

Transportation Analysis



Jodeco Crossing DRI #2504 Henry County, GA

August 2015



ACKNOWLEDGEMENTS

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The proposed multi-use development is expected to generate an estimated 34,317 daily new trips.

The analysis identified a number of improvements that are needed currently to meet minimum level of service (LOS) standards. The analysis then determined necessary improvements needed to accommodate background volumes and finally the improvements needed for the projected volumes were identified.

Tables 21 and 22 on pages 70 and 71 show a summary of the improvements needed for the existing volumes and the incremental improvements for the background and projected volumes.

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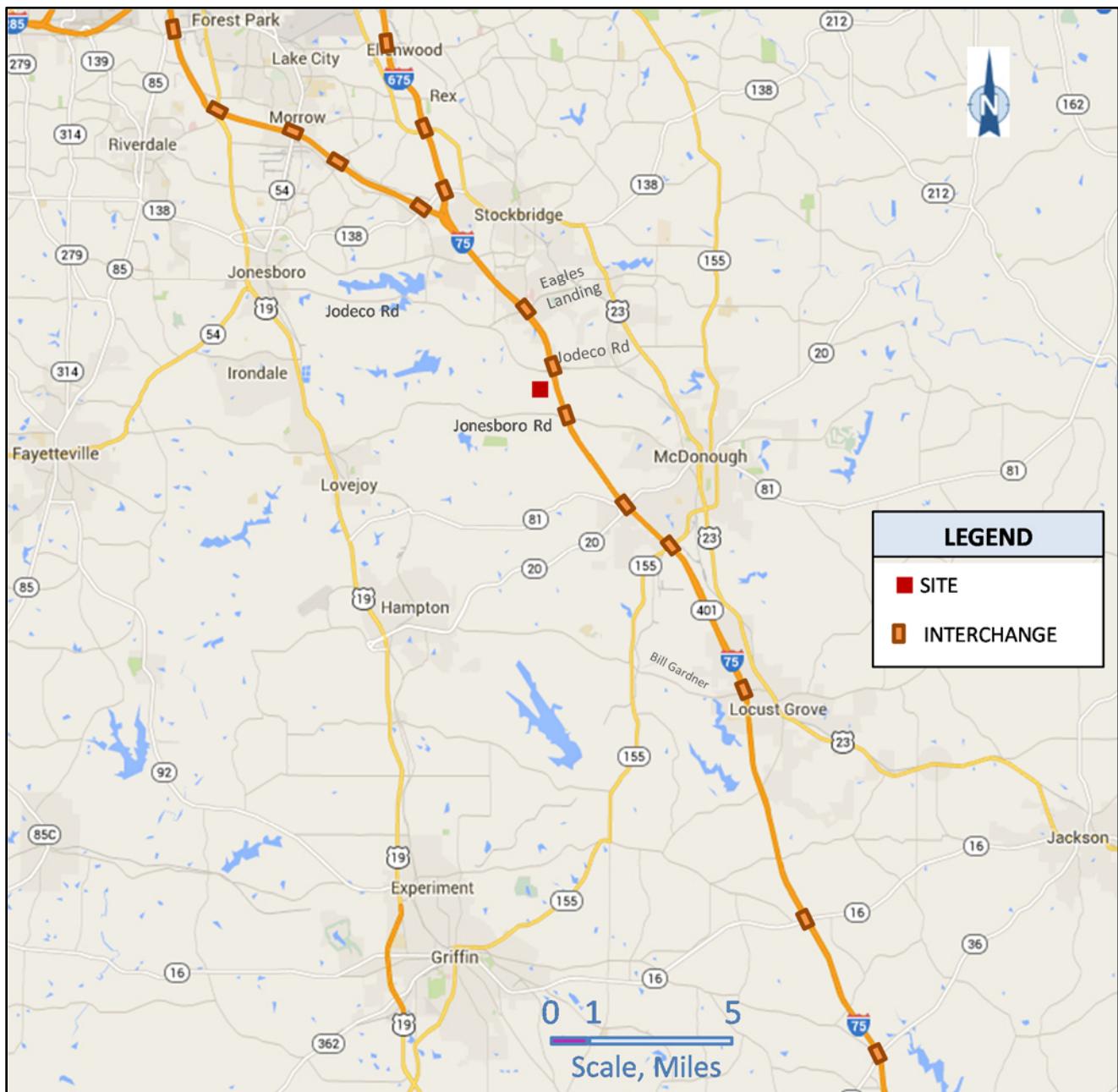
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INTRODUCTION

Location of Development

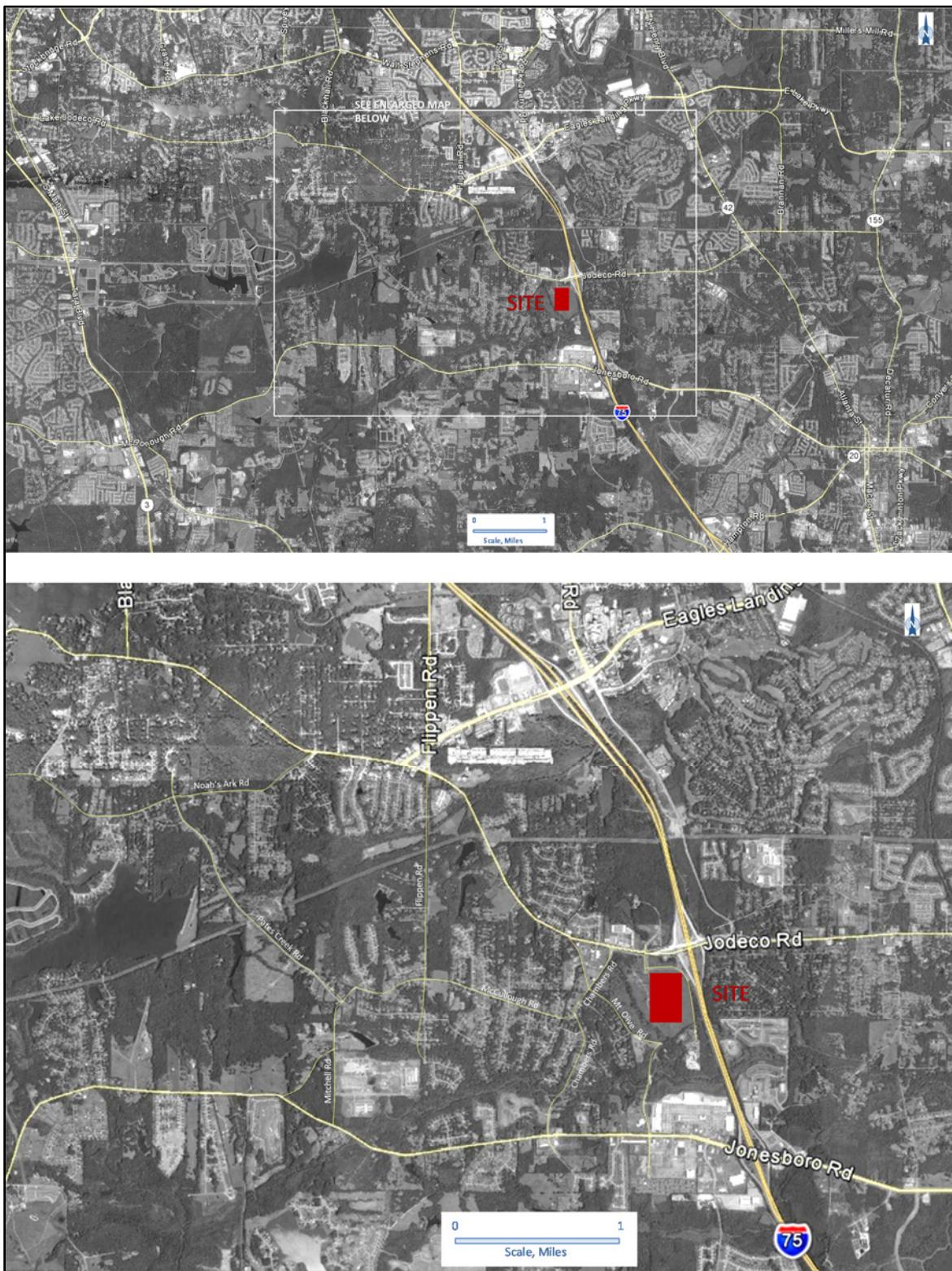
The site is a 158.65 acre tract located on the west side of Interstate 75 between Jodeco Road and Jonesboro Road in unincorporated Henry County. The location is illustrated in Figure 1.

Figure 1: PROJECT LOCATION MAP



The following major roads near the site have interchanges with I-75: Hudson Bridge Road/Eagles Landing Parkway, Jodeco Road, Jonesboro Road, SR 20/81, and SR 155. Figure 2 shows the site location and surrounding roadways in more detail.

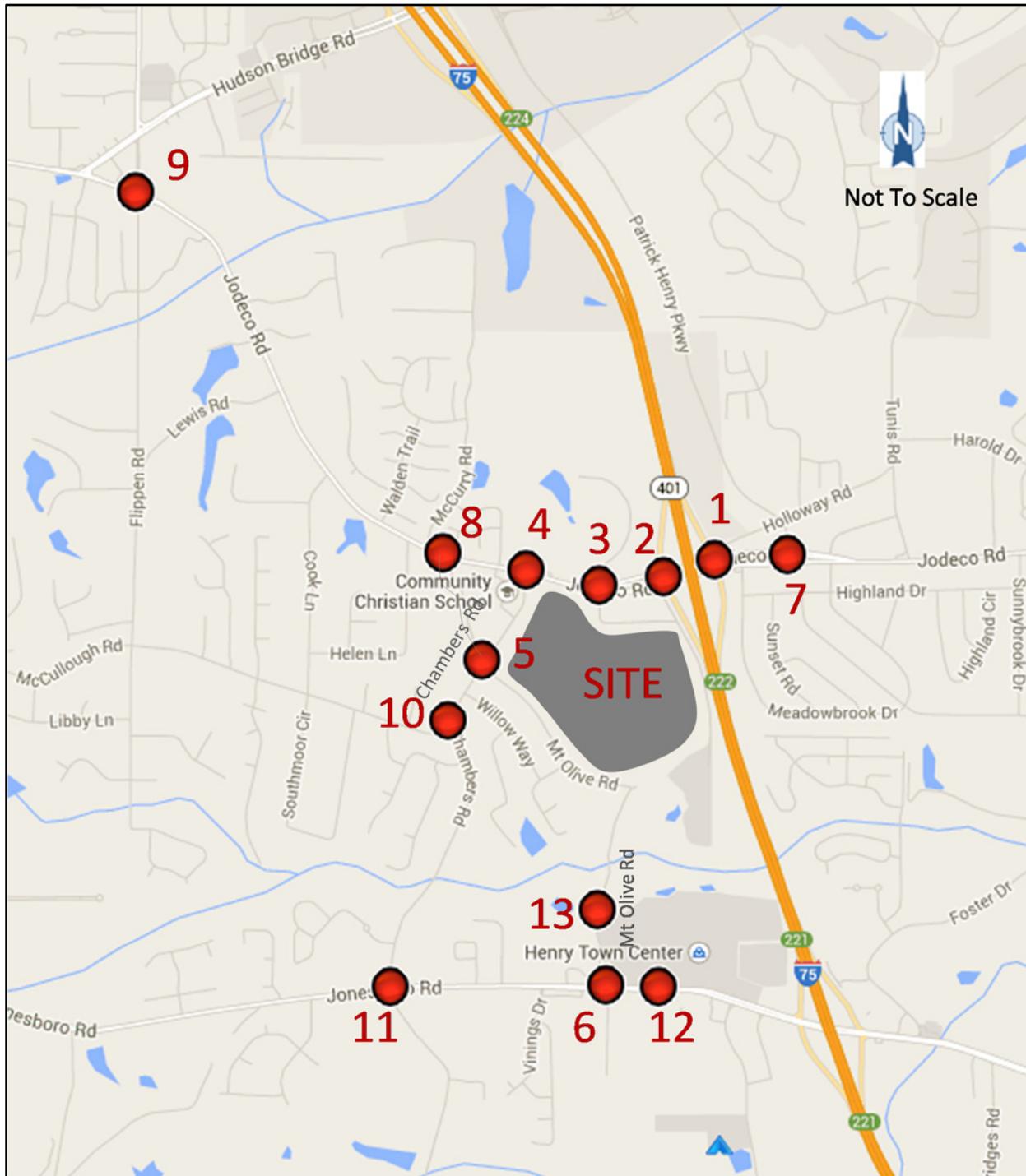
Figure 2: VICINITY MAP



Study Area

In an initial meeting with officials from GRTA, ARC, and Henry County, a list was developed of intersections where the impacts should be evaluated. Those intersections and the connecting roadways define the study area as illustrated in Figure 3.

Figure 3: STUDY AREA

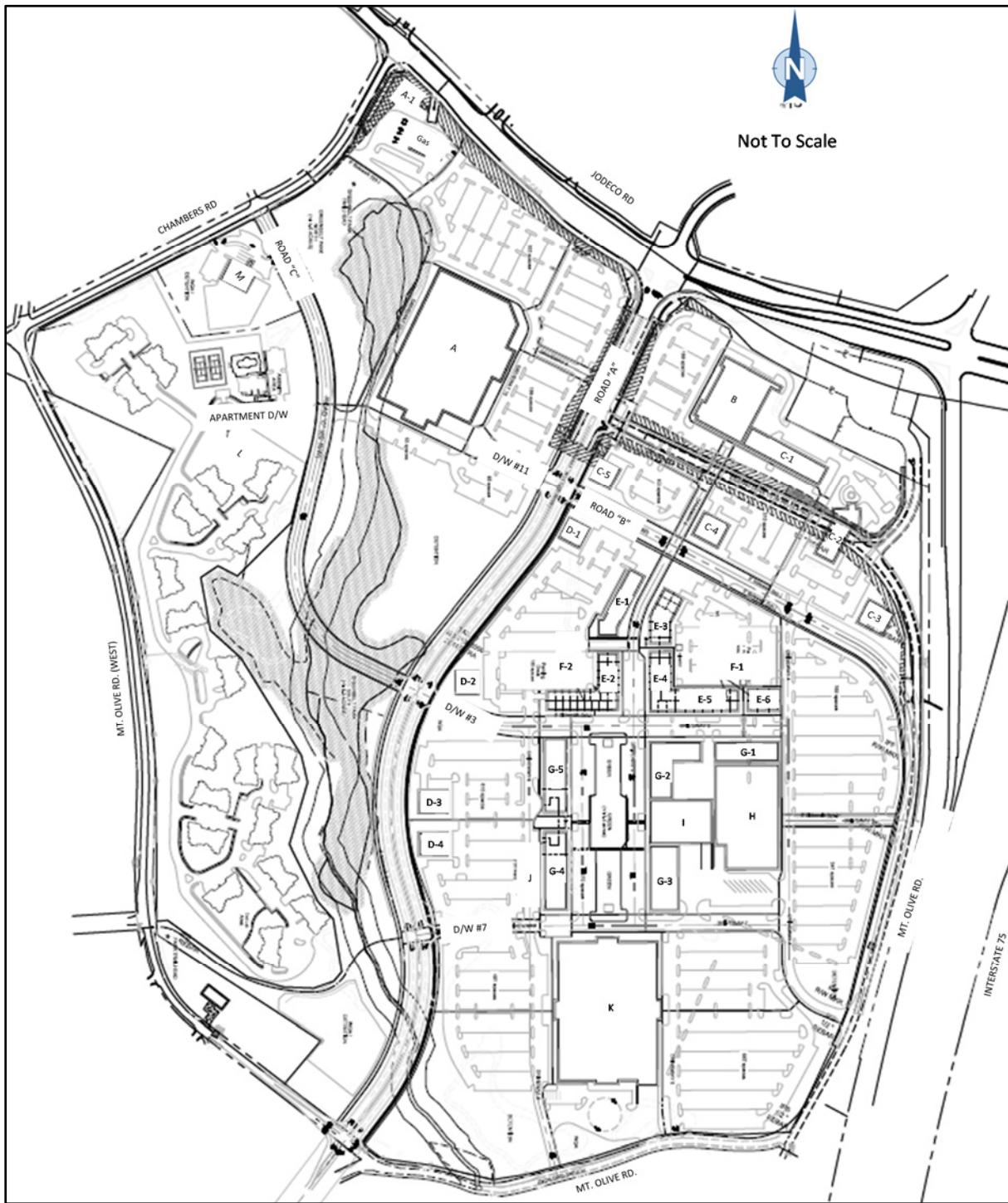


PROPOSED DEVELOPMENT

The proposed development is a multi-use development on 158 acres. The site plan, prepared by Falcon Design Consultants, is shown in Figure 4.

