	25/53
Pleasant Street NB through/right-turn	0.27	64.9	E	11/63	0.27	64.2	E	13/66	0.24	31.8	C	6/48
Tuscan Market Driveway SB left-turn	0.08	64.2	E	6/23	0.12	65.4	E	9/29	0.12	31.1	C	4/16
Tuscan Market Driveway SB through/right-turn	0.38	67.6	E	29/74	0.39	68.5	E	30/75	0.19	31.3	C	10/38
Overall Intersection	0.46	30.5	C	--/--	0.50	32.0	C	--/--	0.55	18.2	B	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
Main Street EB left-turn	0.32	55.2	E	27/61	0.32	55.6	E	27/61	0.36	56.5	E	27/64
Main Street EB through/right-turn	0.95	57.4	E	459/1015	1.04	54.2	F	519/1077	0.82	34.5	C	422/826
Main Street WB left-turn	0.71	37.5	D	118/150	0.70	52.8	D	126/147	0.70	47.8	D	120/138
Main Street WB through/right-turn	0.51	13.2	B	219/326	0.57	55.8	B	241/344	0.47	6.7	A	92/223
Pleasant Street NB left-turn	0.34	54.5	D	31/68	0.46	55.2	E	44/89	0.48	54.0	D	43/119
Pleasant Street NB through/right-turn	0.35	54.9	D	16/128	0.34	81.1	D	16/128	0.30	51.2	D	15/142
Tuscan Market Driveway SB left-turn	0.11	52.1	D	11/28	0.20	37.6	D	20/43	0.44	55.9	E	20/61
Tuscan Market Driveway SB through/right-turn	0.46	55.8	E	40/76	0.46	13.3	E	40/76	0.36	51.7	D	39/80
Overall Intersection	0.73	42.9	D	--/--	0.78	51.5	D	--/--	0.70	32.9	C	--/--
Saturday Middy:	Cycle Length = 195 seconds				Cycle Length = 195 seconds				Cycle Length = 120 seconds			
Main Street EB left-turn	0.45	54.2	D	21/65	0.36	54.3	D	24/69	0.51	44.8	D	17/49
Main Street EB through/right-turn	0.81	37.9	D	306/502	0.85	41.2	D	381/591	0.73	21.3	C	246/371
Main Street WB left-turn	0.56	38.1	D	123/271	0.62	43.2	D	146/329	0.65	33.7	C	105/197
Main Street WB through/right-turn	0.48	14.9	B	190/349	0.52	16.2	B	224/380	0.46	8.3	A	135/203
Pleasant Street NB left-turn	0.08	46.2	D	7/28	0.30	50.3	D	29/75	0.32	34.8	C	21/57
Pleasant Street NB through/right-turn	0.26	47.7	D	6/96	0.25	50.0	D	6/101	0.24	33.8	C	4/100
Tuscan Market Driveway SB left-turn	0.19	45.6	D	19/57	0.23	49.3	D	23/66	0.39	36.5	D	17/48
Tuscan Market Driveway SB through/right-turn	0.72	62.2	E	73/211	0.77	71.2	E	82/230	0.58	38.5	D	54/127
Overall Intersection	0.69	35.5	D	--/--	0.74	38.5	D	--/--	0.72	23.4	C	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Provide concurrent phasing for northbound/southbound approaches (Pleasant Street/Tuscan Market Driveway).

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
5. Main St at Central St/Tuscan Kitchen Driveway												
Weekday AM:	Unsignalized				Unsignalized				Unsignalized			
Main Street EB left-turn	0.00	9.0	A	--/0	0.00	9.1	A	--/0	0.00	9.1	A	--/0
Main Street EB through/right-turn	0.38	0.0	A	--/0	0.40	0.0	A	--/0	0.40	0.0	A	--/0
Main Street WB left-turn	0.00	9.1	A	--/0	--	--	--	--/--	--	--	--	--/--
Main Street WB through/right-turn	0.38	0.0	A	--/0	0.38	0.0	A	--/0	0.38	0.0	A	--/0
Central Street NB approach	0.09	24.3	C	--/8	0.09	14.0	B	--/7	0.08	13.2	B	--/7
Weekday PM:	Unsignalized				Unsignalized				Unsignalized			
Main Street EB left-turn	0.00	9.0	A	--/0	0.00	9.2	A	--/0	0.00	9.2	A	--/0
Main Street EB through/right-turn	0.54	0.0	A	--/0	0.56	0.0	A	--/0	0.56	0.0	A	--/0
Main Street WB left-turn	0.02	11.0	B	--/1	--	--	--	--/--	--	--	--	--/--
Main Street WB through/right-turn	0.38	0.0	A	--/0	0.41	0.0	A	--/0	0.41	0.0	A	-/0
Central Street NB approach	0.09	19.6	C	--/7	0.11	19.1	C	--/9	0.10	17.5	C	--/8
Saturday Midday:	Unsignalized				Unsignalized				Unsignalized			
Main Street EB left-turn	0.01	9.2	A	--/1	0.01	9.5	A	--/1	0.01	9.5	A	--/1
Main Street EB through/right-turn	0.43	0.0	A	--/0	0.47	0.0	A	--/0	0.47	0.0	A	--/0
Main Street WB left-turn	0.00	9.6	A	--/0	--	--	--	--/--	--	--	--	--/--
Main Street WB through/right-turn	0.41	0.0	A	--/0	0.44	0.0	A	--/0	0.44	0.0	A	--/0
Central Street NB approach	0.06	20.0	C	--/5	0.05	14.1	B	--/4	0.04	13.0	B	--/3

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Provide access to South Broadway via Central Street. Under Build condition, construct Central Street as a right-in/right-out roadway.

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
6. South Broadway at Main St. and N. Broadway												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
South Broadway NB left-turn/through	0.75	47.9	D	81/177	0.80	48.4	D	93/188	0.80	33.0	C	131/131
South Broadway NB right-turn	0.09	98.5	F	0/68	0.10	89.8	F	0/108	0.10	7.7	A	0/4
North Broadway SB approach	1.12	111.8	F	295/416	1.16	126.7	F	312/434	1.16	126.7	F	312/434
Main Street EB left-turn	0.58	28.4	C	87/132	0.57	27.8	C	92/137	0.57	27.9	C	94/140
Main Street EB through	0.55	28.8	C	172/233	0.55	28.6	C	174/235	0.56	29.1	C	177/239
Main Street EB right-turn	0.10	23.6	C	0/0	0.10	23.3	C	0/0	0.02	22.9	C	0/0
Main Street WB left-turn	0.67	33.3	C	152/245	0.71	36.2	D	160/263	0.71	35.9	D	160/257
Main Street WB through/right-turn	0.93	53.1	D	337/577	0.97	63.0	E	343/587	0.97	64.1	E	344/587
Overall Intersection	0.98	63.0	E	--/--	1.00	68.7	E	--/--	1.01	63.2	E	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn/through	1.49	274.8	F	537/591	1.62	329.8	F	612/665	1.68	348.1	F	624/697
South Broadway NB right-turn	0.19	58.9	E	24/110	0.23	44.4	D	22/96	0.23	12.8	B	25/25
North Broadway SB approach	1.21	158.2	F	311/450	1.32	203.1	F	377/505	1.25	167.9	F	328/492
Main Street EB left-turn	0.67	21.7	C	122/292	0.67	20.2	C	107/272	0.59	21.6	C	131/336
Main Street EB through	0.93	40.7	D	386/788	0.93	37.9	D	382/739	0.80	30.8	C	353/803
Main Street EB right-turn	0.07	30.9	C	4/34	0.08	31.0	C	3/32	0.02	26.3	C	0/0
Main Street WB left-turn	0.60	45.4	D	116/263	0.69	49.1	D	135/315	0.86	70.9	E	141/330
Main Street WB through/right-turn	1.08	109.9	F	377/797	1.10	116.7	F	381/800	1.27	186.0	F	433/751
Overall Intersection	1.17	138.4	F	--/--	1.22	164.6	F	--/--	1.26	172.8	F	--/--
Saturday Midday:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn/through	1.71	367.0	F	651/767	1.06	443.9	F	714/858	2.59	376.1	F	725/880
South Broadway NB right-turn	0.19	41.0	D	8/139	0.24	63.0	E	63/124	0.21	3.6	A	1/29
North Broadway SB approach	2.05	524.2	F	731/780	2.20	594.5	F	807/852	1.93	460.3	F	776/820
Main Street EB left-turn	0.62	40.5	D	194/484	0.63	40.5	D	199/492	0.67	45.1	D	201/408
Main Street EB through	0.66	42.3	D	221/540	0.66	42.3	D	222/542	0.74	49.0	D	234/466
Main Street EB right-turn	0.11	33.3	C	0/30	0.11	33.3	C	0/33	0.02	35.1	D	0/0
Main Street WB left-turn	0.94	82.3	F	219/454	1.05	111.9	F	251/511	0.97	88.7	F	251/449
Main Street WB through/right-turn	1.92	475.2	F	677/1001	1.98	500.8	F	692/1004	1.92	475.3	F	732/956
Overall Intersection	1.49	323.6	F	--/--	1.57	371.3	F	--/--	1.62	316.0	F	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate South Broadway corridor.

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
7. Main Street Geremonty Drive												
Weekday AM: ^f	Cycle Length = 130 seconds				Cycle Length = 130 seconds				Cycle Length = 130 seconds			
Main Street EB left-turn	0.08	25.7	C	8/27	0.08	25.9	C	8/27	0.09	30.3	C	9/28
Main Street EB through/right-turn	0.89	52.6	D	267/475	0.92	58.2	E	285/499	1.03	91.9	F	321/520
Main Street WB left-turn	0.69	24.4	C	74/158	0.70	25.6	C	74/159	0.91	62.0	E	101/273
Main Street WB through/right-turn	0.58	19.9	B	203/386	0.59	20.1	C	210/398	0.66	27.1	C	259/457
Geremonty Drive NB left-turn	0.77	46.2	D	90/135	0.78	46.7	D	91/135	0.82	50.1	D	86/122
Geremonty Drive NB through/right-turn	0.57	34.6	C	138/186	0.57	34.9	C	140/186	0.47	29.6	C	130/165
Geremonty Drive SB approach	1.62	344.8	F	361/470	1.62	384.0	F	366/470	0.99	89.3	F	268/331
Overall Intersection	0.91	92.5	F	--/--	0.93	93.9	F	--/--	0.91	59.3	E	--/--
Weekday PM:	Cycle Length = 130 seconds				Cycle Length = 130 seconds				Cycle Length = 130 seconds			
Main Street EB left-turn	0.12	22.1	C	15/52	0.12	22.2	C	15/53	0.10	15.8	B	13/44
Main Street EB through/right-turn	1.21	141.7	F	536/1066	1.25	157.2	F	568/1109	0.92	42.9	D	450/958
Main Street WB left-turn	0.56	23.9	C	35/101	0.56	23.9	C	35/101	0.79	48.9	D	33/143
Main Street WB through/right-turn	0.49	17.6	B	160/351	0.52	18.1	B	173/380	0.46	14.9	B	164/363
Geremonty Drive NB left-turn	0.52	27.7	C	81/190	0.52	27.7	C	81/190	0.70	47.8	D	101/249
Geremonty Drive NB through/right-turn	0.81	40.6	D	233/573	0.81	40.6	D	233/573	0.96	73.1	E	293/640
Geremonty Drive SB approach	0.45	39.8	D	70/144	0.45	39.8	D	70/144	0.57	44.7	D	78/151
Overall Intersection	1.03	68.8	E	--/--	1.05	74.5	E	--/--	0.97	44.0	D	--/--
Saturday Midday:	Cycle Length = 130 seconds				Cycle Length = 130 seconds				Cycle Length = 130 seconds			
Main Street EB left-turn	0.10	21.3	C	12/37	0.11	21.4	C	12/38	0.08	14.3	B	10/30
Main Street EB through/right-turn	1.16	119.5	F	500/803	1.22	144.3	F	550/862	0.88	35.0	C	407/629
Main Street WB left-turn	0.56	23.3	C	34/101	0.56	23.3	C	34/101	0.63	26.4	C	30/108
Main Street WB through/right-turn	0.55	18.1	B	188/412	0.59	18.9	B	208/453	0.51	14.1	B	181/410
Geremonty Drive NB left-turn	0.56	29.2	C	75/178	0.56	29.2	C	75/178	0.84	64.9	E	98/281
Geremonty Drive NB through/right-turn	0.43	27.9	C	101/240	0.43	27.9	C	101/240	0.54	37.6	D	134/273
Geremonty Drive SB approach	0.84	63.5	E	116/230	0.84	63.5	E	116/230	0.94	92.2	F	135/247
Overall Intersection	0.92	61.6	E	--/--	0.96	71.2	E	--/--	0.88	37.3	D	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Optimize splits and replace LEFT TURN YIELD ON GREEN BALL sign (R10-12) on northbound approach.
^f Optimized timings as presented in TIAS² were re-evaluated in order to achieve overall intersection improvements.