The site will result in the construction of a new roadway, labelled as Road A. This roadway will run through the center of the development and will connect on the north to Jodeco Road and to Mt. Olive Road on the south. There will also be connections to Chambers Road.

Figure 4: SITE PLAN



Proposed Land Uses

Table 1 summarizes the expected land uses in the development. The land uses are grouped together, with each group representing adjacent uses. The grouping will affect how generated traffic is treated in the assignment process (to be explained in greater detail in later sections).

Table 1: EXPECTED LAND USE

GROUPING	DESIGNATION	EXPECTED USE	SIZE	ITE LAND USE CATEGORY
I	A	Free Standing Discount Superstore	148 KSF	813
	A-1	Gas Station w/ Convenience Market	12 Fuel Pos.	945
II	B	Supermarket	42 KSF	850
	C-1	Specialty Retail	19.5 KSF	814
	C-2	Hotel	110 Rooms	310
	C-3	Quality Restaurant	9 KSF	931
	C-4	High Turnover Rest.	9 KSF	932
	C-5	Drive In Bank	6.4 KSF	912
III	D-1	Quality Restaurant	6.4 KSF	931
	D-2	High Turnover Rest.	6.4 KSF	932
	E-1	Specialty Retail	14 KSF	814
	E-2	High Turnover Rest.	6.4 KSF	932
	E-2	Specialty Retail	18.6 KSF	814
	E-3	Specialty Retail	15 KSF	814
	E-4	Specialty Retail	9.7 KSF	814
	E-5	High Turnover Rest.	6.4 KSF	932
	E-5	Specialty Retail	15.6 KSF	814
	E-6	Quality Restaurant	7.5 KSF	931
	F-1	Apartment	200 Units	220
	F-2	Apartment	115 Units	220
IV	D-3	Quality Restaurant	8 KSF	931
	D-4	Quality Restaurant	8 KSF	931
	G-1	Specialty Retail	14 KSF	814
	G-2	High Turnover Rest.	6.4 KSF	932
	G-2	Specialty Retail	15.6 KSF	814
	G-3	Quality Restaurant	6.4 KSF	931
	G-3	Specialty Retail	15.6 KSF	814
	G-4	Quality Restaurant	7 KSF	931
	G-4	Specialty Retail	11 KSF	814
	G-5	Quality Restaurant	7 KSF	931
	G-5	Specialty Retail	10.5 KSF	814
	H	Free Standing Discount Superstore	80 KSF	813
V	I	Department Store	30 KSF	875
	J	Hotel	120 Rooms	310
V	K	Free Standing Discount Superstore	148 KSF	813
VI	L	Apartment	300 Units	220
	M	Daycare Center	12 KSF	565

Inventory of Existing Geometry and Traffic Control

Figures 5A, 5B, and 5C summarize the existing roadway geometrics and traffic control on the roadways within the study area. A photographic inventory is provided in Appendix A.

Figure 5A: EXISTING CONDITIONS, JODECO RD

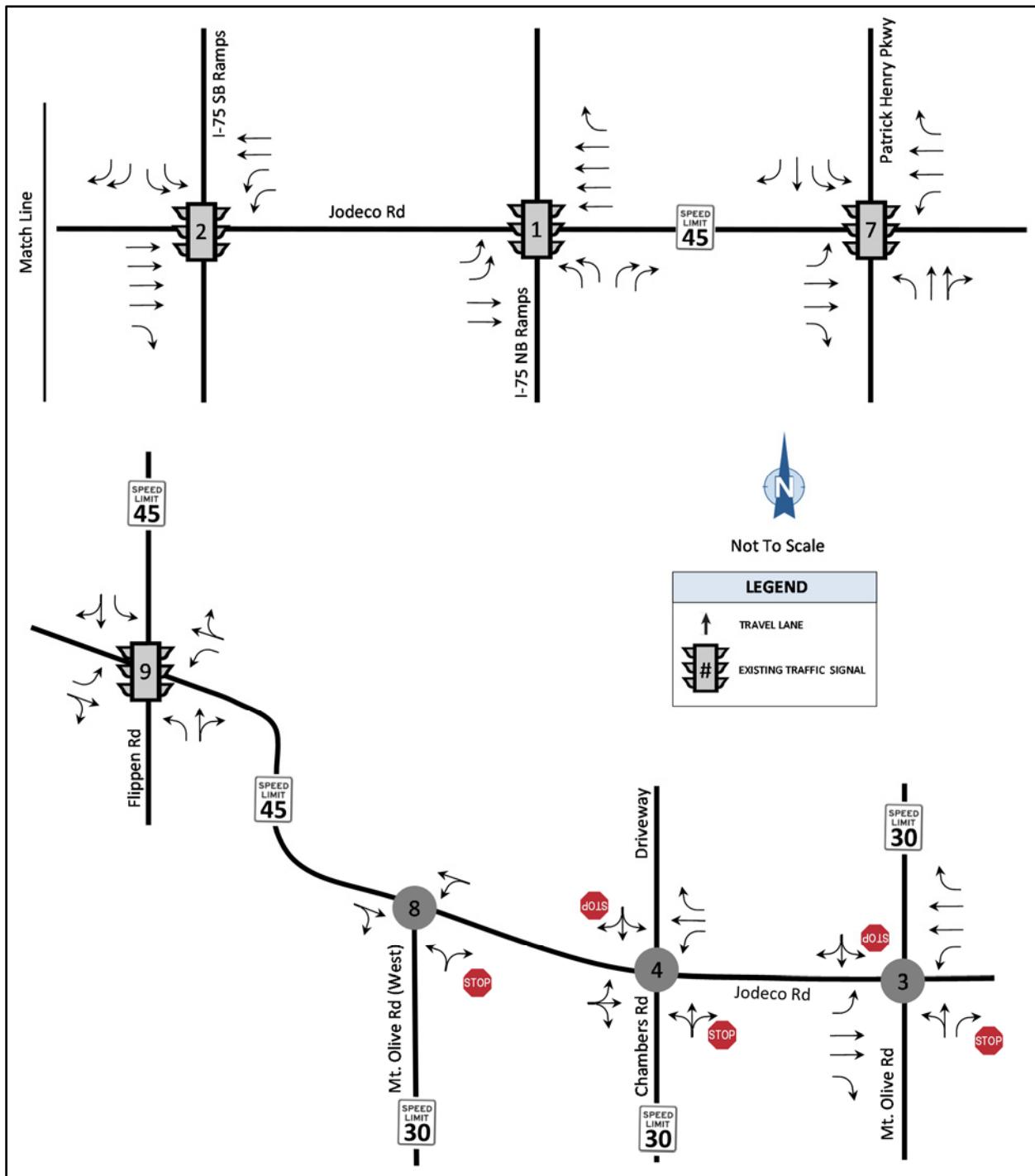


Figure 5B: EXISTING CONDITIONS, CHAMBERS RD & MT. OLIVE RD (WEST)

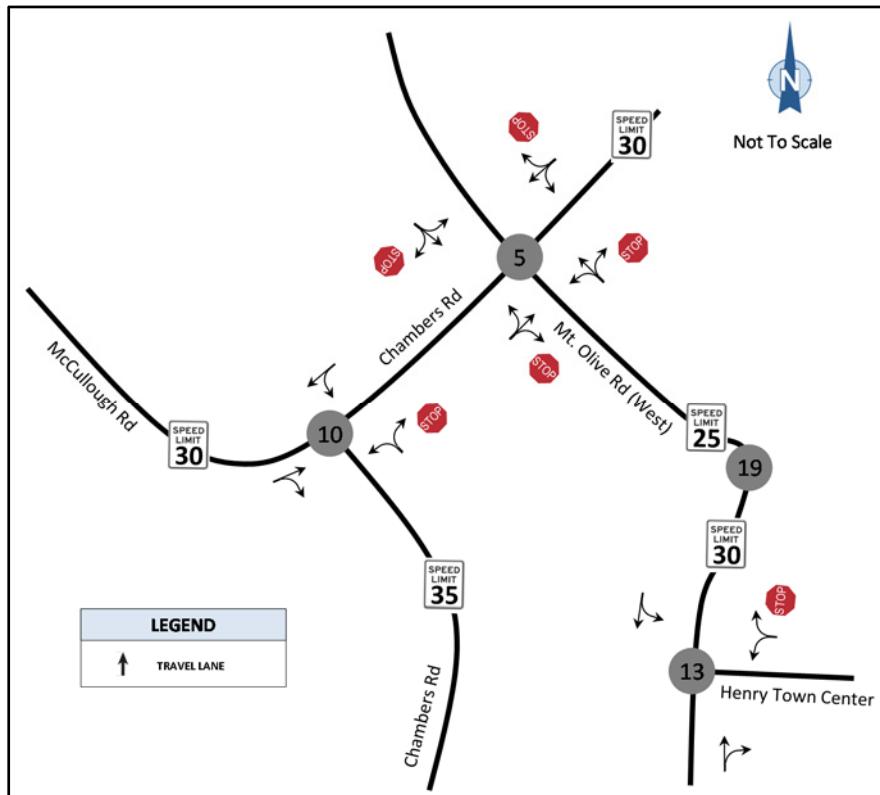
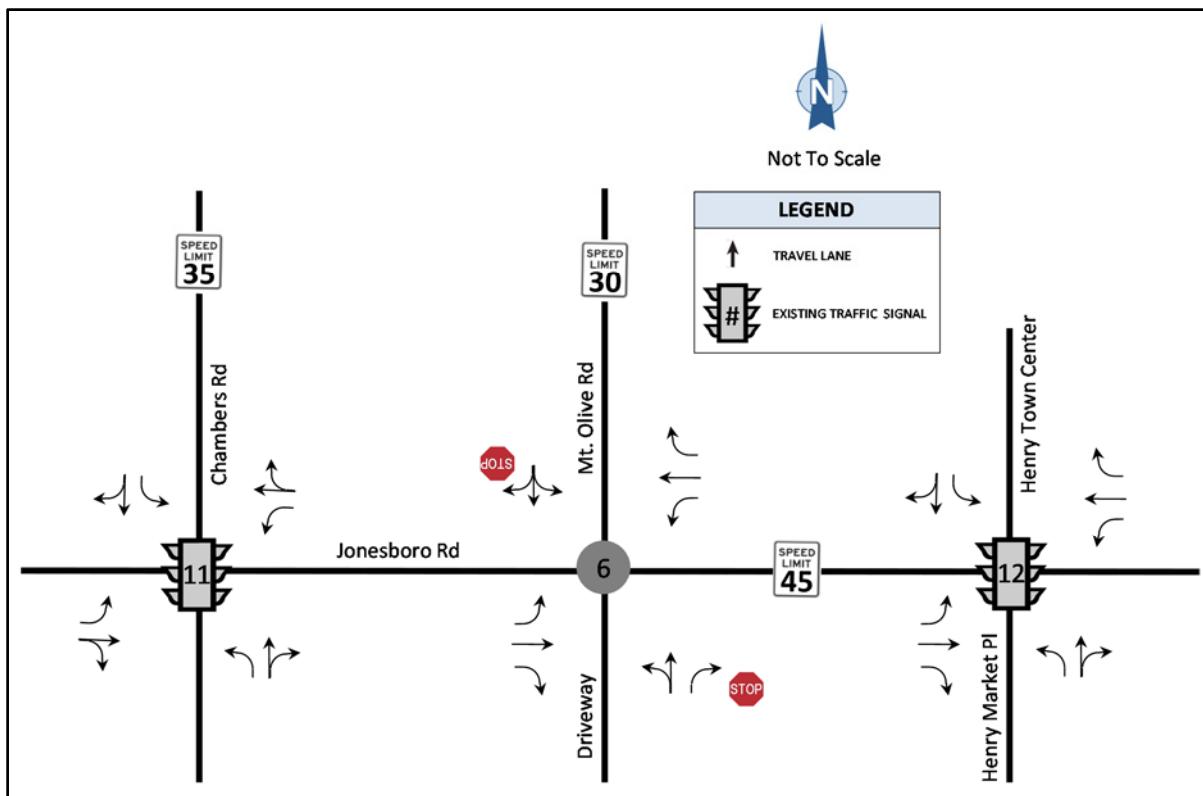