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
9. South Broadway at Post Office Driveway and Proposed Site Driveway												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
South Broadway NB left-turn	0.57	50.3	D	24/62	0.54	48.5	D	22/60	0.54	51.3	D	19/58
South Broadway NB through	0.24	11.7	B	83/126	0.25	12.8	B	81/123	0.25	10.7	B	72/177
South Broadway NB right-turn	0.04	7.5	A	0/3	0.04	8.4	A	0/2	0.04	8.9	A	0/3
South Broadway SB left-turn	0.47	50.8	D	28/31	0.47	52.3	D	28/29	0.47	50.4	D	28/28
South Broadway SB through/right-turn	0.40	10.0	B	83/295	0.43	11.5	B	90/301	0.39	2.5	A	15/97
Site Driveway EB left-turn	0.10	46.2	D	4/18	0.59	52.5	D	32/80	0.50	45.6	D	31/69
Site Driveway EB through/right-turn	0.11	46.3	D	4/18	0.22	44.7	D	13/38	0.67	56.6	E	49/98
Site Driveway EB right-turn	0.10	46.2	D	4/17	0.22	44.7	D	13/38	0.65	54.7	D	48/96
Post Office Driveway WB left-turn/through	0.60	54.0	D	29/54	0.43	44.8	D	28/54	0.40	43.5	D	28/53
Post Office Driveway WB right-turn	0.02	39.6	D	0/5	0.02	37.6	D	0/5	0.02	36.6	D	0/5
Overall Intersection	0.41	15.3	B	--/--	0.43	17.4	B	--/--	0.41	15.6	B	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	0.45	71.0	E	23/47	0.64	77.8	E	84/183	0.65	61.8	E	79/140
South Broadway NB through	0.46	8.6	A	56/331	0.52	13.2	B	218/313	0.50	18.8	B	169/197
South Broadway NB right-turn	0.07	4.8	A	0/17	0.07	6.8	A	0/15	0.07	33.9	C	7/19
South Broadway SB left-turn	0.60	62.8	E	66/73	0.59	69.2	E	65/65	0.60	60.8	E	56/65
South Broadway SB through/right-turn	0.32	10.0	A	75/280	0.49	18.2	B	105/308	0.41	9.0	A	88/143
Site Driveway EB left-turn	0.20	50.6	D	17/42	0.74	56.8	E	123/281	0.78	62.5	E	124/272
Site Driveway EB through/right-turn	0.15	50.2	D	14/40	0.15	41.1	D	27/66	0.35	43.8	D	64/126
Site Driveway EB right-turn	0.15	50.2	D	14/40	0.15	41.1	D	27/66	0.35	43.8	D	63/125
Post Office Driveway WB left-turn/through	0.67	61.0	E	73/127	0.37	42.0	D	64/127	0.40	43.2	D	65/127
Post Office Driveway WB right-turn	0.07	40.5	D	0/46	0.07	32.3	C	0/46	0.07	33.3	C	0/47
Overall Intersection	0.49	17.3	B	--/--	0.57	25.2	C	--/--	0.57	26.6	C	--/--
Saturday Middy:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	0.63	60.0	E	63/150	1.16	188.9	F	121/250	0.68	58.1	E	97/227
South Broadway NB through	0.58	18.6	B	242/486	0.81	38.7	D	366/455	0.80	37.6	D	347/476
South Broadway NB right-turn	0.09	12.6	B	1/42	0.09	24.1	C	0/40	0.09	23.7	C	0/42
South Broadway SB left-turn	0.63	63.6	E	72/72	0.64	68.5	E	62/62	0.62	62.9	E	60/60
South Broadway SB through/right-turn	0.57	15.1	B	143/339	0.92	35.9	D	518/518	0.91	14.7	B	237/237
Site Driveway EB left-turn	0.38	49.1	D	32/71	0.65	39.6	D	144/404	0.67	41.1	D	153/358
Site Driveway EB through/right-turn	0.23	47.6	D	30/68	0.14	30.4	C	33/91	0.29	32.7	C	78/161
Site Driveway EB right-turn	0.23	47.6	D	30/67	0.14	30.4	C	33/91	0.30	32.7	C	78/161
Post Office Driveway WB left-turn/through	0.80	69.9	E	109/206	0.35	31.7	C	80/209	0.38	32.7	C	86/175
Post Office Driveway WB right-turn	0.06	37.3	D	0/44	0.07	22.6	C	0/44	0.07	23.0	C	0/42
Overall Intersection	0.61	24.1	C	--/--	0.80	42.8	D	--/--	0.76	30.0	C	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate South Broadway corridor.

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
10. South Broadway at Rockingham Park Blvd and Veterans Memorial Pkwy												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
South Broadway NB left-turn	0.52	38.8	D	71/105	0.52	38.8	D	71/105	0.52	42.9	D	71/105
South Broadway NB through	0.19	27.8	C	47/73	0.19	27.9	C	47/72	0.19	29.6	C	39/80
South Broadway NB right-turn	0.10	44.1	D	0/57	0.10	44.1	D	0/58	0.10	62.6	E	0/71
South Broadway SB left-turn	0.34	53.3	D	32/54	0.36	50.3	D	27/57	0.36	55.1	E	34/51
South Broadway SB through/right-turn	1.08	39.4	D	101/189	1.07	40.5	D	105/190	1.07	25.3	C	91/212
Rockingham Park Blvd EB left-turn	0.50	40.1	D	52/75	0.47	38.4	D	35/55	0.47	40.7	D	41/64
Rockingham Park Blvd EB through	0.20	22.0	C	53/85	0.21	28.2	C	56/112	0.21	28.6	C	64/101
Rockingham Park Blvd EB right-turn	0.17	14.3	B	43/65	0.17	12.0	B	42/64	0.17	13.5	B	42/64
Veterans Memorial Pkwy WB left-turn	0.44	43.9	D	41/64	0.44	43.9	D	41/64	0.44	43.9	D	41/64
Veterans Memorial Pkwy WB through	0.78	34.6	C	262/319	0.77	33.9	C	260/316	0.77	33.9	C	260/316
Veterans Memorial Pkwy WB right-turn	0.20	20.1	C	54/88	0.20	19.8	B	55/89	0.20	19.8	B	55/89
Overall Intersection	0.69	34.6	C	--/--	0.68	34.8	C	--/--	0.68	31.7	C	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	0.62	40.6	D	168/298	0.62	40.5	D	169/302	0.62	35.3	D	207/259
South Broadway NB through	0.36	19.7	B	127/127	0.38	20.0	C	132/132	0.38	18.7	B	162/162
South Broadway NB right-turn	0.17	11.7	B	0/26	0.17	12.7	B	0/29	0.17	8.7	A	29/29
South Broadway SB left-turn	0.46	62.0	E	52/79	0.48	61.3	E	56/81	0.48	63.9	E	57/90
South Broadway SB through/right-turn	0.89	48.9	D	162/267	0.89	49.8	D	168/267	0.89	50.0	D	189/276
Rockingham Park Blvd EB left-turn	0.77	46.3	D	179/228	0.77	43.6	D	156/195	0.77	43.5	D	129/171
Rockingham Park Blvd EB through	0.76	56.0	E	217/261	0.77	53.7	D	211/276	0.77	46.5	D	207/262
Rockingham Park Blvd EB right-turn	0.46	18.5	B	178/235	0.46	16.1	B	181/238	0.46	17.7	B	200/257
Veterans Memorial Pkwy WB left-turn	0.72	56.8	E	115/163	0.72	56.8	E	115/163	0.72	56.8	E	115/163
Veterans Memorial Pkwy WB through	0.75	55.5	E	145/192	0.75	55.5	E	146/194	0.75	55.5	E	146/194
Veterans Memorial Pkwy WB right-turn	0.31	40.0	D	81/128	0.34	40.0	D	91/140	0.34	40.0	D	91/140
Overall Intersection	0.76	38.7	D	--/--	0.76	38.1	D	--/--	0.76	36.7	D	--/--
Saturday Midday:	Cycle Length = 140 seconds				Cycle Length = 140 seconds				Cycle Length = 140 seconds			
South Broadway NB left-turn	1.16	121.4	F	755/923	1.14	115.4	F	746/927	1.14	115.3	F	746/939
South Broadway NB through	0.37	26.1	C	202/225	0.37	25.1	C	205/221	0.37	28.9	C	209/273
South Broadway NB right-turn	0.22	41.7	D	53/93	0.22	40.0	D	57/91	0.22	55.8	E	57/145
South Broadway SB left-turn	0.64	64.6	E	100/140	0.65	64.5	E	104/145	0.65	64.5	E	104/145
South Broadway SB through/right-turn	1.24	175.9	F	450/547	1.22	164.9	F	436/533	1.22	164.9	F	436/533
Rockingham Park Blvd EB left-turn	0.79	54.2	D	197/243	0.77	49.8	D	162/211	0.77	53.5	D	180/222
Rockingham Park Blvd EB through	0.55	51.7	D	157/199	0.57	57.1	E	175/216	0.57	54.5	D	166/221
Rockingham Park Blvd EB right-turn	1.02	67.5	E	955/1109	1.02	63.7	E	948/1111	1.02	62.3	E	935/1094
Veterans Memorial Pkwy WB left-turn	1.12	137.4	F	302/419	1.12	137.4	F	302/419	1.12	137.4	F	302/419
Veterans Memorial Pkwy WB through	0.86	68.5	E	244/315	0.86	67.9	E	245/318	0.86	67.9	E	245/318
Veterans Memorial Pkwy WB right-turn	0.49	44.0	D	177/252	0.51	43.8	D	189/267	0.51	43.8	D	189/267
Overall Intersection	1.17	91.0	F	--/--	1.16	86.9	F	--/--	1.16	87.8	F	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate South Broadway/Rockingham Park Boulevard corridors.