Figure 5C: EXISTING CONDITIONS, JONESBORO RD



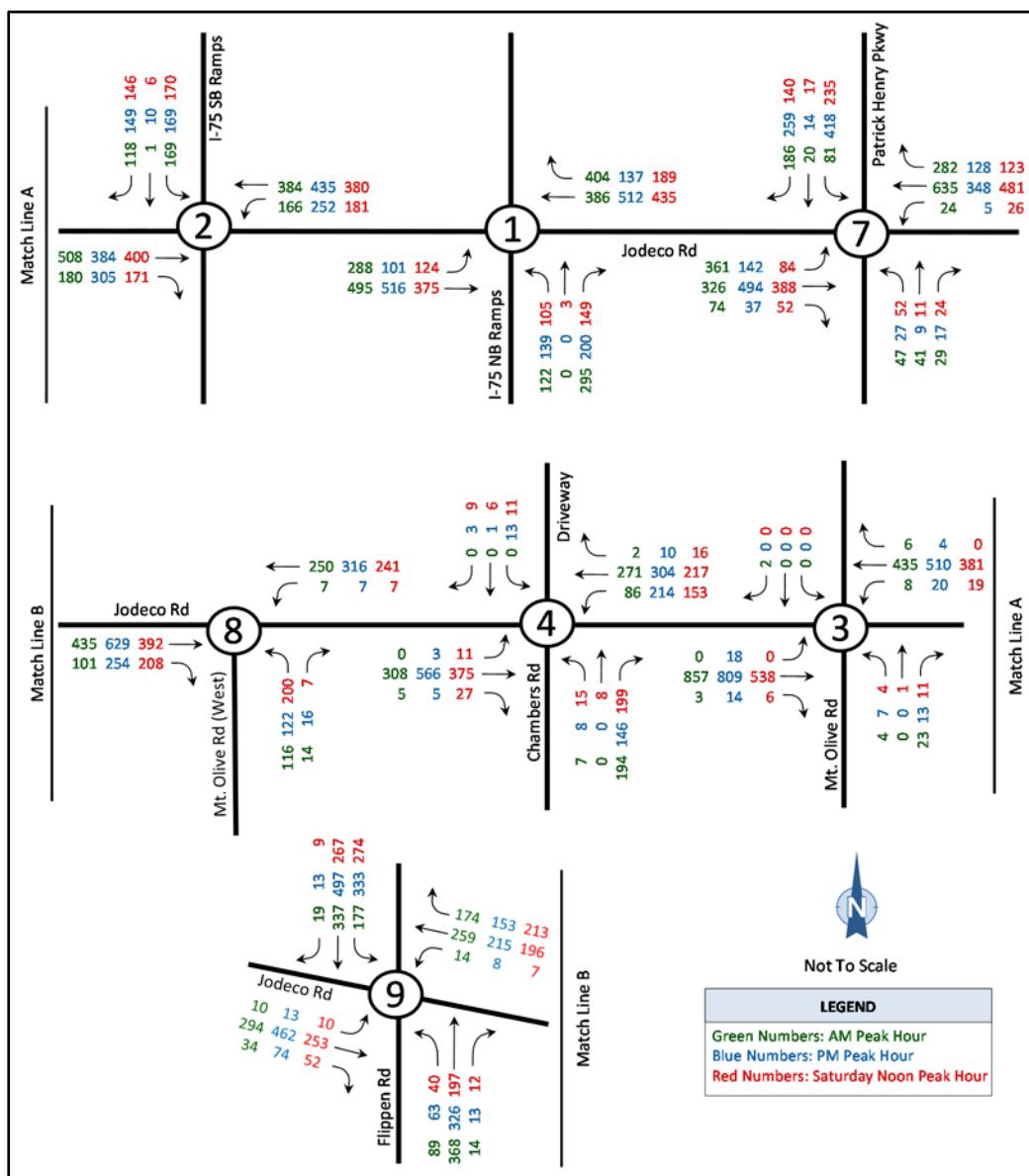
Existing Traffic Volumes

Turning movement volumes were collected during the first two weeks in March 2015 by Wilburn Engineering. Traffic volumes were collected during the AM and PM peak periods on a typical weekday and during the peak period on a Saturday.

Figures 6A, 6B, and 6C summarize the peak hour volumes for the collected periods. The AM Peak Hour is shown in green, the PM Peak Hour shown in blue, and the Saturday Noon Peak Hour is shown in red. The full traffic data reports are included in Appendix B.

Automatic traffic recorders (ATRs) were placed on Jonesboro and Jodeco Roads. The ATRs collected 24-hour speed, volume, and class traffic data. The full traffic data reports are included in Appendix C.

Figure 6A: EXISTING PEAK HOUR TRAFFIC VOLUMES, JODECO RD



**Figure 6B: EXISTING PEAK HOUR TRAFFIC VOLUMES,
CHAMBERS RD & MT. OLIVE RD (WEST)**

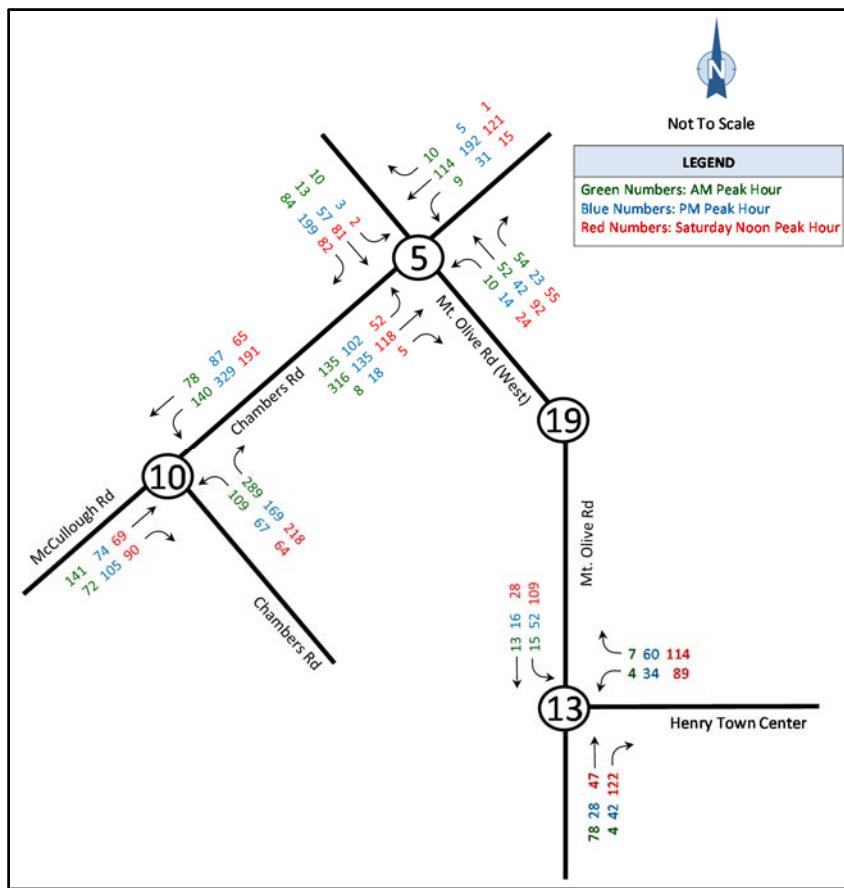
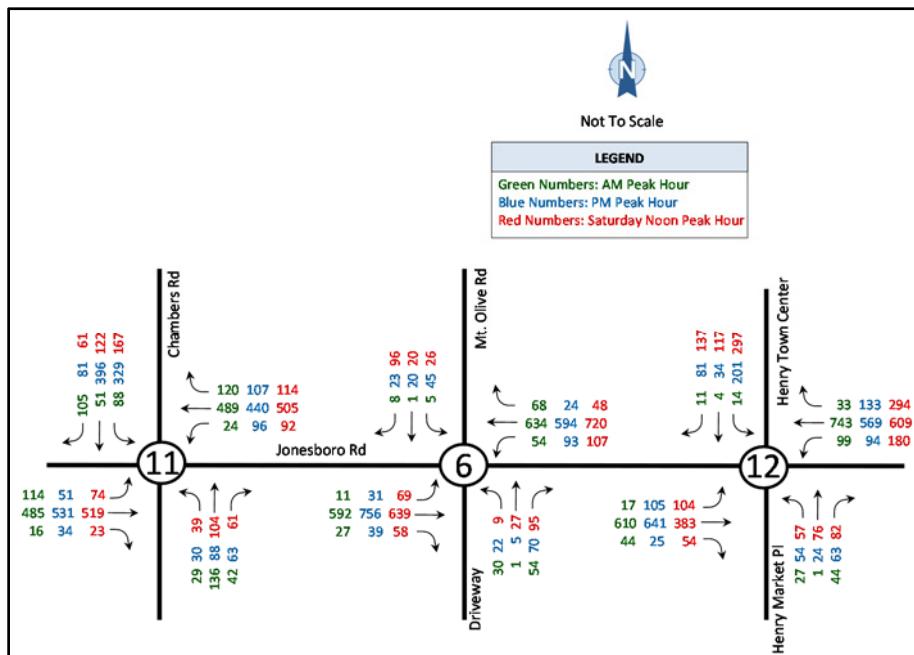


Figure 6C: EXISTING PEAK HOUR TRAFFIC VOLUMES, JONESBORO RD



PLANNED TRANSPORTATION IMPROVEMENTS

Regional Transportation Plan (RTP)

The Regional Transportation Plan adopted by the Atlanta Regional Commission in 2011 and updated in 2014 examines transportation needs of the 18 county region over the next 20 years. The RTP must be financially balanced to available funding.

The roadways within the study area do not have any projects included in the RTP. However, 3 projects are located on the periphery of the study area. There was another project (HE-920) that was included in the TSPLOST, which failed. There is no funding for this project. Figure 6 includes excerpts from the RTP of those projects.

Figure 7: RTP PROJECTS IN THE VICINITY

HE-110	JODECO ROAD WIDENING AND CAMPGROUND ROAD EXTENSION/REALIGNMENT AT MEADOWBROOK DRIVE TO PEACH DRIVE (WIDENING OF JODECO) AND FROM PEACH DRIVE TO BRANNAN ROAD (EXTENSION/REALIGNMENT)			Jurisdiction: Henry County	Existing: Var	Planned: 4	Length (mi.): 3.0	Network Year: 2020
N/A				Sponsor: Henry County				
Programmed				Service Type: Roadway / General Purpose Capacity	Analysis: In the Region's Air Quality Conformity Analysis			
Status	Year	Fund Type	Federal	State	Local	Bonds	Total	
PE	AUTH	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
ROW	AUTH	2013	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$2,000,000	\$0,000	\$2,000,000
CST		2014	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$16,000,000	\$0,000	\$16,000,000
			\$0,000	\$0,000	\$18,000,000	\$0,000	\$18,000,000	
HE-165B	PATRICK HENRY PARKWAY: SEGMENT 2 - WIDENING FROM JODECO ROAD TO EAGLES LANDING PARKWAY			Jurisdiction: Henry County	Existing: 2	Planned: 4	Length (mi.): 2	Network Year: 2040
N/A				Sponsor: Henry County				
Long Range				Service Type: Roadway / General Purpose Capacity	Analysis: In the Region's Air Quality Conformity Analysis			
Status	Year	Fund Type	Federal	State	Local	Bonds	Total	
ALL	LR 2031-2040	Local Jurisdiction/Municipality Funds	\$0,000	\$0,000	\$12,700,000	\$0,000	\$12,700,000	
			\$0,000	\$0,000	\$12,700,000	\$0,000	\$12,700,000	
HE-920B	SR 920 (MCDONOUGH ROAD / JONESBORO ROAD) WIDENING FROM US 19/41 (TARA BOULEVARD) IN CLAYTON COUNTY TO I-75 SOUTH IN HENRY COUNTY			Jurisdiction: Regional - Southeast	Existing: 2	Planned: 4	Length (mi.): 7.4	Network Year: 2030
342970-				Sponsor: GDOT				
Programmed				Service Type: Roadway / General Purpose Capacity	Analysis: In the Region's Air Quality Conformity Analysis			
Status	Year	Fund Type	Federal	State	Local	Bonds	Total	
PE	AUTH	2006 STP - Statewide Flexible (GDOT)	\$1,320,000	\$330,000	\$0,000	\$0,000	\$1,650,000	
PE	2014 STP - Statewide Flexible (GDOT)		\$400,000	\$100,000	\$0,000	\$0,000	\$500,000	
ROW	2016 STP - Statewide Flexible (GDOT)		\$5,994,552	\$1,498,638	\$0,000	\$0,000	\$7,493,190	
ROW	2017 STP - Statewide Flexible (GDOT)		\$8,659,457	\$2,164,864	\$0,000	\$0,000	\$10,824,321	
UTL	LR 2020-2030 General Federal Aid 2020-2040		\$3,491,985	\$872,996	\$0,000	\$0,000	\$4,364,981	
CST	LR 2020-2030 General Federal Aid 2020-2040		\$29,485,098	\$7,371,275	\$0,000	\$0,000	\$36,856,373	
			\$49,351,092	\$12,337,773	\$0,000	\$0,000	\$61,688,865	

Transportation Improvement Program (TIP)

The Transportation Improvement Program allocates federal funds for transportation for the near term. The TIP must be consistent with the RTP and be financially constrained.

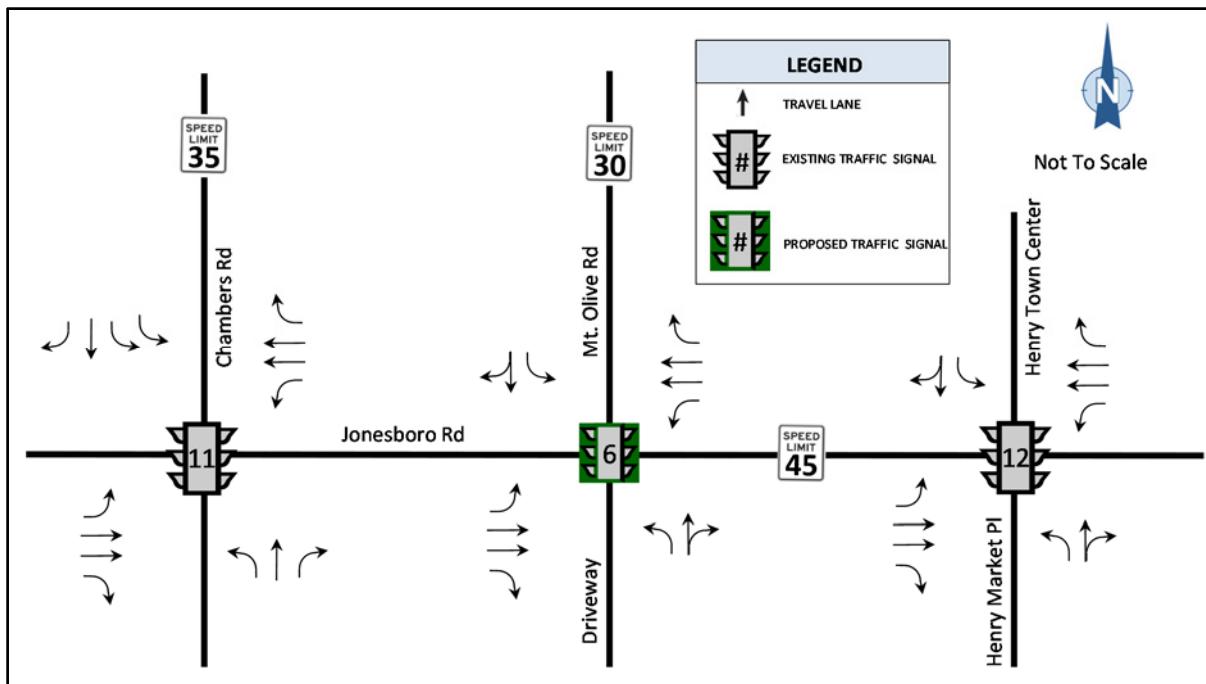
The TIP includes HE-110 but no federal funds are allocated to this project. The TIP includes HE-920B and has \$69.484 M in State and Federal Funds. PE is authorized with construction slated for LR 2018-2040.