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
11. South Broadway at Kelly Road/Retail Driveway												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
South Broadway NB left-turn	0.49	43.4	D	64/106	0.49	43.3	D	64/107	0.50	43.4	D	64/107
South Broadway NB through/right-turn	0.21	4.7	A	31/88	0.21	4.7	A	30/89	0.21	4.7	A	31/89
South Broadway SB left-turn	0.05	55.7	E	0/2	0.05	55.7	E	0/2	0.05	62.2	E	0/3
South Broadway SB through/right-turn	0.25	12.3	B	106/176	0.26	12.5	B	108/190	0.26	4.2	A	35/52
Kelly Road EB left-turn	0.29	44.2	D	25/48	0.29	44.2	D	25/47	0.28/	44.1	D	25/47
Kelly Road EB left-turn/through	0.28	44.2	D	25/48	0.28	44.2	D	25/47	0.28	44.1	D	25/47
Kelly Road EB right-turn	0.13	43.0	D	0/19	0.13	43.0	D	0/21	0.13	42.9	D	0/21
Shared Retail Driveway WB approach	0.00	0.0	A	0/0	0.00	0.0	A	0/0	0.00	0.0	A	0/0
Overall Intersection	0.31	18.0	B	--/--	0.32	18.1	B	--/--	0.32	15.0	B	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	0.66	54.3	D	139/206	0.66	54.1	D	140/207	0.68	55.2	E	140/212
South Broadway NB through/right-turn	0.53	12.3	B	201/418	0.54	12.5	B	206/430	0.53	12.3	B	206/411
South Broadway SB left-turn	0.41	63.2	E	16/27	0.41	61.2	E	15/25	0.44	57.4	E	0/27
South Broadway SB through/right-turn	0.61	22.4	C	264/491	0.62	22.3	C	270/503	0.62	18.7	B	234/439
Kelly Road EB left-turn	0.45	54.2	D	52/96	0.45	54.2	D	52/96	0.45	54.2	D	52/96
Kelly Road EB left-turn/through	0.44	54.1	D	52/96	0.44	54.1	D	52/96	0.44	54.1	D	52/96
Kelly Road EB right-turn	0.15	51.2	D	0/76	0.15	51.2	D	0/76	0.15	51.2	D	0/76
Shared Retail Driveway WB approach	0.20	57.1	E	10/32	0.20	57.1	E	10/32	0.21	57.3	E	10/32
Overall Intersection	0.58	24.7	C	--/--	0.59	24.6	C	--/--	0.59	23.2	C	--/--
Saturday Midday:	Cycle Length = 140 seconds				Cycle Length = 140 seconds				Cycle Length = 140 seconds			
South Broadway NB left-turn	0.67	64.6	E	154/224	0.68	64.6	E	161/232	0.76	73.1	E	161/261
South Broadway NB through/right-turn	0.67	17.0	B	350/701	0.72	18.5	B	402/805	0.70	15.8	B	402/630
South Broadway SB left-turn	0.39	72.1	E	14/14	0.39	72.9	E	14/14	0.64	79.5	E	14/14
South Broadway SB through/right-turn	0.89	27.4	C	680/748	0.97	32.0	C	791/885	0.91	23.6	C	735/735
Kelly Road EB left-turn	0.59	64.8	E	98/151	0.60	64.9	E	101/154	0.66	70.6	E	101/162
Kelly Road EB left-turn/through	0.58	64.0	E	96/148	0.59	64.7	E	100/153	0.65	69.8	E	100/161
Kelly Road EB right-turn	0.17	57.5	E	0/66	0.18	57.5	E	0/68	0.46	62.0	E	41/126
Shared Retail Driveway WB approach	0.36	66.4	E	28/66	0.36	66.4	E	28/66	0.44	69.1	E	29/71
Overall Intersection	0.79	29.9	C	--/--	0.84	32.1	C	--/--	0.83	28.5	C	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation –Coordinate Rockingham Park Boulevard corridor and add pedestrian equipment for NH 28 crosswalk.

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
12. Rockingham Park Blvd at Racetrack Driveway												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
Rockingham Park Blvd EB left-turn	0.11	50.8	D	1/8	0.62	42.9	D	89/140	0.46	42.5	D	46/72
Rockingham Park Blvd EB through	0.15	1.3	A	0/28	0.16	2.3	A	26/40	0.15	2.0	A	23/31
Rockingham Park Blvd WB through	0.42	4.0	A	0/138	0.53	11.0	B	179/383	0.49	5.8	A	103/220
Rockingham Park Blvd WB right-turn	0.01	0.0	A	0/0	0.03	0.0	A	0/0	0.03	0.0	A	0/0
Racetrack Driveway SB left-turn	0.29	49.1	D	7/17	0.18	43.0	D	13/25	0.23	44.7	D	13/26
Racetrack Driveway SB right-turn	0.00	40.6	D	0/2	0.22	28.5	C	22/34	0.19	32.3	C	14/30
Overall Intersection	0.42	3.8	A	--/--	0.53	11.7	B	--/--	0.47	8.5	A	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
Rockingham Park Blvd EB left-turn	0.38	55.0	E	28/63	0.69	42.3	D	223/311	0.68	56.8	E	125/175
Rockingham Park Blvd EB through	0.40	1.7	A	63/80	0.42	3.5	A	97/131	0.41	3.3	A	97/110
Rockingham Park Blvd WB through	0.32	3.1	A	45/56	0.48	13.1	B	144/167	0.38	7.2	A	136/136
Rockingham Park Blvd WB right-turn	0.03	0.0	A	0/0	0.05	0.0	A	0/0	0.05	0.0	A	0/0
Racetrack Driveway SB left-turn	0.30	55.7	E	20/33	0.26	48.5	D	39/52	0.28	49.2	D	39/54
Racetrack Driveway SB right-turn	0.01	43.1	D	0/11	0.29	22.9	C	94/94	0.39	33.9	C	105/107
Overall Intersection	0.41	4.3	A	--/--	0.53	13.0	B	--/--	0.48	13.4	B	--/--
Saturday Midday:	Cycle Length = 70 seconds				Cycle Length = 70 seconds				Cycle Length = 140 seconds			
Rockingham Park Blvd EB left-turn	0.43	35.3	D	35/70	1.43	244.8	F	499/768	0.77	65.6	E	217/262
Rockingham Park Blvd EB through	0.60	2.4	A	90/98	0.67	4.1	A	125/190	0.53	2.4	A	111/121
Rockingham Park Blvd WB through	0.71	16.0	B	485/499	1.00	38.1	D	514/515	0.64	6.2	A	183/183
Rockingham Park Blvd WB right-turn	0.03	0.0	A	0/0	0.07	0.0	A	0/0	0.07	0.0	A	0/0
Racetrack Driveway SB left-turn	0.13	31.4	C	5/15	0.17	25.5	C	18/34	0.38	62.8	E	43/68
Racetrack Driveway SB right-turn	0.04	20.3	C	3/11	0.37	13.7	B	71/98	0.54	42.4	D	192/214
Overall Intersection	0.69	9.3	A	--/--	0.99	38.6	D	--/--	0.67	13.6	B	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate Rockingham Park Boulevard corridor and construct a second EB left-turn lane.

Table 3 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
13. Rockingham Park Blvd at Mall Road												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
Rockingham Park Blvd EB left-turn	0.06	43.7	D	5/19	0.07	43.7	D	5/21	0.07	43.3	D	5/20
Rockingham Park Blvd EB through	0.16	2.8	A	27/41	0.20	4.1	A	43/64	0.19	2.6	A	32/39
Rockingham Park Blvd WB through	0.71	10.0	B	168/548	0.78	10.2	B	492/492	0.51	2.2	A	18/25
Rockingham Park Blvd WB right-turn	0.06	0.1	A	0/0	0.06	0.1	A	0/0	0.06	0.1	A	0/0
Mall Road SB left-turn	0.11	41.3	D	10/23	0.08	37.6	D	10/22	0.12	42.2	D	11/24
Mall Road SB right-turn	0.22	31.6	C	39/60	0.37	30.0	C	75/99	0.38	33.4	C	62/92
Overall Intersection	0.63	9.6	A	--/--	0.70	10.6	B	--/--	0.51	5.8	A	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
Rockingham Park Blvd EB left-turn	0.50	53.8	D	64/112	0.48	53.0	D	64/112	0.43	51.2	D	64/107
Rockingham Park Blvd EB through	0.39	8.4	A	150/206	0.48	11.7	B	225/261	0.44	8.2	A	173/201
Rockingham Park Blvd WB through	0.52	9.4	A	106/256	0.70	15.5	B	157/177	0.44	9.7	A	88/206
Rockingham Park Blvd WB right-turn	0.21	0.3	A	0/0	0.21	0.3	A	0/0	0.21	0.3	A	0/0
Mall Road SB left-turn	0.46	41.4	D	120/144	0.38	36.7	D	110/141	0.49	43.1	D	123/157
Mall Road SB right-turn	0.53	30.9	C	181/188	0.62	29.1	C	239/256	0.70	34.8	C	267/269
Overall Intersection	0.55	15.5	B	--/--	0.71	17.7	B	--/--	0.58	16.2	B	--/--
Saturday Midday:	Cycle Length = 140 seconds				Cycle Length = 140 seconds				Cycle Length = 140 seconds			
Rockingham Park Blvd EB left-turn	0.68	65.2	E	146/213	0.66	62.8	E	147/213	0.67	63.6	E	147/216
Rockingham Park Blvd EB through	0.54	12.7	B	298/380	0.68	19.2	B	461/513	0.62	13.3	B	367/408
Rockingham Park Blvd WB through	0.89	29.9	C	458/971	1.21	137.1	F	1071/1192	0.73	16.6	B	350/352
Rockingham Park Blvd WB right-turn	0.36	0.5	A	0/0	0.36	0.3	A	0/0	0.36	0.5	A	0/0
Mall Road SB left-turn	0.72	51.4	D	271/320	0.60	42.6	D	248/312	0.76	54.0	D	376/346
Mall Road SB right-turn	0.55	30.8	C	255/267	0.65	28.2	C	338/372	0.76	37.4	D	387/442
Overall Intersection	0.81	24.6	C	--/--	0.97	56.9	E	--/--	0.78	21.9	C	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate Rockingham Park Boulevard corridor and construct a third WB through lane.