GDOT Construction Work Program (CWP)

GDOT's CWP includes HE-920B (Jonesboro Rd). The project, PI No. 342970 shows that PE is authorized with ROW for 2018 and construction in 2022.

Figure 8 illustrates the travel lanes that will be available at the Jonesboro Road intersections after the completion of Project P.I. No. 342970. Traffic signal control is proposed for the intersection of Mt. Olive Road.

Figure 8: CONDITIONS ON JONESBORO RD AFTER PI No. 342970



BACKGROUND TRAFFIC PROJECTIONS

Background traffic was developed to show the growth in traffic that would occur without the development. The estimated completion year of the development is 2025.

A Background growth rate of 1% was established in the Letter of Understanding from the Georgia Regional Transportation Authority (GRTA).

The exponential equation used to calculate the future volumes was:

$$\text{Future Volume} = \text{Present Volume} (1+r)^n$$

The number of years to the horizon year (2025) is 10. The growth factor used to develop Background volumes is 1.1.

The Background traffic projections were rounded to the nearest 5.

Figures 9A, 9B, and 9C summarize the 2025 Background peak hour volumes. The AM Peak Hour is shown in green, the PM Peak Hour shown in blue, and the Saturday Noon Peak Hour is shown in red.

Figure 9A: 2025 BACKGROUND PEAK HOUR TRAFFIC VOLUMES, JODECO RD

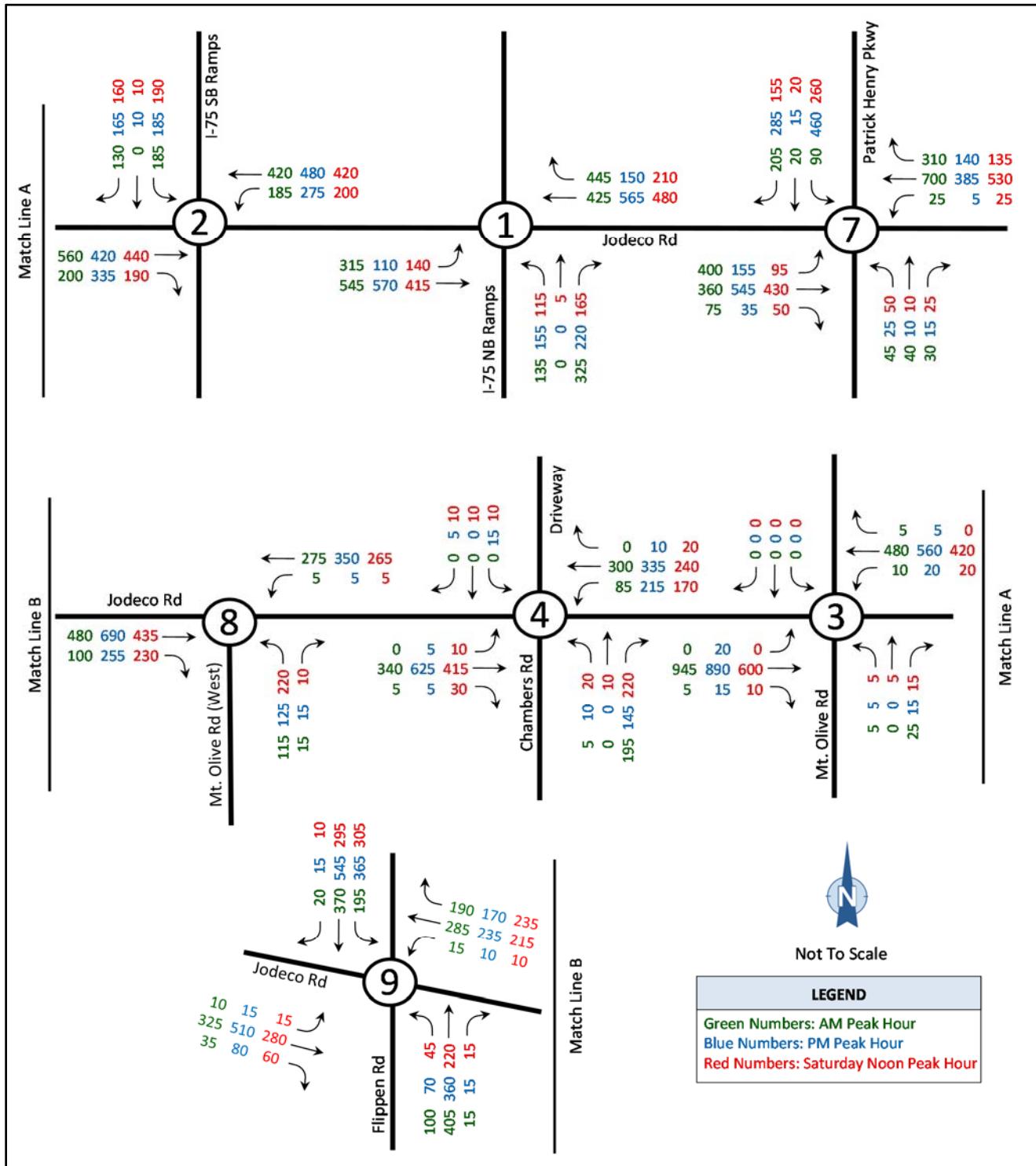


Figure 9B: 2025 BACKGROUND PEAK HOUR TRAFFIC VOLUMES,
CHAMBERS RD & MT. OLIVE RD (WEST)

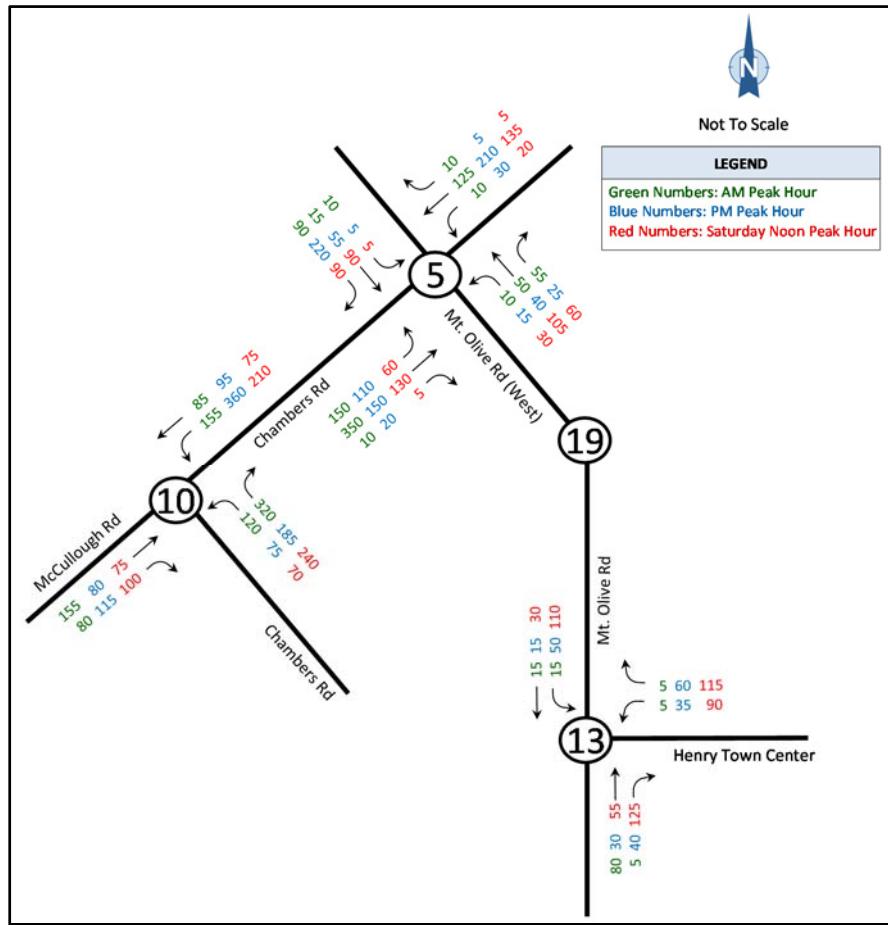
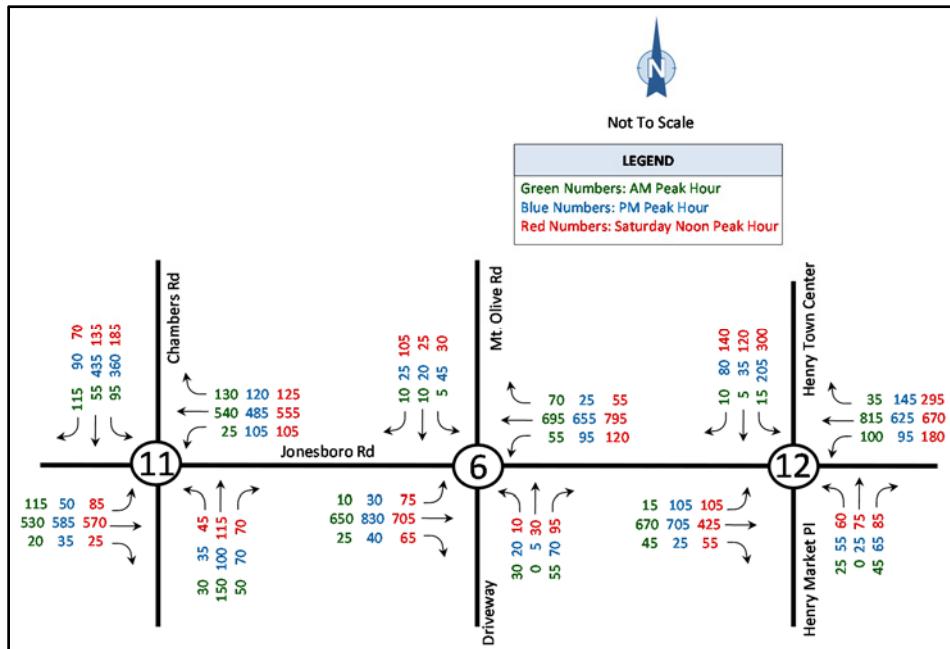


Figure 9C: 2025 BACKGROUND PEAK HOUR TRAFFIC VOLUMES, JONESBORO RD



Trip Generation

Estimates of traffic volumes expected to be generated by the proposed uses were calculated using the trip rates obtained from the ITE publication *Trip Generation*, 9th Edition and the *Trip Generation Handbook*, 2nd Edition. The Trip Generation Program from Trafficware was used to perform the trip generation calculations. The trip generation reports are provided in Appendix D.

Internal capture and pass-by reductions were accounted for by the Trip Generation Program in accordance with the Trip Generation Handbook. The internal capture was done in a two-step process, first the internal capture was calculated within each grouping and then the internal capture was calculated between groupings.

In accordance with the GRTA Technical Guidelines for DRI Review, total pass-by trip reductions must to be limited to 15% of the adjacent roadway's traffic volume. The estimated pass-by trips for the weekday AM Peak Hour are lower than 15% of the adjacent roadway's traffic volume. The weekday PM Peak Hour and Saturday Noon Peak Hour pass-by trips had to be reduced so that it would not exceed 15% of the adjacent roadway's traffic volume. Tables 2 and 3, on the following pages, summarize the trip generation estimates. Table 2 summarizes the trip generation estimates by grouping. Table 3 summarizes the trip generation estimates by land use code.

Table 3: ESTIMATED TRIP GENERATION SORTED BY LAND USE CODE

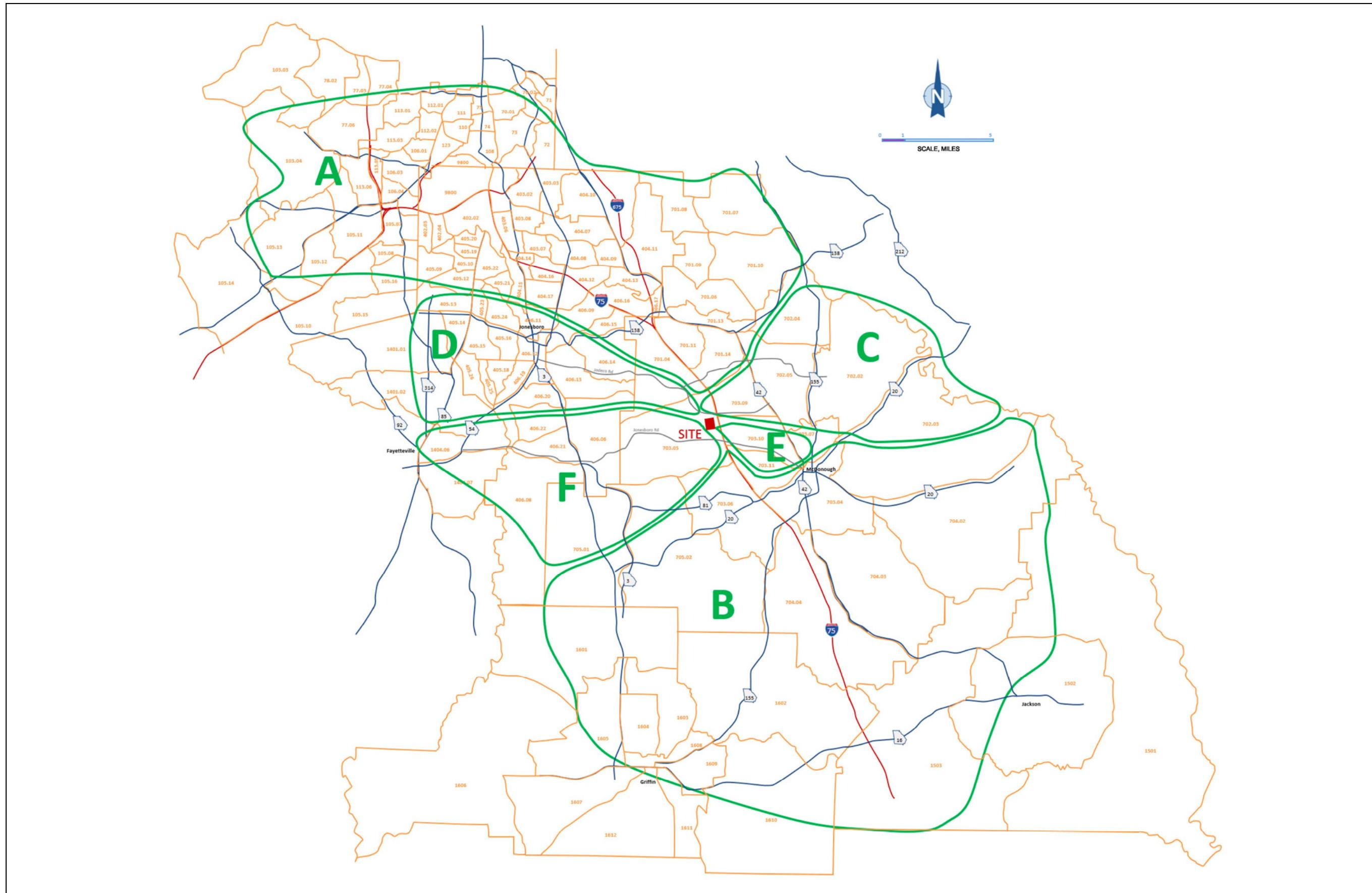
ITE Code	Land Use	Size	Unit	DAILY 2-WAY TRIPS	AM Peak Hour			PM Peak Hour			Sat Peak Hour			
					Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	
220	Apartments	615	du	4098	313	98	215	392	255	137	309	155	154	
310	Hotel	230	rooms	1591	122	72	50	138	71	67	167	94	73	
565	Daycare Center	12	ksf	889	146	77	69	148	70	78	20	13	7	
813	Free Standing Discount Superstore	376	ksf	19082	696	389	307	1636	803	833	2121	1062	1059	
814	Specialty Retail	159.1	ksf	10186	604	306	298	1083	544	539	1083	544	539	
850	Supermarket	42	ksf	4203	143	89	54	410	209	201	447	228	219	
875	Department Store	30	ksf	686	17	11	6	56	29	27	100	53	47	
912	Drive-In Bank	6.4	ksf	948	77	44	33	156	78	78	168	86	82	
931	Quality Restaurant	52.9	ksf	4761	42	22	20	395	265	130	573	338	235	
932	High Turnover Restaurant	41	ksf	5214	442	243	199	404	243	161	577	307	270	
945	Gas Station	12	fp	1953	122	61	61	162	81	81	81	81	162	
				<i>Sub-Total</i>	53,611	2724	1412	1312	4980	2648	2332	5646	2961	2847
				<i>Internal Capture</i>	-9615	-376	-188	-188	-1166	-583	-583	-1340	-670	-670
				<i>External Trips</i>	43,996	2348	1224	1124	3814	2065	1749	4306	2291	2177
				<i>Less Pass-By Trips</i>	-9,679	-76	-38	-38	-882	-441	-441	-756	-378	-378
				TOTAL NET NEW TRIPS	34,317	2272	1186	1086	2932	1624	1308	3550	1913	1799