Table 3 (continued)

INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
14. Mall Road at Rockingham Park Blvd Flyover and Mall Driveway												
Weekday AM:	Cycle Length = 84 seconds				Cycle Length = 84 seconds				Cycle Length = 84 seconds			
Mall Road NB left-turn	0.23	16.1	B	5/24	0.26	19.0	B	6/27	0.27	19.1	B	6/27
Mall Road NB through	0.24	16.0	B	5/20	0.27	18.9	B	6/23	0.28	18.9	B	6/23
Mall Road SB through/right-turn	0.32	14.4	B	12/34	0.40	14.6	B	24/58	0.40	14.5	B	24/58
Mall Driveway EB left-turn	0.00	0.00	A	0/0	0.00	0.0	A	0/0	0.00	0.0	A	0/0
Mall Driveway EB right-turn	0.01	10.1	B	0/0	0.01	12.7	B	0/0	0.01	12.7	B	0/0
Flyover WB left-turn/through	0.14	14.7	B	4/13	0.11	16.0	B	5/14	0.11	15.9	B	5/14
Flyover WB right-turn	0.08	6.5	A	0/8	0.15	6.0	A	0/5	0.15	5.9	A	0/5
Overall Intersection	0.23	12.4	B	--/--	0.31	12.2	B	--/--	0.31	12.2	B	--/--
Weekday PM:	Cycle Length = 84 seconds				Cycle Length = 84 seconds				Cycle Length = 84 seconds			
Mall Road NB left-turn	0.69	25.9	C	98/251	0.73	30.8	C	113/282	0.63	24.8	C	114/203
Mall Road NB through	0.16	19.4	B	21/51	0.17	21.7	C	24/56	0.15	19.9	B	24/47
Mall Road SB through/right-turn	0.50	25.0	C	50/95	0.58	25.7	C	83/144	0.58	26.0	C	87/145
Mall Driveway EB left-turn	0.05	26.1	C	3/16	0.06	28.6	C	4/17	0.07	30.1	C	4/18
Mall Driveway EB right-turn	0.21	11.5	B	0/23	0.21	13.6	B	0/25	0.21	12.9	B	0/22
Flyover WB left-turn/through	0.48	25.4	C	44/87	0.47	27.3	C	49/93	0.53	29.1	C	52/100
Flyover WB right-turn	0.10	12.5	B	0/34	0.19	12.3	B	0/42	0.19	13.2	B	0/48
Overall Intersection	0.54	18.8	B	--/--	0.57	20.5	C	--/--	0.56	19.8	B	--/--
Saturday Middy:	Cycle Length = 84 seconds				Cycle Length = 84 seconds				Cycle Length = 84 seconds			
Mall Road NB left-turn	1.14	118.0	F	247/475	1.22	153.0	F	277/475	0.90	47.5	D	222/391
Mall Road NB through	0.39	25.3	C	64/113	0.42	28.0	C	70/113	0.31	24.0	C	66/100
Mall Road SB through/right-turn	0.64	29.6	C	97/150	0.79	34.0	C	159/248	0.82	37.0	D	170/248
Mall Driveway EB left-turn	0.14	31.5	C	10/33	0.14	33.6	C	11/33	0.21	37.4	D	12/36
Mall Driveway EB right-turn	0.29	15.9	B	0/38	0.31	18.2	B	6/45	0.34	17.1	B	18/57
Flyover WB left-turn/through	0.76	33.6	C	117/207	0.78	36.9	D	128/207	0.90	50.9	D	140/232
Flyover WB right-turn	0.16	12.1	B	0/38	0.36	12.9	B	29/94	0.42	15.5	B	60/141
Overall Intersection	0.80	37.9	D	--/--	0.87	42.5	D	--/--	0.85	30.9	C	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

^e Mitigation – Optimize splits.

Table 3 (continued)

INTERSECTION CAPACITY ANALYSIS SUMMARY – 2019 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2019 No-Build (TIAS)				2019 Build				2019 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
15. Mall Road at Mall Driveway												
Weekday AM:	Unsignalized				Unsignalized				Unsignalized			
Mall Road NB left-turn	0.00	7.8	A	0/1	0.01	7.8	A	--/1	0.01	7.8	A	--/1
Mall Road NB through/right-turn	0.01	0.0	A	0/0	0.15	0.0	A	--/0	0.15	0.0	A	--/0
Mall Road SB left-turn	--	--	--	--/--	0.01	1.0	A	--/1	0.01	7.8	A	--/1
Mall Road SB through/right-turn	0.01	0.0	A	0/0	0.01	1.0	A	--/1	0.07	0.0	A	--/0
Mall Driveway EB left-turn/through	0.09	0.0	A	0/0	0.00	0.0	A	--/0	0.00	0.0	A	--/0
Mall Driveway EB right-turn	0.08	10.1	B	0/0	0.01	10.1	B	--/0	0.01	10.1	B	--/0
Site Driveway WB left-turn	--	--	--	--/--	--	--	--	--/--	0.20	12.9	B	--/19
Site Driveway WB through/right-turn	--	--	--	--/--	0.21	12.8	B	--/20	0.01	9.3	A	--/1
Weekday PM:	Unsignalized				Unsignalized				Unsignalized			
Mall Road NB left-turn	0.02	7.5	A	--/1	0.02	7.5	A	--/1	0.02	7.5	A	--/1
Mall Road NB through/right-turn	0.11	0.0	A	--/0	0.21	0.0	A	--/0	0.21	0.0	A	--/0
Mall Road SB left-turn	--	--	--	--/--	0.04	2.7	A	--/3	0.04	8.1	A	--/3
Mall Road SB through/right-turn	0.07	0.0	A	--/0	0.04	2.7	A	--/3	0.07	0.0	A	--/0
Mall Driveway EB left-turn/through	0.00	10.7	B	--/0	0.00	12.1	B	--/0	0.00	12.1	B	--/0
Mall Driveway EB right-turn	0.06	9.1	A	--/5	0.06	9.1	A	--/5	0.06	9.1	A	--/5
Site Driveway WB left-turn	--	--	--	--/--	--	--	--	--/--	0.38	19.0	C	--/44
Site Driveway WB through/right-turn	--	--	--	--/--	0.42	18.7	C	--/52	0.04	9.5	A	--/3
Saturday Middy:	Unsignalized				Unsignalized				Unsignalized			
Mall Road NB left-turn	0.04	7.6	A	--/3	0.04	7.6	A	--/3	0.04	7.6	A	--/3
Mall Road NB through/right-turn	0.17	0.0	A	--/0	0.35	0.0	A	--/0	0.35	0.0	A	--/0
Mall Road SB left-turn	--	--	--	--/--	0.05	2.3	A	--/4	0.05	9.0	A	--/4
Mall Road SB through/right-turn	0.10	0.0	A	--/0	0.05	2.3	A	--/4	0.10	0.0	A	--/0
Mall Driveway EB left-turn/through	0.01	12.8	B	--/1	0.02	15.7	C	--/1	0.02	15.7	C	--/1
Mall Driveway EB right-turn	0.08	9.5	A	--/7	0.08	9.5	A	--/7	0.08	9.5	A	--/7
Site Driveway WB left-turn	--	--	--	--/--	--	--	--	--/--	1.02	110.3	F	--/246
Site Driveway WB through/right-turn	--	--	--	--/--	1.10	125.5	F	--/302	0.07	10.6	B	--/6

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

^e Mitigation – Add a second lane on westbound site driveway approach and restripe the southbound approach to include a left-turn lane into the site.

Table 4
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
3. Main Street at N. Policy Street/S. Policy Street												
Weekday AM:	Cycle Length = 123 seconds				Cycle Length = 123 seconds				Cycle Length = 123 seconds			
Pelham Road EB left-turn	0.79	40.3	D	376/625	0.79	40.3	D	376/625	0.85	47.8	D	393/649
Pelham Road EB through	0.24	26.9	C	88/136	0.26	27.2	C	96/145	0.27	28.1	C	98/145
Pelham Road EB right-turn	0.09	15.8	B	0/17	0.09	15.8	B	0/17	0.09	16.2	B	0/17
Main Street WB left-turn	0.47	53.2	D	59/111	0.47	53.2	D	59/111	0.47	53.2	D	59/111
Main Street WB through	1.23	182.8	F	171/270	1.32	220.9	F	187/299	1.13	139.2	F	182/274
Main Street WB right-turn	0.06	0.1	A	0/0	0.06	0.1	A	0/0	0.06	0.1	A	0/0
South Policy Street NB left-turn	0.69	58.3	E	117/171	0.69	58.3	E	117/171	0.67	56.6	E	116/171
South Policy Street NB through	0.32	32.6	C	100/157	0.32	32.6	C	100/157	0.31	31.6	C	98/157
South Policy Street NB right-turn	0.05	29.7	C	0/0	0.05	29.7	C	0/0	0.05	28.8	C	0/0
North Policy Street SB left-turn	0.43	62.2	E	13/37	0.43	62.2	E	13/37	0.43	62.2	E	13/37
North Policy Street SB through	0.62	47.2	D	169/247	0.62	47.2	D	169/247	0.60	46.0	D	168/247
North Policy Street SB right-turn	0.15	11.9	B	0/25	0.15	11.9	B	0/25	0.15	13.0	B	0/26
Overall Intersection	0.81	54.1	D	--/--	0.82	61.5	E	--/--	0.82	49.9	D	--/--
Weekday PM::	Cycle Length = 143 seconds				Cycle Length = 143 seconds				Cycle Length = 143 seconds			
Pelham Road EB left-turn	0.72	50.0	D	303/621	0.72	50.0	D	303/621	0.84	64.8	E	321/585
Pelham Road EB through	0.56	42.9	D	245/439	0.59	43.7	D	263/478	0.56	41.2	D	256/355
Pelham Road EB right-turn	0.09	19.9	B	0/29	0.10	20.1	C	0/30	0.10	17.1	B	0/27
Main Street WB left-turn	0.39	61.4	E	58/95	0.39	61.4	E	58/95	0.60	71.6	E	61/100
Main Street WB through	1.23	184.7	F	248/337	1.36	239.0	F	300/390	1.09	128.3	F	276/313
Main Street WB right-turn	0.01	0.0	A	0/0	0.01	0.0	A	0/0	0.01	0.0	A	0/0
South Policy Street NB left-turn	0.86	77.9	E	232/297	0.86	77.9	E	232/297	0.76	62.7	E	223/393
South Policy Street NB through	0.54	43.0	D	230/324	0.54	43.0	D	230/324	0.51	40.9	D	222/346
South Policy Street NB right-turn	0.06	36.4	D	0/1	0.06	36.4	D	0/1	0.06	34.8	C	0/0
North Policy Street SB left-turn	0.67	74.0	E	81/137	0.67	74.0	E	81/137	0.67	74.0	E	81/158
North Policy Street SB through	0.70	58.8	E	222/445	0.70	58.8	E	222/445	0.73	61.3	E	223/432
North Policy Street SB right-turn	0.25	21.6	C	34/101	0.25	21.6	C	34/101	0.25	25.7	C	31/86
Overall Intersection	0.78	65.1	E	--/--	0.80	75.6	E	--/--	0.80	58.3	E	--/--
Saturday Middyay:	Cycle Length = 254 seconds				Cycle Length = 254 seconds				Cycle Length = 254 seconds			
Pelham Road EB left-turn	0.67	55.8	E	135/210	0.68	58.3	E	141/218	0.61	54.2	D	141/266
Pelham Road EB through	0.74	49.7	D	210/270	0.77	50.4	D	250/313	0.67	45.0	D	242/383
Pelham Road EB right-turn	0.09	21.3	C	7/21	0.10	20.8	C	9/24	0.09	21.0	C	8/29
Main Street WB left-turn	0.31	50.4	D	47/93	0.32	52.6	D	49/96	0.31	53.5	D	49/117
Main Street WB through	0.69	51.4	D	163/223	0.72	52.1	D	196/263	0.65	49.3	D	194/326
Main Street WB right-turn	0.01	0.0	A	0/0	0.01	0.0	A	0/0	0.01	0.0	A	0/0
South Policy Street NB left-turn	0.56	44.4	D	144/225	0.57	46.4	D	151/233	0.66	54.1	D	159/290
South Policy Street NB through	0.25	21.3	C	106/178	0.26	22.9	C	114/187	0.27	25.8	C	122/208
South Policy Street NB right-turn	0.03	19.1	B	0/0	0.03	20.6	C	0/0	0.03	23.2	C	0/0
North Policy Street SB left-turn	0.33	59.8	E	14/44	0.35	62.3	E	15/46	0.44	65.8	E	15/55
North Policy Street SB through	0.61	41.4	D	210/362	0.64	44.3	D	223/395	0.64	45.9	D	228/439
North Policy Street SB right-turn	0.11	21.9	C	23/53	0.11	23.5	C	25/56	0.11	22.9	C	25/64
Overall Intersection	0.69	41.9	D	--/--	0.71	43.8	D	--/--	0.70	42.7	D	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Optimize splits.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
4. Main St at Pleasant St/Tuscan Market Dwy												
Weekday AM:	Cycle Length = 195 seconds				Cycle Length = 195 seconds				Cycle Length = 100 seconds			
Main Street EB left-turn	0.40	72.1	E	21/54	0.40	73.3	E	21/54	0.66	72.4	E	9/28
Main Street EB through/right-turn	0.49	17.8	B	248/434	0.52	19.5	B	283/468	0.57	13.7	B	147/232
Main Street WB left-turn	0.68	71.1	E	109/186	0.69	72.2	E	115/192	0.63	36.9	D	50/112
Main Street WB through/right-turn	0.46	12.1	B	234/410	0.47	12.9	B	254/416	0.49	8.4	A	74/245
Pleasant Street NB left-turn	0.28	64.9	E	28/58	0.49	66.9	E	60/101	0.54	36.9	D	26/56
Pleasant Street NB through/right-turn	0.28	65.1	E	11/65	0.28	64.3	E	13/66	0.26	32.0	C	6/50
Tuscan Market Driveway SB left-turn	0.08	64.5	E	6/23	0.12	65.8	E	9/29	0.12	31.2	C	4/16
Tuscan Market Driveway SB through/right-turn	0.38	67.8	E	29/75	0.39	68.9	E	30/75	0.19	31.4	C	10/38
Overall Intersection	0.50	31.1	C	--/--	0.54	32.7	C	--/--	0.61	18.9	B	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
Main Street EB left-turn	0.32	55.2	E	27/61	0.32	55.2	E	27/61	0.36	56.5	E	27/64
Main Street EB through/right-turn	1.13	115.6	F	567/1136	1.23	156.8	F	683/1197	0.97	56.5	E	529/945
Main Street WB left-turn	0.68	40.1	D	112/137	0.67	39.0	D	118/128	0.67	45.4	D	142/141
Main Street WB through/right-turn	0.57	11.7	B	193/306	0.62	12.1	B	251/317	0.52	7.6	A	138/325
Pleasant Street NB left-turn	0.37	54.6	D	35/74	0.48	55.7	E	47/95	0.48	53.2	D	46/130
Pleasant Street NB through/right-turn	0.36	54.7	D	16/137	0.35	54.2	D	15/137	0.30	50.6	D	15/151
Tuscan Market Driveway SB left-turn	0.11	52.1	D	11/28	0.21	52.9	D	21/43	0.46	55.7	E	20/64
Tuscan Market Driveway SB through/right-turn	0.46	55.8	E	40/76	0.46	55.8	E	40/76	0.34	50.8	D	39/80
Overall Intersection	0.80	64.9	E	--/--	0.85	79.8	E	--/--	0.77	40.9	D	--/--
Saturday Middy:	Cycle Length = 195 seconds				Cycle Length = 195 seconds				Cycle Length = 120 seconds			
Main Street EB left-turn	0.47	57.6	E	23/69	0.38	59.2	E	26/75	0.53	50.9	D	19/49
Main Street EB through/right-turn	0.83	39.0	D	352/577	0.84	39.6	D	438/679	0.73	21.2	C	281/423
Main Street WB left-turn	0.65	43.6	D	147/361	0.74	54.0	D	184/437	0.74	42.0	D	134/237
Main Street WB through/right-turn	0.51	15.0	B	217/398	0.54	16.1	B	256/433	0.47	7.8	A	151/228
Pleasant Street NB left-turn	0.09	48.5	D	8/31	0.31	54.5	D	33/83	0.40	40.9	D	24/59
Pleasant Street NB through/right-turn	0.28	50.3	D	6/104	0.27	54.2	D	7/110	0.26	39.0	D	5/109
Tuscan Market Driveway SB left-turn	0.20	48.4	D	19/60	0.24	54.0	D	26/71	0.44	42.5	D	19/48
Tuscan Market Driveway SB through/right-turn	0.76	70.0	E	77/229	0.83	87.8	F	90/255	0.65	48.3	D	60/127
Overall Intersection	0.74	37.5	D	--/--	0.78	41.2	D	--/--	0.75	25.9	C	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Provide concurrent phasing for northbound/southbound approaches (Pleasant Street/Tuscan Market Driveway).

Table 4 (continued)

INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
5. Main St at Central St/Tuscan Kitchen Driveway												
Weekday AM:	Unsignalized				Unsignalized				Unsignalized			
Main Street EB left-turn	0.00	9.3	A	--/0	0.00	9.4	A	--/0	0.00	9.4	A	--/0
Main Street EB through/right-turn	0.42	0.0	A	--/0	0.44	0.0	A	--/0	0.44	0.0	A	--/0
Main Street WB left-turn	0.00	9.4	A	--/0	--	--	--	--/--	--	--	--	--/--
Main Street WB through/right-turn	0.41	0.0	A	--/0	0.42	0.0	A	--/0	0.42	0.0	A	--/0
Central Street NB approach	0.13	28.3	D	--/11	0.10	15.0	C	--/8	0.09	13.9	B	--/7
Weekday PM:	Unsignalized				Unsignalized				Unsignalized			
Main Street EB left-turn	0.00	9.3	A	--/0	0.00	9.5	A	--/0	0.00	9.5	A	--/0
Main Street EB through/right-turn	0.59	0.0	A	--/0	0.61	0.0	A	--/0	0.61	0.0	A	--/0
Main Street WB left-turn	0.02	11.8	B	--/2	--	--	--	--/--	--	--	--	--/--
Main Street WB through/right-turn	0.42	0.0	A	--/0	0.45	0.0	A	--/0	0.45	0.0	A	--/0
Central Street NB approach	0.14	25.2	D	--/12	0.15	22.8	C	--/13	0.14	20.7	C	--/12
Saturday Middy:	Unsignalized				Unsignalized				Unsignalized			
Main Street EB left-turn	0.01	9.5	A	--/1	0.01	9.7	A	--/1	0.01	9.7	A	--/1
Main Street EB through/right-turn	0.48	0.0	A	--/0	0.51	0.0	A	--/0	0.51	0.0	A	--/0
Main Street WB left-turn	0.00	10.0	B	--/0	--	--	--	--/--	--	--	--	--/--
Main Street WB through/right-turn	0.45	0.0	A	--/0	0.48	0.0	A	--/0	0.48	0.0	A	--/0
Central Street NB approach	0.11	28.0	D	--/9	0.06	15.4	C	--/5	0.05	14.1	B	--/4

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

^e Mitigation – Provide access to South Broadway via Central Street. Under Build condition, construct Central Street as a right-in/right-out roadway.

Table 4 (continued)

INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
6. South Broadway at Main St. and N. Broadway												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
South Broadway NB left-turn	0.97	123.4	F	49/166	1.06	150.4	F	67/181	1.06	150.1	F	88/184
South Broadway NB through	0.53	46.9	D	113/113	0.56	45.7	D	121/121	0.56	28.6	C	108/108
South Broadway NB right-turn	0.12	12.2	B	21/21	0.13	9.6	A	18/18	0.13	19.6	B	20/20
South Broadway SB left-turn	0.81	79.1	E	62/153	0.81	79.1	E	62/153	0.81	79.1	E	62/153
North Broadway SB through/right-turn	1.16	130.0	F	295/415	1.20	145.7	F	313/435	1.20	145.7	F	313/435
Main Street EB left-turn	0.62	39.5	D	117/163	0.61	38.0	D	121/169	0.61	38.0	D	121/169
Main Street EB through	1.37	232.1	F	272/369	1.46	269.7	F	289/382	1.46	269.7	F	289/382
Main Street EB right-turn	0.17	27.3	C	15/49	0.17	27.8	C	15/49	0.02	26.5	C	0/0
Main Street WB left-turn	0.55	27.5	C	172/270	0.55	27.2	C	176/276	0.55	27.2	C	176/276
Main Street WB through/right-turn	1.14	119.3	F	450/694	1.19	140.6	F	463/703	1.19	140.6	F	463/703
Overall Intersection	1.05	100.0	F	--/--	1.09	112.2	F	--/--	1.09	114.5	F	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	1.76	433.7	F	195/330	2.09	579.1	F	249/391	1.46	283.1	F	214/344
South Broadway NB through	1.04	84.5	F	375/425	1.10	105.6	F	416/473	1.59	311.9	F	525/604
South Broadway NB right-turn	0.24	37.6	D	81/81	0.27	26.4	C	90/90	0.31	51.6	D	128/188
South Broadway SB left-turn	1.01	149.2	F	80/198	1.01	149.2	F	80/198	1.17	208.5	F	93/209
North Broadway SB through/right-turn	0.79	49.8	D	240/310	0.86	54.7	D	268/343	1.54	303.3	F	380/505
Main Street EB left-turn	0.63	23.0	C	132/280	0.63	22.6	C	133/264	0.62	27.1	C	136/341
Main Street EB through	1.44	249.5	F	535/749	1.64	336.5	F	588/705	1.14	119.2	F	461/741
Main Street EB right-turn	0.11	53.6	D	49/64	0.12	56.0	E	50/61	0.02	21.4	C	0/0
Main Street WB left-turn	0.56	44.8	D	141/363	0.56	42.6	D	156/415	0.56	42.7	D	157/403
Main Street WB through/right-turn	1.60	330.5	F	531/940	1.62	341.7	F	537/943	1.16	137.1	F	415/813
Overall Intersection	1.05	143.2	F	--/--	1.10	167.7	F	--/--	1.09	194.5	F	--/--
Saturday Middy:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	1.10	162.0	F	121/268	1.39	285.4	F	191/282	1.39	273.7	F	181/277
South Broadway NB through	1.25	157.5	F	517/633	1.33	186.6	F	552/695	1.23	137.9	F	575/697
South Broadway NB right-turn	0.22	30.9	C	91/91	0.25	8.3	A	0/56	0.24	9.1	A	49/55
South Broadway SB left-turn	1.14	189.1	F	103/199	1.14	189.1	F	103/199	1.14	189.1	F	103/199
North Broadway SB through/right-turn	1.51	282.1	F	631/680	1.62	332.4	F	706/751	1.49	273.1	F	706/751
Main Street EB left-turn	0.67	41.2	D	221/519	0.67	41.0	D	225/532	0.61	36.6	D	225/336
Main Street EB through	1.52	304.8	F	347/630	1.76	412.2	F	407/637	1.64	359.2	F	407/575
Main Street EB right-turn	0.26	35.8	D	43/117	0.28	37.5	D	47/120	0.03	34.1	C	0/0
Main Street WB left-turn	0.64	40.2	D	213/545	0.67	39.6	D	227/605	0.59	33.5	C	227/338
Main Street WB through/right-turn	2.72	836.5	F	813/1194	2.81	876.5	F	825/1197	2.41	396.3	F	825/1039
Overall Intersection	1.30	269.3	F	--/--	1.39	300.0	F	--/--	1.38	250.1	F	--/--

^a Volume-to-capacity ratio.

^b Average control delay in seconds per vehicle.

^c Level of service.

^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).