Trip Distribution for New Trips

In order to assign new trips to the street network, it is necessary to estimate a distribution pattern to define the origin and destination of the new trips. A market analysis was conducted to provide a basis for trip distribution.

The majority of new trip making associated with retail and office land use is home-based on one end. Since most of the land use in this development is retail or office, the distribution of the population within a reasonable driving distance of the site was used to assign newly generated trips. Figure 10 shows the market area superimposed over the census tracts.

The market area has also been divided into six sectors, (A through F), that correspond to the travel routes to and from the site. The distribution of the market area within the sectors establishes the basis for distributing the generated traffic. The market area, as shown in Figure 10, is defined by the distance that can be travelled to and from the site within approximately 30 minutes.



Jodeco Crossing| DRI #2504 | Transportation Analysis

Figure 10: MARKET AREA

The population that lies within each sector was determined as shown in Table 4.

Table 4: MARKET AREA DISTRIBUTION

SECTOR	TRACT	COUNTY	POP.	% WITHIN	POP.	SECTOR	% OF
			OF TRACT	SECTOR	WITHIN	POP.	MARKET
A	70.01	Fulton	4380	100	4380		
	70.02		2240	38	851		
	72		1713	100	1713		
	73		7152	100	7152		
	74		2894	100	2894		
	75		3531	100	3531		
	77.03		3590	21	754		
	77.04		5104	19	970		
	77.06		8625	100	8625		
	78.02		8925	6	536		
	103.03		9247	13	1202		
	103.04		12516	74	9262		
	105.07		7690	100	7690		
	105.08		3982	100	3982		
	105.1		16213	25	4053		
	105.11		8102	100	8102		
	105.12		6556	89	5835		
	105.13		13019	100	13019		
	105.14		11542	6	693		
	105.16		8020	53	4251		
	106.01		3250	100	3250		
	106.03		3490	100	3490		
	106.04		2941	100	2941		
	108		6535	100	6535		
	110		3171	100	3171		
	111		2144	100	2144		
	112.01		3485	100	3485		
	112.02		5519	100	5519		
	113.01		4766	100	4766		
	113.03		8955	100	8955		
	113.05		4471	100	4471		
	113.06		2636	100	2636		
	123		2391	100	2391		
	9800		0	100	0		
Clayton	402.02	Clayton	2874	100	2874		
	402.03		3028	100	3028		
	402.04		3358	100	3358		
	403.02		4444	100	4444		
	403.03		6952	100	6952		
	403.06		3415	100	3415		
	403.07		4789	100	4789		
	403.08		5136	100	5136		
	404.07		3497	100	3497		
	404.08		7818	100	7818		
	404.09		6262	100	6262		
	404.1		7350	100	7350		
	404.11		11850	100	11850		
	404.12		7360	100	7360		
	404.13		8254	100	8254		
	404.14		1637	100	1637		
	404.15		6178	100	6178		
	404.16		4139	100	4139		
	404.17		4169	100	4169		
	405.09		4251	100	4251		
	405.1		3666	100	3666		
	405.12		4655	100	4655		
	405.19		4359	100	4359		
	405.2		3503	100	3503		
	405.21		3107	100	3107		
	405.22		4451	100	4451		
	405.23		3798	27	1025		
	405.24		7668	17	1304		
	406.09		6036	65	3923		
	406.14		4975	27	1343		
	406.15		2221	100	2221		
	406.16		7593	100	7593		
	406.17		1389	100	1389		

SECTOR	TRACT	COUNTY	POP.	% WITHIN	POP.	SECTOR	% OF
			OF TRACT	SECTOR	WITHIN	POP.	MARKET
701.04			12295	55	6762		
701.06			5416	100	5416		
701.07			7105	100	7105		
701.08		Henry	4651	100	4651		
701.09			3165	100	3165		
701.1			7604	100	7604		
701.11			8287	100	8287		
701.13			3697	100	3697		
701.14			5414	100	5414		
702.04			4222	24	1013		
702.05			10450	1	105		
TOTAL SECTOR A						345768	52.5

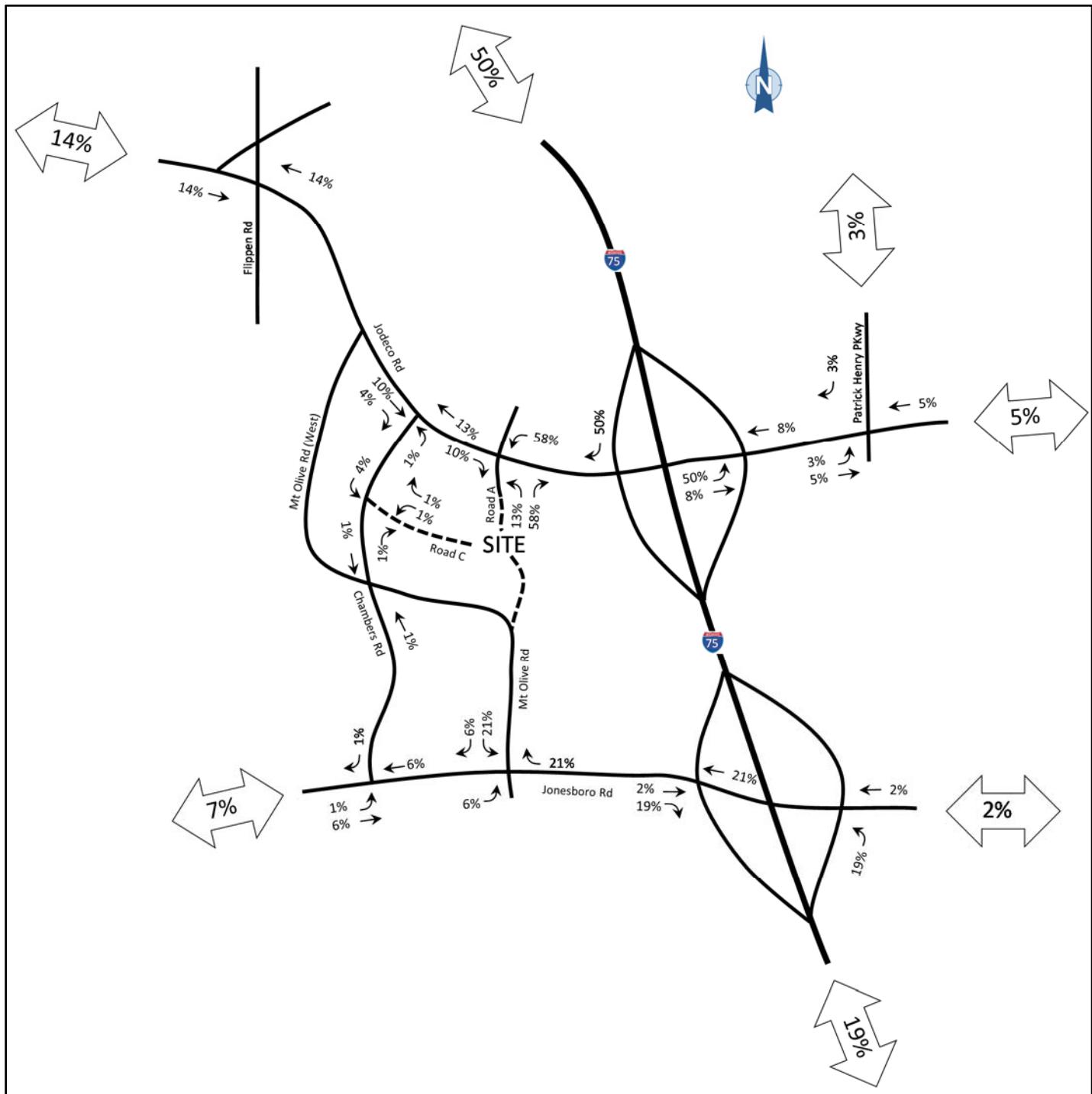
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Table 4: MARKET AREA DISTRIBUTION (Continued)

SECTOR	TRACT	COUNTY	POP. OF TRACT	% WITHIN SECTOR	POP. WITHIN	SECTOR POP.	% OF MARKET	SECTOR	TRACT	COUNTY	POP. OF TRACT	% WITHIN SECTOR	POP. WITHIN	SECTOR POP.	% OF MARKET	
B	702.03		14930	58	8659			D	405.13	Clayton	5380	90	4842			
	703.04		11755	100	11755				405.14		6929	100	6929			
	703.06	Henry	9554	93	8885				405.15		7711	100	7711			
	703.11		11789	59	6956				405.16		5452	100	5452			
	704.02		12905	100	12905				405.18		5299	100	5299			
	704.03		10576	100	10576				405.23		3140	73	2292			
	704.04		7040	100	7040				405.24		7699	83	6390			
	705.01		6395	39	2494				405.25		2867	100	2867			
	705.02		13667	84	11480				405.26		5522	100	5522			
	1601	Spalding	6295	66	4155				406.06		3409	18	614			
	1602		5665	100	5665				406.09		6597	35	2309			
	1603		3175	100	3175				406.11		6325	100	6325			
	1604		5999	100	5999				406.12		6849	100	6849			
	1605		7176	51	3660				406.13		7844	100	7844			
	1608		4005	100	4005				406.14		4910	73	3584			
	1609		2236	100	2236				406.19		3055	100	3055			
	1610		5568	50	2784				406.2		3123	80	2498			
	1501	Butts	8137	9	732				406.22		7278	28	2038			
	1502		7918	32	2534				701.04	Henry	11344	45	5105			
	1503		7616	89	6778				703.05		8634	8	691			
	TOTAL SECTOR B				122473		18.6		1401.01	Fayette	7362	29	2135			
									1401.02		5561	65	3615			
									TOTAL SECTOR D					93966	14.2	
SECTOR	TRACT	COUNTY	POP. OF TRACT	% WITHIN SECTOR	POP. WITHIN	SECTOR POP.	% OF MARKET	SECTOR	TRACT	COUNTY	POP. OF TRACT	% WITHIN SECTOR	POP. WITHIN	SECTOR POP.	% OF MARKET	
C	702.02	Henry	11350	100	11350			E	703.07	Henry	3979	55	2188			
	702.03		15153	42	6364				703.1		4223	100	4223			
	702.04		4523	76	3437				703.11		10774	41	4417			
	702.05		10390	99	10286				TOTAL SECTOR E					10828	1.6	
	703.05		8634	8	691				SECTOR	TRACT	COUNTY	POP. OF TRACT	% WITHIN SECTOR	POP. WITHIN	SECTOR POP.	% OF MARKET
	703.09		7660	100	7660				F	703.05	Henry	8260	84	6938		
	703.07		3979	45	1791					703.06		8860	7	620		
	TOTAL SECTOR C				41579		6.3			705.01		6485	61	3956		
										705.02		12772	16	2044		
										406.06	Clayton	3409	82	2795		
										406.08		10602	57	6043		
										406.2		3123	20	625		
										406.21		7764	100	7764		
										406.22		7278	72	5240		
										1401.02	Fayette	5561	35	1946		
										1404.06		3474	100	3474		
										1404.07		7791	45	3506		
										TOTAL SECTOR F					44951	6.8
										TOTAL MARKET AREA					659565	100

Figure 11 shows the resulting trip distribution pattern that was used to assign the new generated traffic for the development.

Figure 11: TRIP DISTRIBUTION PATTERN FOR NEW TRIPS



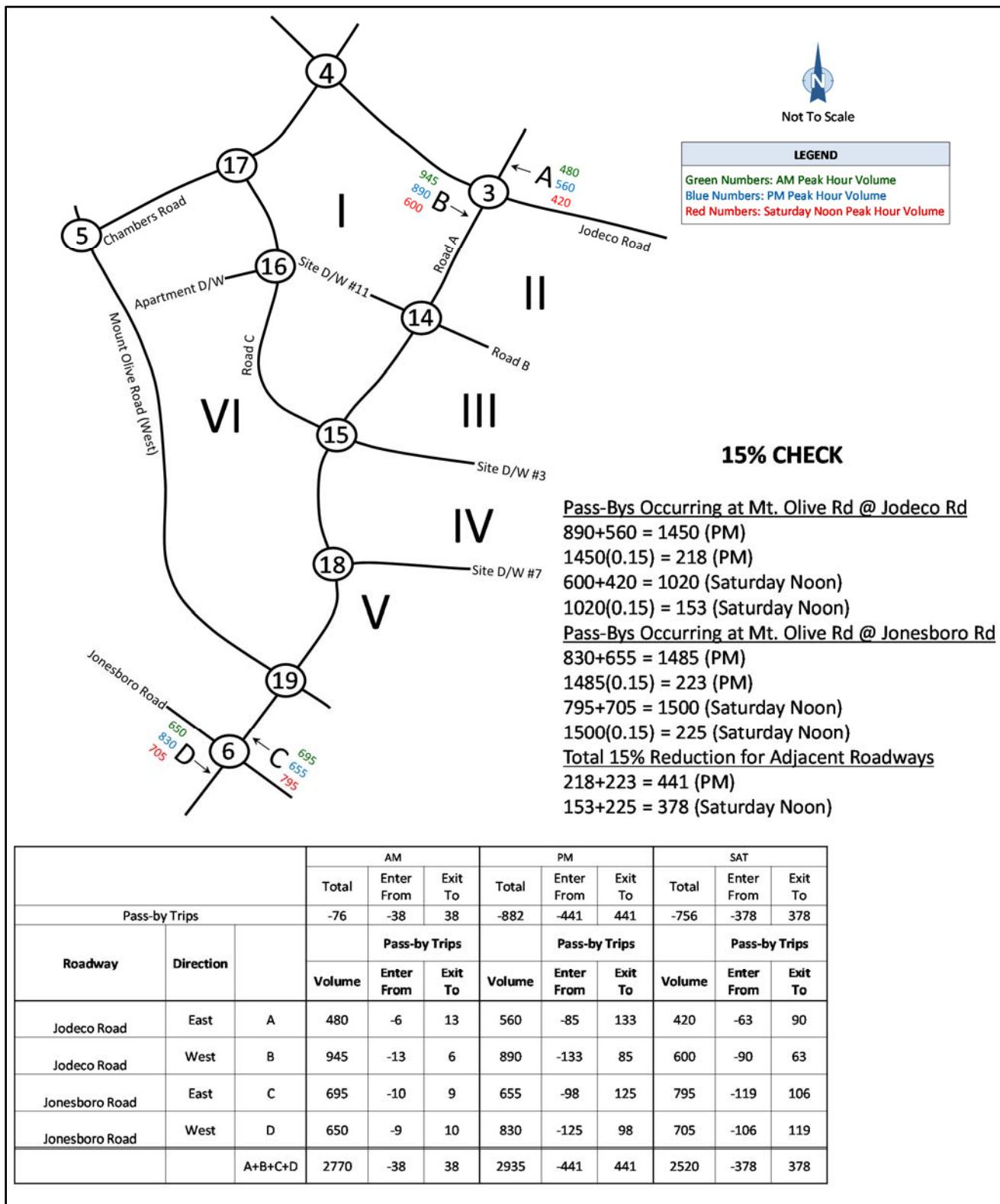
Trip Distribution for Pass-By Trips

All of the pass-by trips were assumed to occur at the intersections of Road A at Jodeco Road and Mt. Olive Road at Jonesboro Road.

The total pass-by trips were assigned to the intersections listed above in the same proportions of the total volume occurring at each of the two intersections. The method used for the assignment of pass-by trips is shown graphically in Figure 12 on the following page. The calculations are also shown in Figure 12 on the following page. The letters (A-D) shown in Figure 12 on the following page correspond to the through traffic occurring at the two intersections where pass-by traffic will be attracted into the development.

Figure 12 on the following page also shows the check to insure that the pass-by trips do not exceed 15% of the pass-by stream.

Figure 12: PASS-BY ASSIGNMENT



Traffic Assignment of New Trips

The generated traffic was assigned to the road network in accordance with the market area distribution. Figures 13A, 13B, 13C, and 13D show the estimated new trips.

Figure 13A: ASSIGNMENT OF NEW TRIPS, JODECO RD

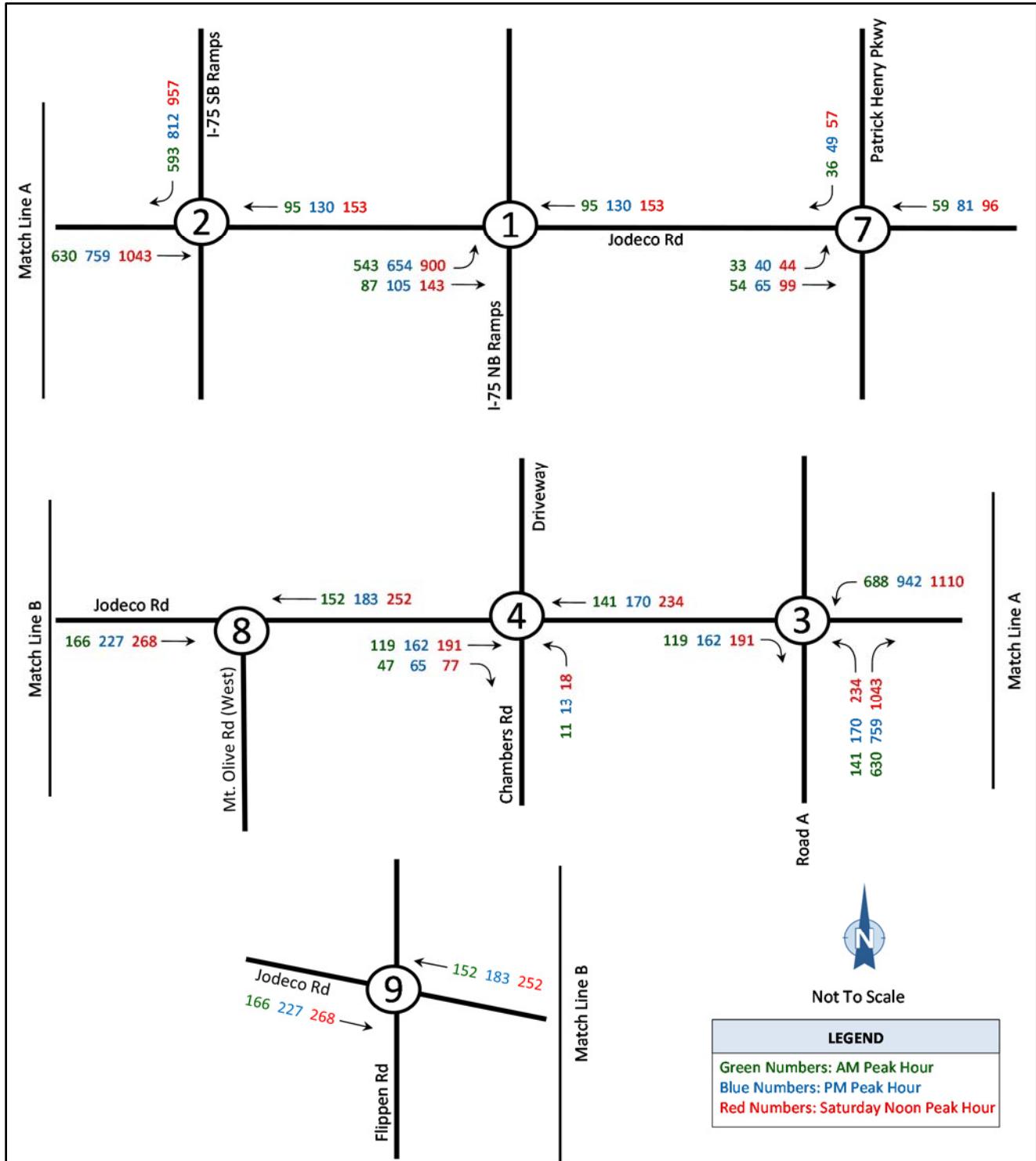


Figure 13B: ASSIGNMENT OF NEW TRIPS, INTERNAL TO THE SITE

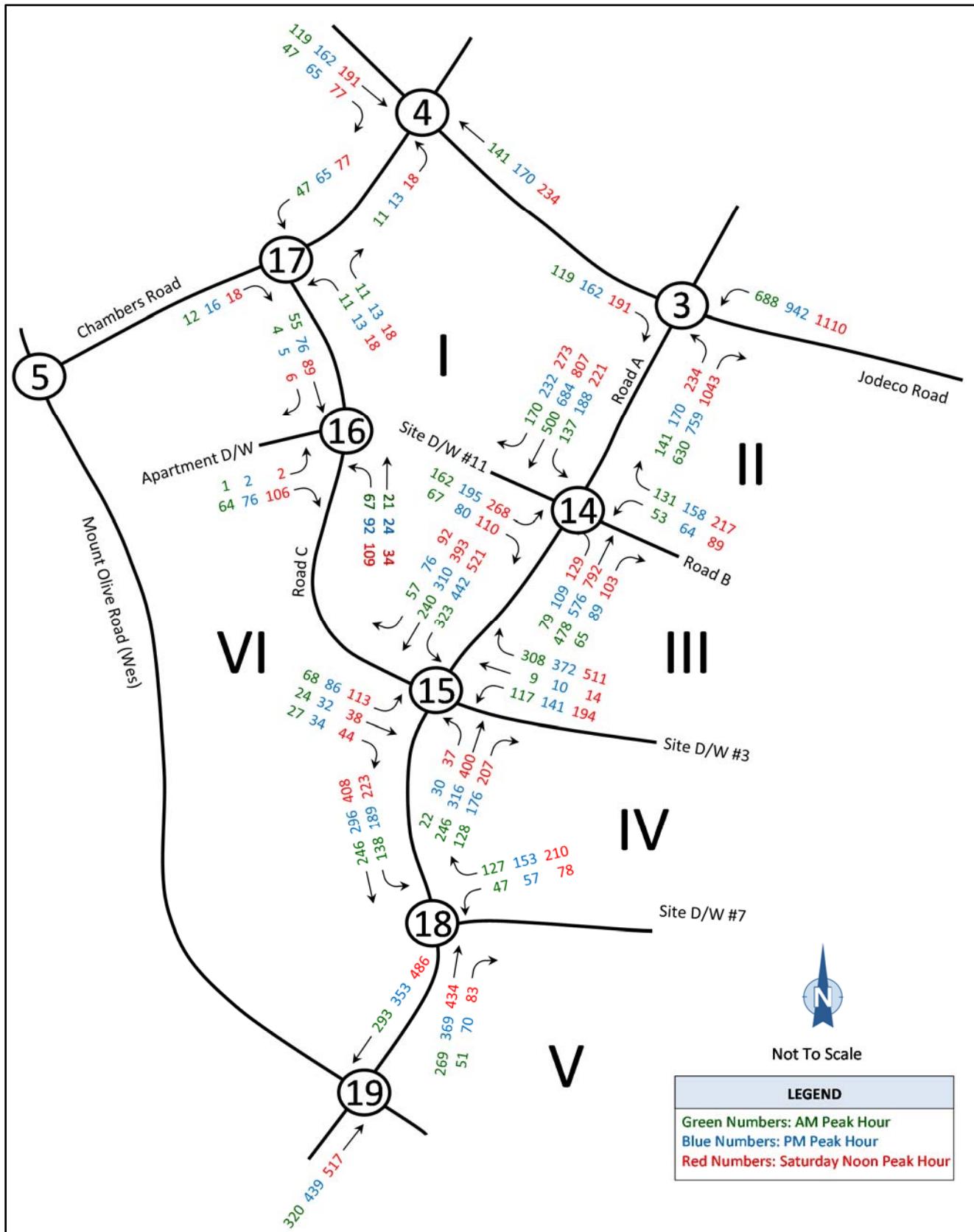


Figure 13C: ASSIGNMENT OF NEW TRIPS, CHAMBERS RD & MT. OLIVE RD (WEST)

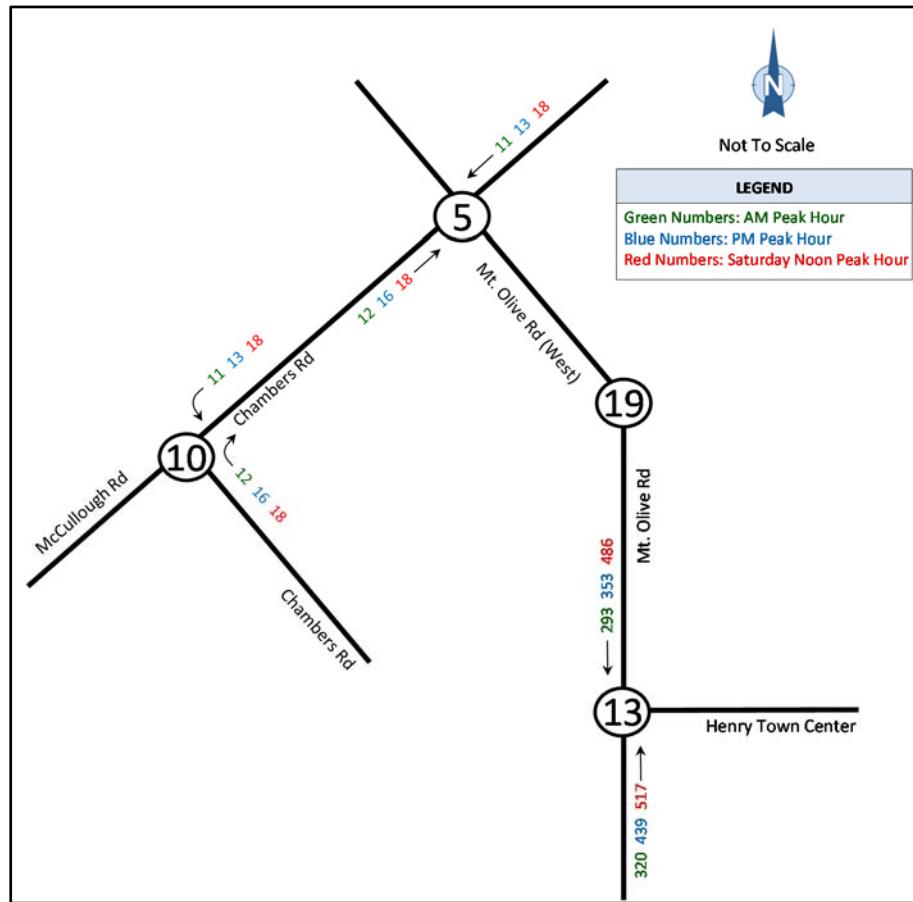
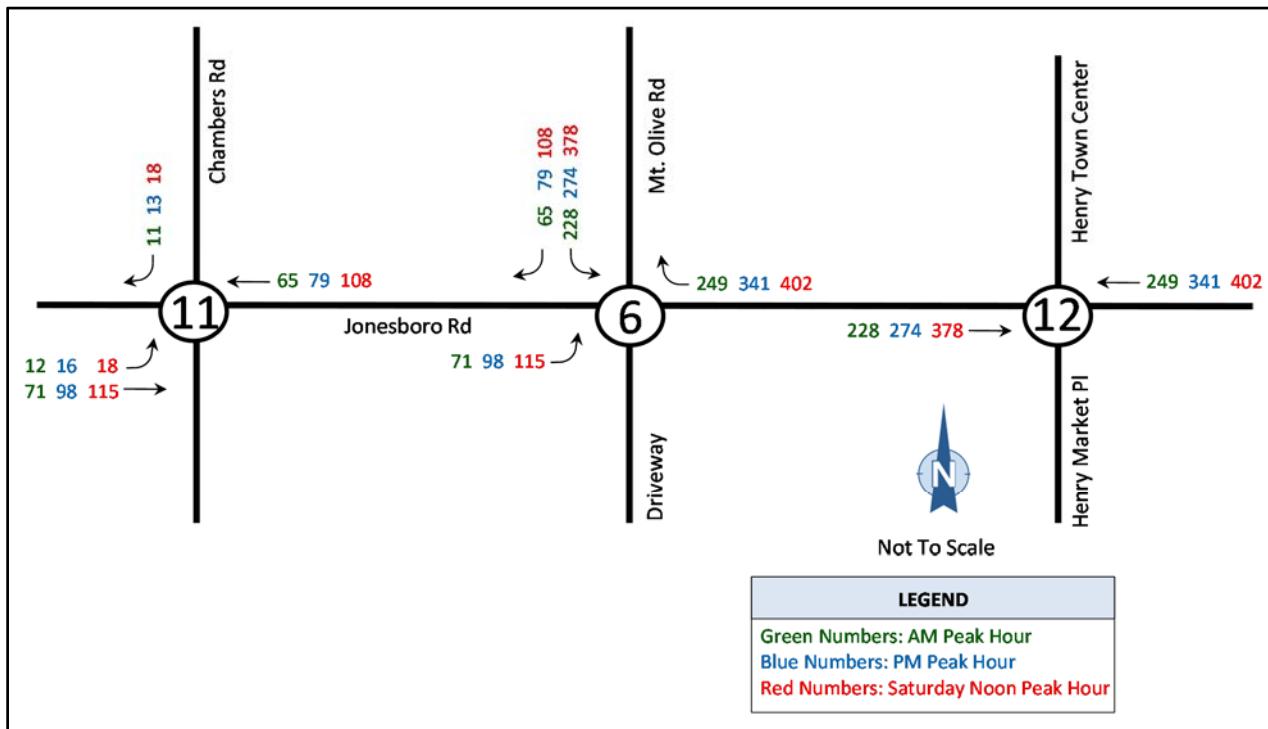