^e Mitigation – Coordinate South Broadway corridor.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
7. Main Street Geremonty Drive												
Weekday AM: ^f	Cycle Length = 130 seconds				Cycle Length = 130 seconds				Cycle Length = 130 seconds			
Main Street EB left-turn	0.10	26.9	C	9/30	0.10	26.9	C	9/30	0.13	30.9	C	10/31
Main Street EB through/right-turn	1.00	78.7	E	328/555	1.03	87.3	F	344/581	1.14	127.6	F	401/602
Main Street WB left-turn	0.81	38.6	D	95/213	0.84	45.7	D	106/230	1.05	105.4	F	131/335
Main Street WB through/right-turn	0.63	21.2	C	234/441	0.64	21.6	C	241/453	0.73	29.5	C	297/519
Geremonty Drive NB left-turn	0.85	56.4	E	106/148	0.85	56.4	E	106/148	0.97	85.9	F	96/139
Geremonty Drive NB through/right-turn	0.64	37.4	D	166/208	0.64	37.4	D	166/208	0.52	30.5	C	149/185
Geremonty Drive SB approach	1.85	446.1	F	439/528	1.85	446.1	F	439/528	1.10	121.9	F	310/389
Overall Intersection	1.03	120.3	F	--/--	1.04	122.4	F	--/--	1.02	81.9	F	--/--
Weekday PM:	Cycle Length = 130 seconds				Cycle Length = 130 seconds				Cycle Length = 130 seconds			
Main Street EB left-turn	0.14	22.6	C	17/58	0.14	22.6	C	17/58	0.11	16.0	B	15/48
Main Street EB through/right-turn	1.34	195.6	F	639/1216	1.37	211.9	F	670/1258	1.01	63.3	E	537/1094
Main Street WB left-turn	0.61	25.2	C	39/116	0.61	25.2	C	39/116	1.21	181.5	F	48/201
Main Street WB through/right-turn	0.54	18.3	B	181/396	0.57	18.9	B	196/426	0.50	15.5	B	186/409
Geremonty Drive NB left-turn	0.59	29.7	C	91/222	0.59	29.7	C	91/222	0.81	59.9	E	113/305
Geremonty Drive NB through/right-turn	0.91	52.3	D	274/676	0.91	52.3	D	274/676	1.07	104.5	F	352/736
Geremonty Drive SB approach	0.61	44.6	D	80/181	0.61	44.6	D	80/181	0.99	117.1	F	96/237
Overall Intersection	1.13	90.8	F	--/--	1.16	96.9	F	--/--	1.23	70.8	E	--/--
Saturday Midday:	Cycle Length = 130 seconds				Cycle Length = 130 seconds				Cycle Length = 130 seconds			
Main Street EB left-turn	0.12	22.2	C	13/41	0.13	22.2	C	13/41	0.10	14.3	B	11/32
Main Street EB through/right-turn	1.29	174.9	F	596/924	1.34	195.9	F	647/978	0.95	45.3	D	482/778
Main Street WB left-turn	0.60	25.0	C	39/116	0.61	25.1	C	39/116	0.92	77.6	E	34/167
Main Street WB through/right-turn	0.61	19.6	B	216/469	0.65	20.4	C	237/510	0.55	14.8	B	207/466
Geremonty Drive NB left-turn	0.63	31.4	C	84/222	0.63	31.9	C	84/243	1.02	114.6	F	108/278
Geremonty Drive NB through/right-turn	0.48	28.6	C	118/276	0.48	28.8	C	118/284	0.62	40.6	D	154/308
Geremonty Drive SB approach	0.94	85.2	F	131/268	0.94	86.9	F	131/277	1.05	126.7	F	152/283
Overall Intersection	1.02	84.2	F	--/--	1.06	92.8	F	--/--	0.98	52.0	D	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Optimize splits and replace LEFT TURN YIELD ON GREEN BALL sign (R10-12) on northbound approach.
^f Optimized timings as presented in TIAS³ were re-evaluated in order to achieve overall intersection improvements.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
9. South Broadway at Post Office Driveway and Proposed Site Driveway												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
South Broadway NB left-turn	0.57	49.7	D	24/63	0.54	48.4	D	22/60	0.54	48.9	D	17/58
South Broadway NB through	0.27	11.8	B	92/137	0.27	13.0	B	90/133	0.28	11.3	B	90/193
South Broadway NB right-turn	0.04	7.5	A	0/4	0.04	8.4	A	0/1	0.04	9.0	A	0/4
South Broadway SB left-turn	0.47	58.2	E	28/35	0.47	60.2	E	28/34	0.47	59.8	E	29/36
South Broadway SB through/right-turn	0.44	4.6	A	26/239	0.47	5.1	A	28/242	0.43	5.1	A	23/53
Site Driveway EB left-turn	0.10	46.2	D	4/18	0.59	52.5	D	32/80	0.49	45.4	D	31/69
Site Driveway EB through/right-turn	0.11	46.3	D	4/18	0.22	44.7	D	13/38	0.69	57.6	E	52/103
Site Driveway EB right-turn	0.10	46.2	D	4/17	0.22	44.7	D	13/38	0.68	57.1	E	51/102
Post Office Driveway WB left-turn/through	0.60	54.0	D	29/54	0.43	44.8	D	28/54	0.39	43.3	D	27/53
Post Office Driveway WB right-turn	0.02	39.6	D	0/5	0.02	37.6	D	0/5	0.02	36.4	D	0/5
Overall Intersection	0.44	12.2	B	--/--	0.46	13.9	B	--/--	0.44	16.8	B	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	0.45	70.7	E	23/46	0.64	78.9	E	84/175	0.63	58.2	E	78/135
South Broadway NB through	0.51	9.7	A	73/393	0.57	14.0	B	72/374	0.59	21.6	C	188/228
South Broadway NB right-turn	0.07	5.0	A	0/13	0.07	6.4	A	0/11	0.07	37.5	D	7/18
South Broadway SB left-turn	0.60	67.4	E	67/82	0.59	74.9	E	65/76	0.60	67.9	E	65/70
South Broadway SB through/right-turn	0.35	10.1	B	32/377	0.53	15.4	B	62/420	0.48	9.1	A	23/92
Site Driveway EB left-turn	0.20	50.6	D	17/42	0.74	56.8	E	123/281	0.68	49.9	D	122/297
Site Driveway EB through/right-turn	0.15	50.2	D	14/40	0.15	41.1	D	27/66	0.32	41.1	D	65/135
Site Driveway EB right-turn	0.15	50.2	D	14/40	0.15	41.1	D	27/66	0.32	41.2	D	65/135
Post Office Driveway WB left-turn/through	0.67	61.0	E	73/127	0.37	42.0	D	64/127	0.36	40.4	D	63/131
Post Office Driveway WB right-turn	0.07	40.5	D	0/46	0.07	32.3	C	0/46	0.07	31.1	C	0/49
Overall Intersection	0.52	17.5	B	--/--	0.61	24.2	C	--/--	0.61	26.0	C	--/--
Saturday Midday:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	0.63	60.0	E	63/150	1.16	188.9	F	121/250	0.74	64.8	E	99/192
South Broadway NB through	0.64	19.8	B	281/568	0.89	44.5	D	425/526	0.87	41.5	D	410/502
South Broadway NB right-turn	0.09	12.6	B	1/42	0.09	24.1	C	0/40	0.11	23.5	C	7/45
South Broadway SB left-turn	0.63	66.8	E	73/73	0.64	66.9	E	58/58	0.77	85.8	F	71/71
South Broadway SB through/right-turn	0.63	12.3	B	58/456	1.00	33.3	C	524/524	0.99	23.8	C	429/429
Site Driveway EB left-turn	0.38	49.1	D	32/71	0.65	39.6	D	144/404	0.62	37.0	D	141/384
Site Driveway EB through/right-turn	0.23	47.6	D	30/68	0.14	30.4	C	33/91	0.29	30.7	C	76/173
Site Driveway EB right-turn	0.23	47.6	D	30/67	0.14	30.4	C	33/91	0.29	30.8	C	76/174
Post Office Driveway WB left-turn/through	0.80	69.9	E	109/206	0.35	31.7	C	80/209	0.38	31.9	C	81/215
Post Office Driveway WB right-turn	0.06	37.3	D	0/44	0.07	22.6	C	0/44	0.07	23.4	C	0/46
Overall Intersection	0.65	23.1	C	--/--	0.84	43.4	D	--/--	0.78	34.7	C	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate South Broadway corridor.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
10. South Broadway at Rockingham Park Blvd and Veterans Memorial Pkwy												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
South Broadway NB left-turn	0.55	38.7	D	78/108	0.55	38.7	D	79/105	0.55	38.7	D	79/105
South Broadway NB through	0.21	27.8	C	52/79	0.21	27.9	C	52/78	0.21	27.9	C	52/78
South Broadway NB right-turn	0.10	37.4	D	0/66	0.10	37.5	D	0/67	0.10	37.5	D	0/67
South Broadway SB left-turn	0.36	51.1	D	35/57	0.38	49.8	D	35/60	0.38	38.1	D	28/45
South Broadway SB through/right-turn	1.22	53.2	D	126/248	1.21	53.5	D	130/249	1.21	33.9	C	124/263
Rockingham Park Blvd EB left-turn	0.52	39.9	D	56/79	0.49	38.1	D	38/58	0.49	42.1	D	52/84
Rockingham Park Blvd EB through	0.22	22.3	C	60/94	0.23	29.4	C	66/123	0.23	22.0	C	55/88
Rockingham Park Blvd EB right-turn	0.19	14.2	B	47/71	0.19	12.0	B	47/70	0.19	16.4	B	47/72
Veterans Memorial Pkwy WB left-turn	0.47	43.9	D	45/70	0.47	43.9	D	45/70	0.47	43.9	D	45/70
Veterans Memorial Pkwy WB through	0.87	40.3	D	301/396	0.86	39.2	D	299/388	0.86	39.2	D	299/388
Veterans Memorial Pkwy WB right-turn	0.22	20.4	C	59/96	0.22	20.1	C	60/96	0.22	20.1	C	60/96
Overall Intersection	0.76	39.9	D	--/--	0.76	39.8	D	--/--	0.76	33.6	C	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	0.72	45.4	D	202/339	0.72	45.3	D	201/341	0.72	43.6	D	201/312
South Broadway NB through	0.42	22.7	C	161/161	0.43	22.9	C	167/167	0.43	21.5	C	167/167
South Broadway NB right-turn	0.18	20.5	C	5/47	0.18	21.0	C	5/49	0.18	9.6	A	5/20
South Broadway SB left-turn	0.49	60.3	E	57/83	0.51	60.8	E	61/88	0.51	61.6	E	61/96
South Broadway SB through/right-turn	0.99	70.5	E	245/317	0.98	69.6	E	236/319	0.98	67.9	E	243/324
Rockingham Park Blvd EB left-turn	0.80	46.2	D	196/240	0.80	43.2	D	166/210	0.80	43.7	D	150/202
Rockingham Park Blvd EB through	0.79	55.4	E	246/288	0.80	53.9	D	238/306	0.80	47.2	D	228/291
Rockingham Park Blvd EB right-turn	0.51	19.2	B	211/261	0.51	16.7	B	214/268	0.51	18.6	B	230/288
Veterans Memorial Pkwy WB left-turn	0.77	59.0	E	127/178	0.77	59.0	E	127/178	0.77	59.0	E	127/178
Veterans Memorial Pkwy WB through	0.78	56.6	E	159/212	0.79	56.6	E	161/214	0.79	56.6	E	161/214
Veterans Memorial Pkwy WB right-turn	0.32	39.2	D	87/137	0.35	39.3	D	97/149	0.35	39.3	D	97/149
Overall Intersection	0.84	43.9	D	--/--	0.84	43.0	D	--/--	0.84	41.4	D	--/--
Saturday Midday:	Cycle Length = 140 seconds				Cycle Length = 140 seconds				Cycle Length = 140 seconds			
South Broadway NB left-turn	1.34	203.0	F	932/1058	1.34	200.1	F	937/1063	1.34	202.2	F	928/1066
South Broadway NB through	0.43	27.4	C	236/244	0.43	27.5	C	241/250	0.43	25.7	C	213/232
South Broadway NB right-turn	0.24	42.1	D	64/104	0.24	42.1	D	64/107	0.24	16.0	B	33/33
South Broadway SB left-turn	0.66	64.5	E	109/151	0.67	64.6	E	114/156	0.67	64.6	E	114/156
South Broadway SB through/right-turn	1.36	229.1	F	526/624	1.34	217.5	F	512/610	1.34	217.5	F	512/610
Rockingham Park Blvd EB left-turn	0.83	54.0	D	216/252	0.80	51.8	D	182/239	0.80	53.9	D	195/239
Rockingham Park Blvd EB through	0.55	49.4	D	166/220	0.57	56.2	E	182/236	0.57	53.2	D	184/242
Rockingham Park Blvd EB right-turn	1.13	106.0	F	1138/1290	1.13	100.4	F	1131/1291	1.13	101.7	F	1119/1273
Veterans Memorial Pkwy WB left-turn	1.23	181.7	F	357/478	1.23	181.7	F	357/478	1.23	181.7	F	357/478
Veterans Memorial Pkwy WB through	0.91	72.7	E	268/376	0.90	70.5	E	268/381	0.90	70.5	E	268/381
Veterans Memorial Pkwy WB right-turn	0.51	42.9	D	191/274	0.53	42.7	D	200/286	0.53	42.7	D	200/286
Overall Intersection	1.31	125.2	F	--/--	1.30	121.4	F	--/--	1.30	120.6	F	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate South Broadway/Rockingham Park Boulevard corridors.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