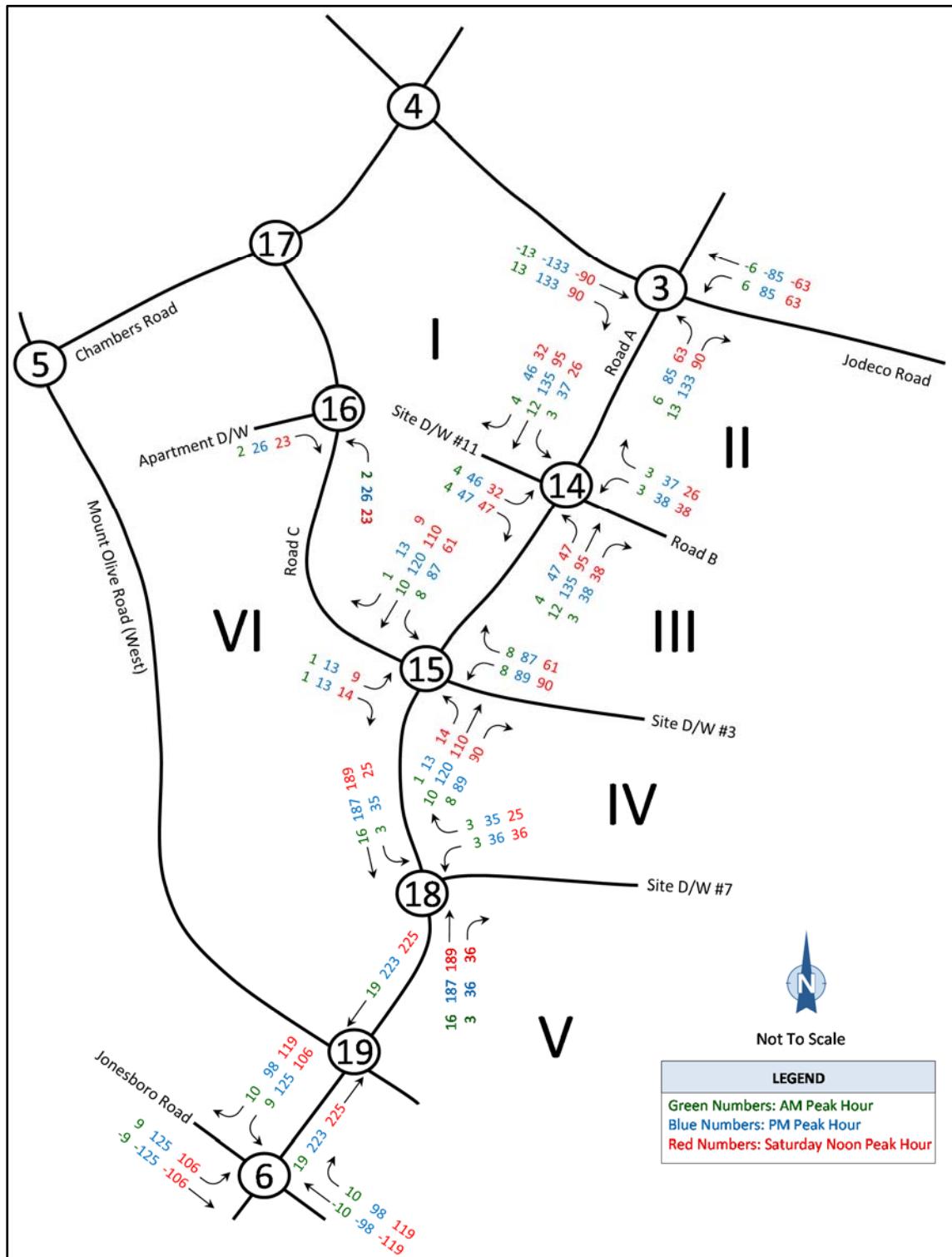
Figure 13D: ASSIGNMENT OF NEW TRIPS, JONESBORO RD



Traffic Assignment of Pass-By Trips

Figure 14 shows the assigned pass-by trips. The trips shown with a negative sign (-) represent the pass-by trips to be diverted from the through traffic stream.

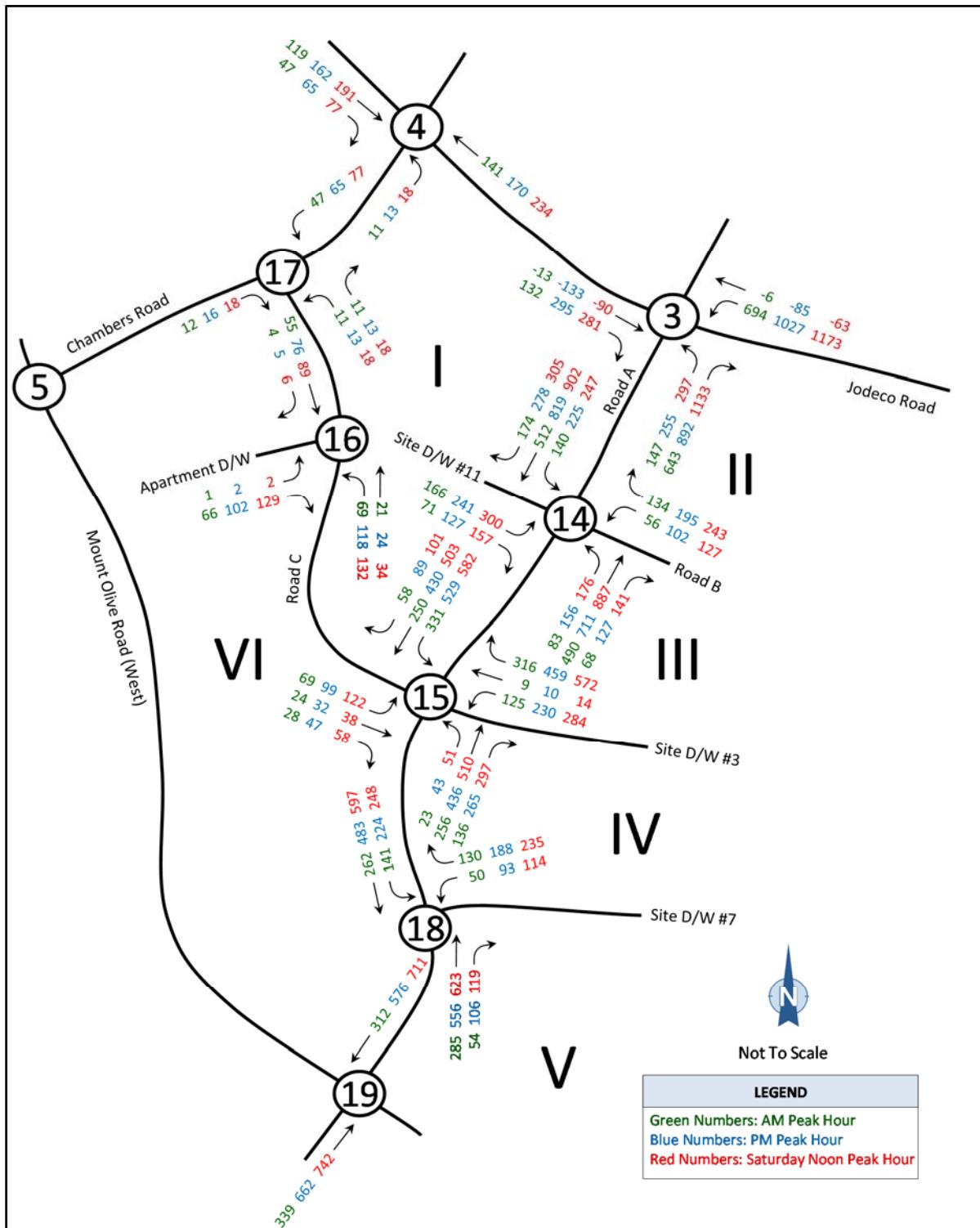
Figure 14: PEAK HOUR PASS-BY TRIPS



Total Generated Traffic

The combination of the new trips from Figures 13A, 13B, 13C, and 13D and the pass by trips from Figure 14 yields the estimated Peak Hour Generated Traffic Volumes is shown in Figure 15.

Figure 15: PEAK HOUR GENERATED TRAFFIC VOLUMES



2025 Projected Peak Hour Traffic Volumes

By combining the Peak Hour Generated Traffic Volumes (Figure 15) and the 2025 Background Peak Hour Volumes (Figures 9A, 9B, and 9C), the 2025 Projected Peak Hour Traffic Volumes are derived. The 2025 Projected Peak Hour Traffic Volumes expected, after the development is fully occupied, are shown in Figures 16A, 16B, 16C, and 16D.