11 .South Broadway at Kelly Road/Retail Driveway												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
South Broadway NB left-turn	0.51	43.3	D	70/113	0.52	43.4	D	70/115	0.52	43.4	D	70/115
South Broadway NB through/right-turn	0.23	4.9	A	35/103	0.23	5.0	A	35/104	0.23	5.0	A	35/104
South Broadway SB left-turn	0.05	56.8	E	0/3	0.05	55.5	E	0/3	0.05	57.4	E	0/3
South Broadway SB through/right-turn	0.28	13.3	B	121/196	0.29	13.5	B	123/199	0.29	13.5	B	123/197
Kelly Road EB left-turn	0.30	43.8	D	27/50	0.29	43.7	D	27/49	0.29	43.7	D	27/49
Kelly Road EB left-turn/through	0.29	43.8	D	27/50	0.29	43.7	D	27/49	0.29	43.7	D	27/49
Kelly Road EB right-turn	0.15	42.6	D	0/31	0.15	42.5	D	0/33	0.15	42.5	D	0/33
Shared Retail Driveway WB approach	0.00	0.0	A	0/0	0.00	0.0	A	0/0	0.00	0.0	A	0/0
Overall Intersection	0.34	18.4	B	--/--	0.35	18.5	B	--/--	0.35	18.5	B	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
South Broadway NB left-turn	0.68	53.8	D	154/225	0.68	53.8	D	155/225	0.73	57.8	E	155/240
South Broadway NB through/right-turn	0.59	13.6	B	236/496	0.60	13.8	B	242/510	0.58	12.9	B	242/443
South Broadway SB left-turn	0.41	62.3	E	16/24	0.41	61.0	E	15/22	0.56	73.2	E	16/25
South Broadway SB through/right-turn	0.70	25.8	C	371/610	0.71	25.6	C	384/623	0.69	23.6	C	376/472
Kelly Road EB left-turn	0.45	53.5	D	56/102	0.45	53.5	D	56/102	0.47	54.3	D	56/104
Kelly Road EB left-turn/through	0.44	53.4	D	56/102	0.44	53.4	D	56/102	0.46	54.1	D	56/104
Kelly Road EB right-turn	0.17	50.6	D	0/78	0.17	50.6	D	0/78	0.17	51.1	D	0/81
Shared Retail Driveway WB approach	0.20	57.1	E	10/32	0.20	57.1	E	10/32	0.21	57.3	E	10/32
Overall Intersection	0.64	26.4	C	--/--	0.65	26.3	C	--/--	0.65	25.6	C	--/--
Saturday Midday:	Cycle Length = 140 seconds				Cycle Length = 140 seconds				Cycle Length = 140 seconds			
South Broadway NB left-turn	0.71	64.8	E	175/248	0.71	64.8	E	176/249	0.77	72.5	E	176/269
South Broadway NB through/right-turn	0.80	22.0	C	490/1037	0.81	22.2	C	497/1051	0.77	18.6	B	495/773
South Broadway SB left-turn	0.39	72.0	E	14/14	0.39	72.4	E	14/14	0.64	76.1	E	14/14
South Broadway SB through/right-turn	1.10	77.4	E	1083/1083	1.11	80.7	F	1095/1095	1.04	49.9	D	1071/1071
Kelly Road EB left-turn	0.60	63.9	E	110/163	0.60	63.9	E	110/163	0.68	70.4	E	110/172
Kelly Road EB left-turn/through	0.61	64.1	E	112/165	0.61	64.1	E	112/165	0.68	71.0	E	112/174
Kelly Road EB right-turn	0.19	56.5	E	0/68	0.20	56.5	E	0/68	0.51	61.9	E	48/137
Shared Retail Driveway WB approach	0.36	66.4	E	28/66	0.36	66.4	E	28/66	0.44	69.1	E	29/71
Overall Intersection	0.93	52.6	D	--/--	0.93	54.1	D	--/--	0.92	40.7	D	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate Rockingham Park Boulevard corridor and add pedestrian equipment for NH 28 crosswalk.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
12. Rockingham Park Blvd at Racetrack Driveway												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
Rockingham Park Blvd EB left-turn	0.11	50.5	D	1/7	0.62	42.7	D	89/139	0.46	42.3	D	45/72
Rockingham Park Blvd EB through	0.17	1.3	A	0/31	0.17	2.4	A	30/45	0.17	2.0	A	27/35
Rockingham Park Blvd WB through	0.47	4.3	A	0/156	0.59	12.3	B	247/427	0.54	6.7	A	147/167
Rockingham Park Blvd WB right-turn	0.01	0.0	A	0/0	0.03	0.0	A	0/0	0.03	0.0	A	0/0
Racetrack Driveway SB left-turn	0.29	49.1	D	7/17	0.18	42.8	D	13/25	0.22	44.6	D	13/26
Racetrack Driveway SB right-turn	0.00	40.6	D	0/2	0.23	28.4	C	23/35	0.22	32.5	C	18/34
Overall Intersection	0.46	3.9	A	--/--	0.57	12.3	B	--/--	0.52	8.7	A	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
Rockingham Park Blvd EB left-turn	0.38	54.4	D	27/62	0.69	42.2	D	226/316	0.68	55.3	E	125/172
Rockingham Park Blvd EB through	0.44	1.9	A	74/94	0.46	3.8	A	116/156	0.46	3.6	A	114/129
Rockingham Park Blvd WB through	0.35	3.1	A	53/60	0.54	13.2	B	163/180	0.42	6.0	A	113/126
Rockingham Park Blvd WB right-turn	0.03	0.0	A	0/0	0.05	0.0	A	0/0	0.05	0.0	A	0/0
Racetrack Driveway SB left-turn	0.30	55.7	E	20/33	0.25	48.2	D	39/52	0.27	49.0	D	39/54
Racetrack Driveway SB right-turn	0.03	43.3	D	3/15	0.30	22.8	C	100/100	0.41	34.0	C	114/117
Overall Intersection	0.46	4.2	A	--/--	0.56	12.7	B	--/--	0.51	12.4	B	--/--
Saturday MIDDAY:	Cycle Length = 70 seconds				Cycle Length = 70 seconds				Cycle Length = 140 seconds			
Rockingham Park Blvd EB left-turn	0.43	35.3	D	37/70	1.43	244.7	F	509/774	0.78	65.8	E	220/269
Rockingham Park Blvd EB through	0.67	2.8	A	109/117	0.74	5.5	A	187/303	0.58	2.2	A	117/127
Rockingham Park Blvd WB through	0.78	19.2	B	598/598	1.11	82.7	F	704/704	0.69	5.2	A	202/202
Rockingham Park Blvd WB right-turn	0.03	0.0	A	0/0	0.07	0.0	A	0/0	0.07	0.0	A	0/0
Racetrack Driveway SB left-turn	0.13	31.4	C	5/15	0.17	25.5	C	18/34	0.48	65.3	E	44/69
Racetrack Driveway SB right-turn	0.04	20.3	C	4/11	0.37	13.7	B	71/98	0.57	44.8	D	196/223
Overall Intersection	0.76	11.0	B	--/--	1.05	54.9	D	--/--	0.72	12.6	B	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate Rockingham Park Boulevard corridor and construct a second EB left-turn lane.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
13. Rockingham Park Blvd at Mall Road												
Weekday AM:	Cycle Length = 100 seconds				Cycle Length = 100 seconds				Cycle Length = 100 seconds			
Rockingham Park Blvd EB left-turn	0.06	43.7	D	5/19	0.07	43.7	D	5/21	0.07	43.3	D	5/20
Rockingham Park Blvd EB through	0.18	2.9	A	31/45	0.22	4.1	A	48/69	0.20	2.7	A	36/43
Rockingham Park Blvd WB through	0.79	12.6	B	524/608	0.87	12.8	B	568/568	0.56	2.4	A	21/26
Rockingham Park Blvd WB right-turn	0.06	0.1	A	0/0	0.06	0.1	A	0/0	0.06	0.1	A	0/0
Mall Road SB left-turn	0.11	41.3	D	10/23	0.08	37.6	D	10/22	0.12	42.2	D	11/24
Mall Road SB right-turn	0.22	31.6	C	39/60	0.37	30.0	C	75/100	0.40	33.6	C	68/98
Overall Intersection	0.69	11.2	B	--/--	0.77	12.0	B	--/--	0.56	5.6	A	--/--
Weekday PM:	Cycle Length = 120 seconds				Cycle Length = 120 seconds				Cycle Length = 120 seconds			
Rockingham Park Blvd EB left-turn	0.50	53.8	D	64/112	0.48	53.0	D	64/112	0.38	49.2	D	62/105
Rockingham Park Blvd EB through	0.44	9.1	A	179/243	0.53	12.4	B	261/300	0.47	7.7	A	187/215
Rockingham Park Blvd WB through	0.59	9.8	A	120/286	0.78	16.2	B	164/185	0.49	10.5	B	96/287
Rockingham Park Blvd WB right-turn	0.22	0.3	A	0/0	0.22	0.3	A	0/0	0.22	0.3	A	0/0
Mall Road SB left-turn	0.46	41.0	D	122/146	0.38	36.7	D	112/144	0.55	45.4	D	128/164
Mall Road SB right-turn	0.53	30.6	C	186/192	0.63	29.1	C	241/259	0.71	35.3	D	267/273
Overall Intersection	0.60	15.3	B	--/--	0.75	17.9	B	--/--	0.61	16.0	B	--/--
Saturday MIDDAY:	Cycle Length = 140 seconds				Cycle Length = 140 seconds				Cycle Length = 140 seconds			
Rockingham Park Blvd EB left-turn	0.68	65.2	E	146/213	0.66	62.8	E	147/213	0.69	65.5	E	147/222
Rockingham Park Blvd EB through	0.60	13.8	B	360/461	0.76	21.2	C	553/612	0.68	14.0	B	429/475
Rockingham Park Blvd WB through	1.01	46.7	D	556/1177	1.34	194.6	F	1272/1272	0.79	16.6	B	390/390
Rockingham Park Blvd WB right-turn	0.37	0.5	A	0/0	0.37	0.2	A	0/0	0.37	0.5	A	0/0
Mall Road SB left-turn	0.74	52.0	D	278/326	0.61	42.9	D	255/320	0.80	56.8	E	286/358
Mall Road SB right-turn	0.55	30.8	C	256/265	0.65	28.2	C	338/472	0.78	39.3	D	393/468
Overall Intersection	0.89	29.8	C	--/--	1.05	76.2	E	--/--	0.82	22.3	C	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Coordinate Rockingham Park Boulevard corridor and construct a third WB through lane.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
14. Mall Road at Rockingham Park Blvd Flyover and Mall Driveway												
Weekday AM:	Cycle Length = 84 seconds				Cycle Length = 84 seconds				Cycle Length = 84 seconds			
Mall Road NB left-turn	0.23	16.1	B	5/24	0.26	19.0	B	6/27	0.27	19.1	B	6/27
Mall Road NB through	0.24	16.0	B	5/21	0.28	18.9	B	6/23	0.29	19.0	B	6/23
Mall Road SB through/right-turn	0.32	14.4	B	12/34	0.40	14.6	B	24/58	0.40	14.5	B	24/58
Mall Driveway EB left-turn	0.00	0.00	A	0/0	0.00	0.00	A	0/0	0.00	0.0	A	0/0
Mall Driveway EB right-turn	0.01	10.1	B	0/0	0.01	12.7	B	0/0	0.01	12.7	B	0/0
Flyover WB left-turn/through	0.14	14.7	B	4/13	0.11	16.0	B	5/14	0.11	15.9	B	5/14
Flyover WB right-turn	0.08	6.5	A	0/8	0.15	6.0	A	0/5	0.15	5.9	A	0/5
Overall Intersection	0.23	12.4	B	--/--	0.31	12.2	B	--/--	0.31	12.2	B	--/--
Weekday PM:	Cycle Length = 84 seconds				Cycle Length = 84 seconds				Cycle Length = 84 seconds			
Mall Road NB left-turn	0.68	25.8	C	98/252	0.73	30.8	C	114/282	0.62	24.7	C	115/203
Mall Road NB through	0.17	19.4	B	22/54	0.18	21.8	C	26/60	0.16	20.0	B	26/50
Mall Road SB through/right-turn	0.50	25.1	C	51/97	0.59	25.8	C	84/147	0.59	26.2	C	91/148
Mall Driveway EB left-turn	0.05	26.2	C	3/16	0.06	28.7	C	4/17	0.07	30.2	C	4/18
Mall Driveway EB right-turn	0.21	11.6	B	0/23	0.21	13.6	B	0/25	0.21	13.0	B	0/22
Flyover WB left-turn/through	0.48	25.5	C	44/87	0.47	27.5	C	49/93	0.53	29.3	C	53/100
Flyover WB right-turn	0.10	12.5	B	0/34	0.19	12.3	B	0/42	0.19	13.3	B	0/48
Overall Intersection	0.54	18.8	B	--/--	0.57	20.6	C	--/--	0.56	19.9	B	--/--
Saturday Middy:	Cycle Length = 84 seconds				Cycle Length = 84 seconds				Cycle Length = 84 seconds			
Mall Road NB left-turn	1.15	121.6	F	255/475	1.22	153.0	F	277/475	0.90	47.8	D	222/391
Mall Road NB through	0.41	25.7	C	68/117	0.44	28.2	C	74/118	0.32	24.2	C	70/105
Mall Road SB through/right-turn	0.64	29.5	C	101/155	0.81	34.7	C	163/256	0.83	37.9	D	174/256
Mall Driveway EB left-turn	0.14	31.7	C	10/33	0.14	33.7	C	11/33	0.21	37.4	D	12/36
Mall Driveway EB right-turn	0.29	16.2	B	0/38	0.31	18.2	B	6/45	0.34	17.2	B	18/58
Flyover WB left-turn/through	0.77	34.1	C	121/207	0.78	37.0	D	128/207	0.90	51.5	D	140/232
Flyover WB right-turn	0.16	12.0	B	0/38	0.36	13.0	B	31/98	0.43	15.6	B	65/149
Overall Intersection	0.80	38.6	D	--/--	0.87	42.6	D	--/--	0.85	31.3	C	--/--

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Optimize splits.

Table 4 (continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY – 2029 CONDITIONS WITH MITIGATION

Intersection/Peak Hour/Lane Group	2029 No-Build (TIAS)				2029 Build				2029 Build with Mitigation ^e			
	V/C ^a	Del. ^b	LOS ^c	Queue ^d	V/C	Del.	LOS	Queue	V/C	Del.	LOS	Queue
15. Mall Road at Mall Driveway												
Weekday AM:	Unsignalized				Unsignalized				Unsignalized			
Mall Road NB left-turn	0.01	7.8	A	--/1	0.01	7.8	A	--/1	0.01	7.8	A	--/1
Mall Road NB through/right-turn	0.09	0.0	A	--/0	0.15	0.0	A	--/0	0.15	0.0	A	--/0
Mall Road SB left-turn	--	--	--	--/--	0.01	1.0	A	--/1	0.01	7.8	A	--/1
Mall Road SB through/right-turn	0.08	0.0	A	--/0	0.01	1.0	A	--/1	0.07	0.0	A	--/0
Mall Driveway EB left-turn/through	0.00	0.0	A	--/0	0.00	0.0	A	--/0	0.00	0.0	A	--/0
Mall Driveway EB right-turn	0.01	10.1	B	--/0	0.01	10.1	B	--/0	0.01	10.1	B	--/0
Site Driveway WB left-turn	--	--	--	--/--	--	--	--	--/--	0.20	12.9	B	--/19
Site Driveway WB through/right-turn	--	--	--	--/--	0.21	12.8	B	--/20	0.01	9.2	A	--/1
Weekday PM:	Unsignalized				Unsignalized				Unsignalized			
Mall Road NB left-turn	0.02	7.5	A	--/1	0.02	7.5	A	--/1	0.02	7.5	A	--/1
Mall Road NB through/right-turn	0.12	0.0	A	--/0	0.21	0.0	A	--/0	0.21	0.0	A	--/0
Mall Road SB left-turn	--	--	--	--/--	0.04	2.6	A	--/3	0.04	8.1	A	--/3
Mall Road SB through/right-turn	0.07	0.0	A	--/0	0.04	2.6	A	--/3	0.07	0.0	A	--/0
Mall Driveway EB left-turn/through	0.00	10.8	B	--/0	0.00	12.3	B	--/0	0.00	12.3	B	--/0
Mall Driveway EB right-turn	0.06	9.1	A	--/5	0.06	9.1	A	--/5	0.06	9.1	A	--/5
Site Driveway WB left-turn	--	--	--	--/--	--	--	--	--/--	0.39	19.6	C	--/45
Site Driveway WB through/right-turn	--	--	--	--/--	0.43	19.2	C	--/54	0.04	9.6	A	--/3
Saturday Middy:	Unsignalized				Unsignalized				Unsignalized			
Mall Road NB left-turn	0.04	7.7	A	--/3	0.04	7.7	A	--/3	0.04	7.7	A	--/3
Mall Road NB through/right-turn	0.18	0.0	A	--/0	0.36	0.0	A	--/0	0.36	0.0	A	--/0
Mall Road SB left-turn	--	--	--	--/--	0.05	2.3	A	--/4	0.05	9.1	A	--/4
Mall Road SB through/right-turn	0.11	0.0	A	--/0	0.05	2.3	A	--/4	0.11	0.0	A	--/0
Mall Driveway EB left-turn/through	0.01	13.2	B	--/1	0.02	16.4	C	--/1	0.02	16.4	C	--/1
Mall Driveway EB right-turn	0.09	9.6	A	--/7	0.08	9.5	A	--/7	0.08	9.5	A	--/7
Site Driveway WB left-turn	--	--	--	--/--	--	--	--	--/--	1.10	135.9	F	--/273
Site Driveway WB through/right-turn	--	--	--	--/--	1.17	153.8	F	--/333	0.07	10.8	B	--/6

^a Volume-to-capacity ratio.
^b Average control delay in seconds per vehicle.
^c Level of service.
^d Maximum queue length in feet per lane during an average/95th percentile cycle (assuming 25 feet per vehicle).
^e Mitigation – Add a second lane on westbound site driveway approach and restripe the southbound approach to include a left-turn lane into the site.

CONCLUSIONS

Future conditions have been re-evaluated and re-analyzed in the study area with respect to traffic operations and the impact of the proposed Tuscan Village project with the elimination of the access/egress to the site opposite the Coca-Cola driveway (Node 8). Conclusions of this effort are presented below.

- Greenman-Pedersen, Inc. (GPI) submitted a *Traffic Impact and Access Study* (TIAS) for the proposed Tuscan Village development located at 79 Rockingham Park Boulevard/11 Central Street in Salem, New Hampshire, dated June 17, 2016. The project consists of the redevelopment of an approximate 50-acre parcel currently occupied by barns associated with the Rockingham Park Racetrack located directly south of the Project site.
- Due to the approvals needed for the site driveway opposite the Coca-Cola redevelopment driveway (Node 8), there is a possibility that this driveway will not be constructed and, therefore, is being eliminated as an access/egress point to the site. Accordingly, per the email provided in the Appendix, NHDOT has requested that the trip distribution for Nodes 4, 5, 6 and 9 (as designated on Figure 1) be regenerated to assume the removal of Node 8 as a point of access to the site.
- In terms of the adjusted trip distribution, the Build analysis results are similar to the results as presented in the TIAS. The overall delay at Nodes 4, 5, 6, and 18 are within 5 seconds of the overall delay presented in the TIAS. The intersection of South Broadway at the Post Office driveway and Site driveway (Node 9) has the greatest difference during the Saturday midday of approximately 20 seconds, however, coordination of the South Broadway corridor has been committed to as part of the project, which includes this intersection.
- Since the submission of the TIAS, mitigation measures have been committed to by the Applicant. The mitigation commitments exceed the recommended improvements as presented in the TIAS. Signal timings modifications are committed to at ten study area intersections, geometric improvements are committed to at two intersections, and new traffic signal equipment and geometric improvements are committed to at four intersections.

APPENDIX

NHDOT EMAIL DATED 11/16/16

UPDATED TRIP-DISTRIBUTION DATA

NO-BUILD PEAK-HOUR TRAFFIC-VOLUME NETWORKS

CAPACITY ANALYSIS METHODOLOGY

**CAPACITY AND QUEUE ANALYSIS WORKSHEETS–EXISTING, NO-BUILD, BUILD
WARRANT ANALYSES**

MITIGATION COMMITMENT SKETCHES

CAPACITY AND QUEUE ANALYSIS WORKSHEETS – BUILD WITH MITIGATION

FIGURES A1 & A2 – BUILD WITH MITIGATION NETWORKS