Figure 16A: 2025 PROJECTED PEAK HOUR TRAFFIC VOLUMES, JODECO RD

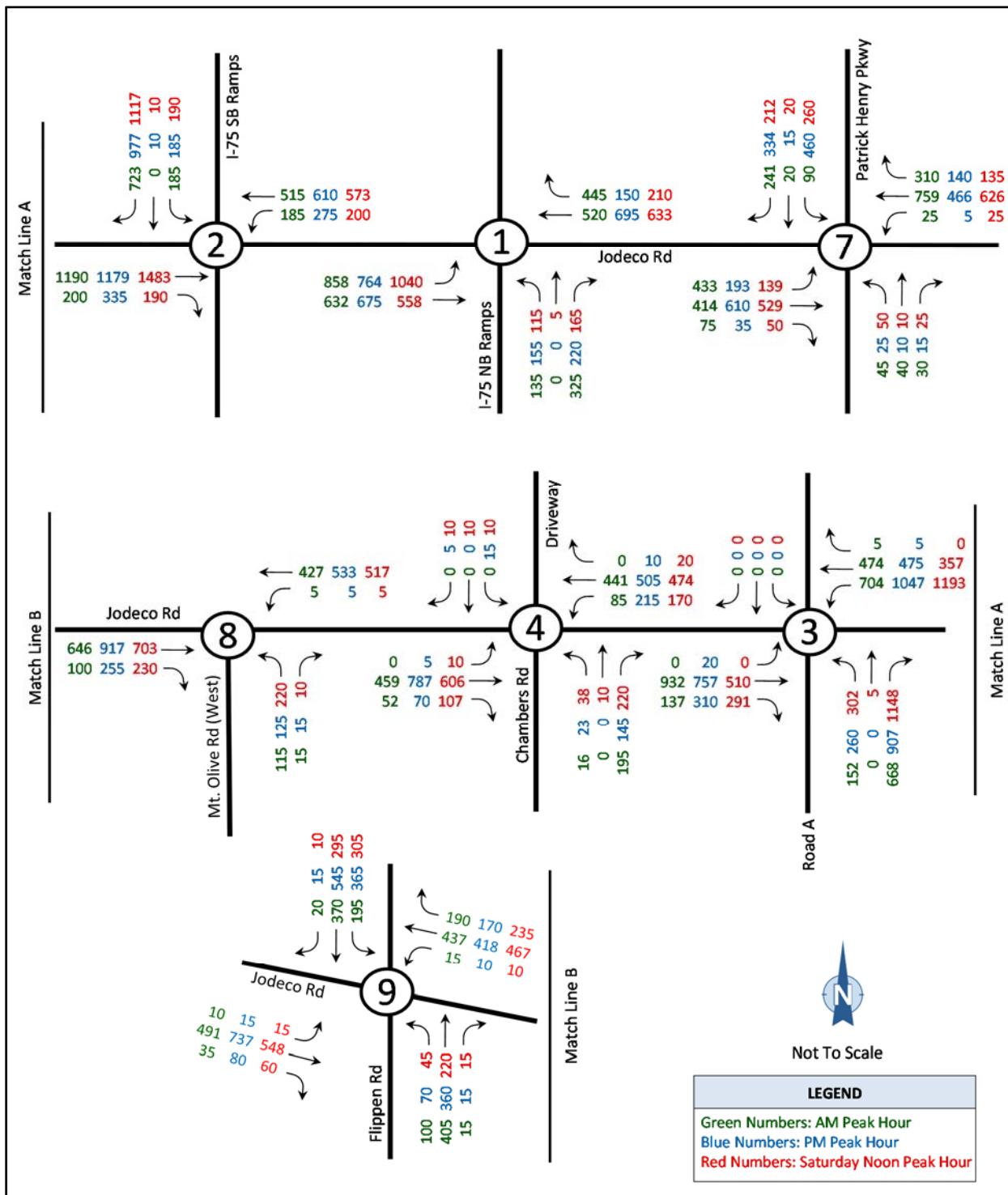
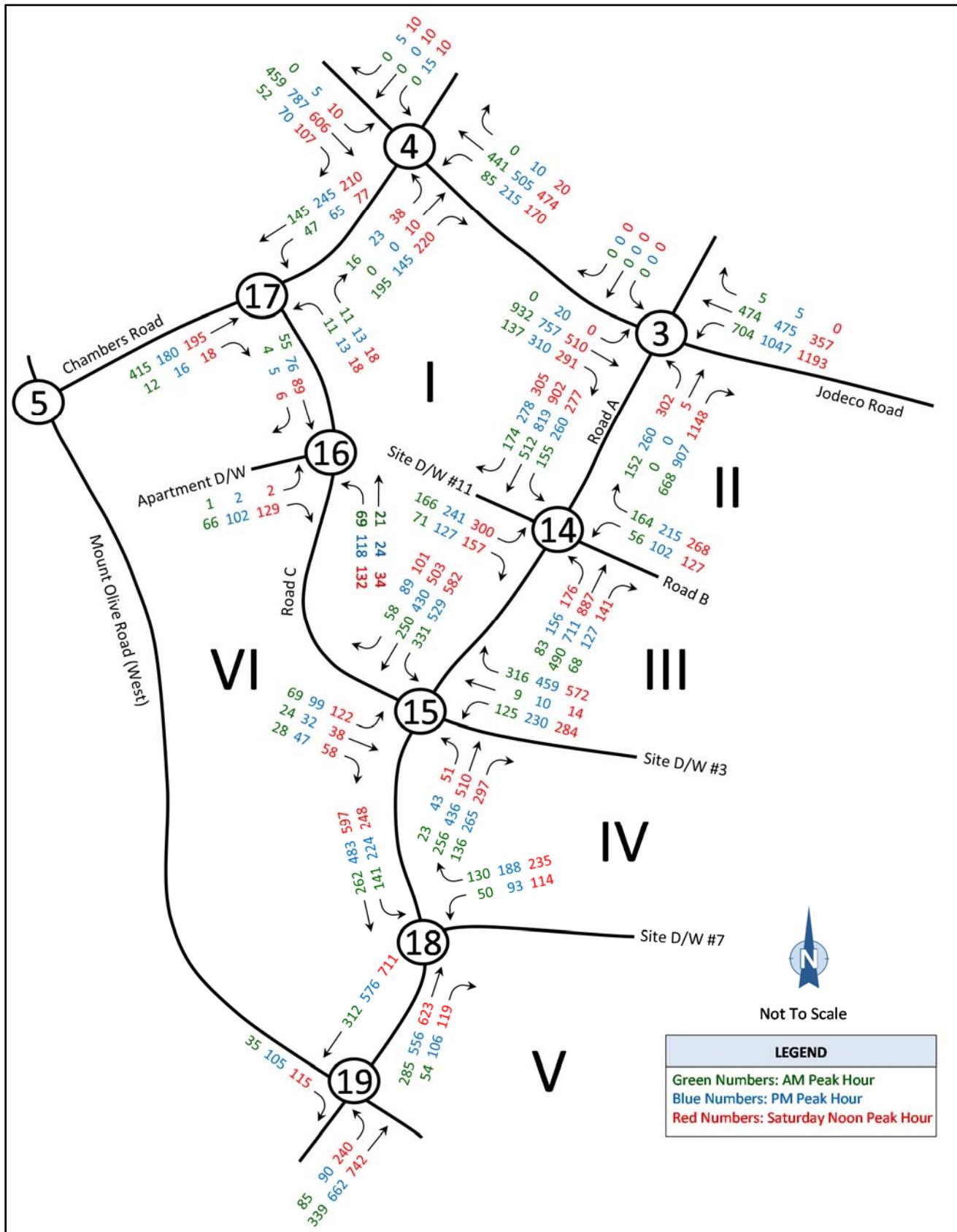


Figure 16B: 2025 PROJECTED PEAK HOUR TRAFFIC VOLUMES, INTERNAL TO THE SITE



**Figure 16C: 2025 PROJECTED PEAK HOUR TRAFFIC VOLUMES,
CHAMBERS RD & MT OLIVE RD (WEST)**

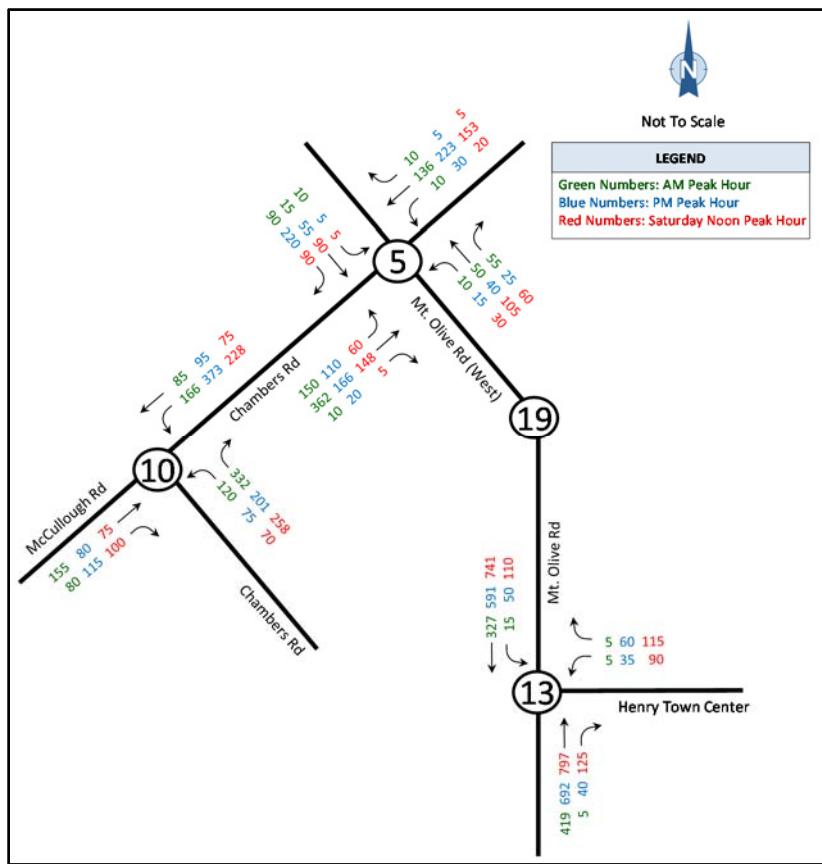
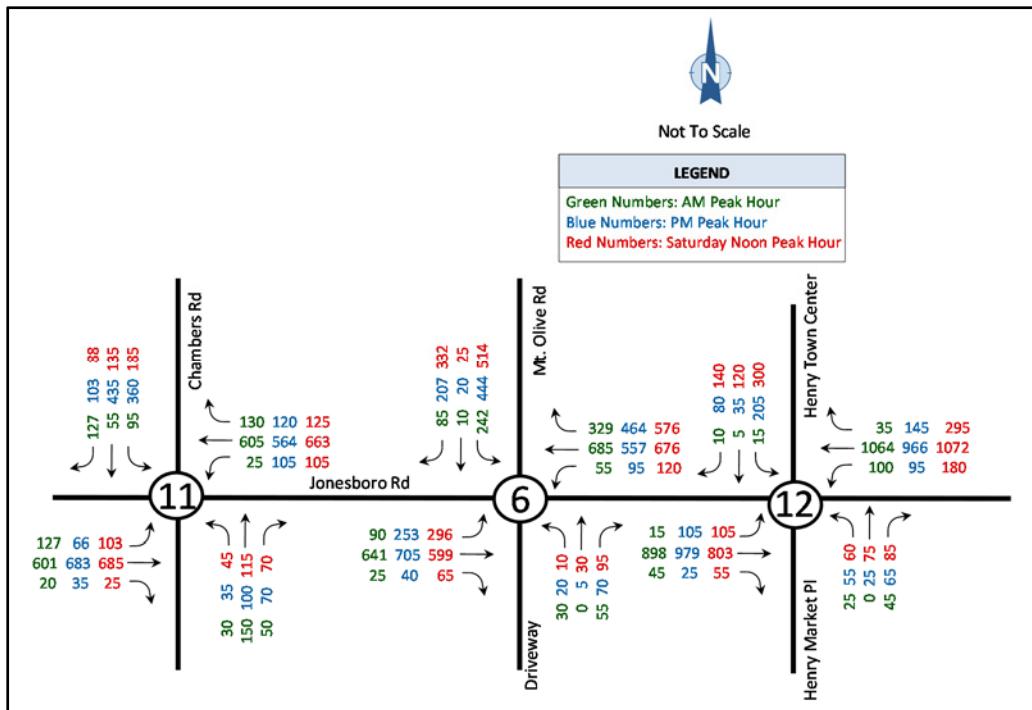


Figure 16D: 2025 PROJECTED PEAK HOUR TRAFFIC VOLUMES, JONESBORO RD



INTERSECTION CAPACITY ANALYSIS

Existing and Projected Volumes were evaluated using capacity analysis techniques described in the *Highway Capacity Manual, Special Report 209*, published by the Transportation Research Board, 2010. The *Synchro Program* (Version 9) from Trafficware was used to facilitate the intersection analysis. The HCM level-of-service definitions for signalized and stop control intersections are summarized in Table 5.

Table 5: INTERSECTION LEVEL OF SERVICE CRITERIA

LEVEL OF SERVICE	SIGNALIZED INTERSECTIONS	STOP CONTROLLED INTERSECTIONS
	STOPPED DELAY PER VEHICLE (SECONDS)	STOPPED DELAY PER VEHICLE (SECONDS)
A	≤10.0	≤10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	>80.0	>50.0

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, 2010

Capacity analysis is shown for signalized intersections first followed by unsignalized intersections. Capacity analysis results for unsignalized intersections provide estimates of level of service (LOS) for each minor movement that is required to yield to free flow movements. No overall intersection LOS is given for the unsignalized intersections. LOS for each movement is shown followed by the estimated delay per vehicle in seconds.

The Existing and Projected Volumes were evaluated with the existing geometrics first. The Existing and Projected Volumes were then evaluated to determine the minimum improvements necessary to provide the LOS 'D' standard.

Capacity Analysis Results, Existing Conditions

Table 6 summarizes the results of the capacity analysis for the existing signalized intersections. Capacity analysis reports for the Existing Conditions are provided in Appendix E.

Table 6: EVALUATION OF EXISTING VOLUMES, SIGNALIZED INTERSECTIONS

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	SATURDAY NOON PEAK HOUR
Jodeco Rd & I-75 NB Ramps	A (9.9)	A (6.9)	A (8.9)
Jodeco Rd & I-75 SB Ramps	A (8.8)	A (6.6)	A (7.0)
Jodeco Rd & Patrick Henry Pkwy	C (21.0)	C (25.8)	C (21.7)
Jodeco Rd & Flippin Rd	C (35.0)	C (31.6)	B (18.2)
Jonesboro Rd & Chambers Rd	C (23.3)	C (32.7)	C (28.0)
Jonesboro Rd & Henry Town Center	C (23.3)	C (27.1)	C (30.4)

The capacity results indicate that all signalized intersections operate at LOS ‘C’ or better for the Existing Conditions.

Table 7 summarizes the results of the capacity analysis for the existing unsignalized intersections. Poor operating conditions are highlighted. Improvements needed to meet minimum level of service standards were determined. The resulting LOS with those improvements are also shown. The required improvements are shown graphically on the following pages in Figures 17A and 17B. Capacity analysis reports for the Existing Conditions are provided in Appendix F.

Table 7: EVALUATION OF EXISTING VOLUMES, UNSIGNALIZED INTERSECTIONS

INTERSECTION	MOVEMENT	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
		W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.
Jodeco Rd & Mt. Olive Rd (Road A)	EBL	A (0.0)		A (8.9)		A (0.0)	
	EBT	A (0.0)		A (0.0)		A (0.0)	
	EBR	A (0.0)		A (0.0)		A (0.0)	
	WBL	B (10.1)		B (10.2)		A (8.8)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NBL-T	E (35.7)		E (45.1)		C (21.7)	
	NBR	B (12.9)		B (11.5)		B (10.3)	
	SB	A (9.9)		A (0.0)		A (0.0)	
							LOS A (8.9) See Fig. 17
Jodeco Rd & Chambers Rd	EB	A (0.0)		A (0.2)		A (0.4)	
	WBL	A (8.5)		B (10.0)		A (8.8)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NB	C (16.1)		D (29.6)		C (22.6)	
	SB	A (0.0)		F (137.7)		F (50.7)	
Chambers Rd & Mt. Olive Rd (West)	EB	D (30.8)		B (14.0)		B (11.6)	
	WB	B (12.7)		B (13.2)		B (10.7)	
	NB	B (13.0)		B (10.2)		B (11.3)	
	SB	B (12.1)		B (12.8)		B (10.6)	
Jonesboro Rd & Mt. Olive Rd	EBL	A (9.5)		A (9.1)		B (11.4)	
	EBT	A (0.0)		A (0.0)		A (0.0)	
	EBR	A (0.0)		A (0.0)		A (0.0)	
	WBL	A (9.2)		A (10.0)		A (9.7)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NBL-T	F (405.6)		F (750.0)		F (*)	
	NBR	F (405.6)		F (750.0)		F (*)	
	SB	F (89.7)		F (*)		F (*)	
Jodeco Rd & Mt. Olive Rd (West)	EB	A (0.0)		A (0.0)		A (0.0)	
	WB	A (0.5)		A (0.6)		A (0.7)	
	NB	D (28.8)		F (58.5)		E (44.9)	
Chambers Rd & McCollough Rd	WB	F (53.9)		D (31.7)		C (17.9)	
	NB	A (0.0)		A (0.0)		A (0.0)	
	SB	A (6.7)		A (7.3)		A (6.5)	
Mt. Olive Rd & Rear Entrance to Henry Town Center	WB	A (9.5)		A (9.8)		B (13.9)	
	NB	A (0.0)		A (0.0)		A (0.0)	
	SB	A (4.6)		A (5.5)		A (6.3)	
* = Delay outside of calculated range							

Without improvements, the results indicate that five unsignalized intersections will not achieve the LOS 'D' standard for the Existing Conditions.

Figures 17A and 17B show the minimum improvements necessary to provide the LOS 'D' standard for the Existing Conditions.

Figure 17A: REQ. TO MEET MIN. LOS STANDARDS, EXISTING CONDITIONS, JODECO RD & JONESBORO RD

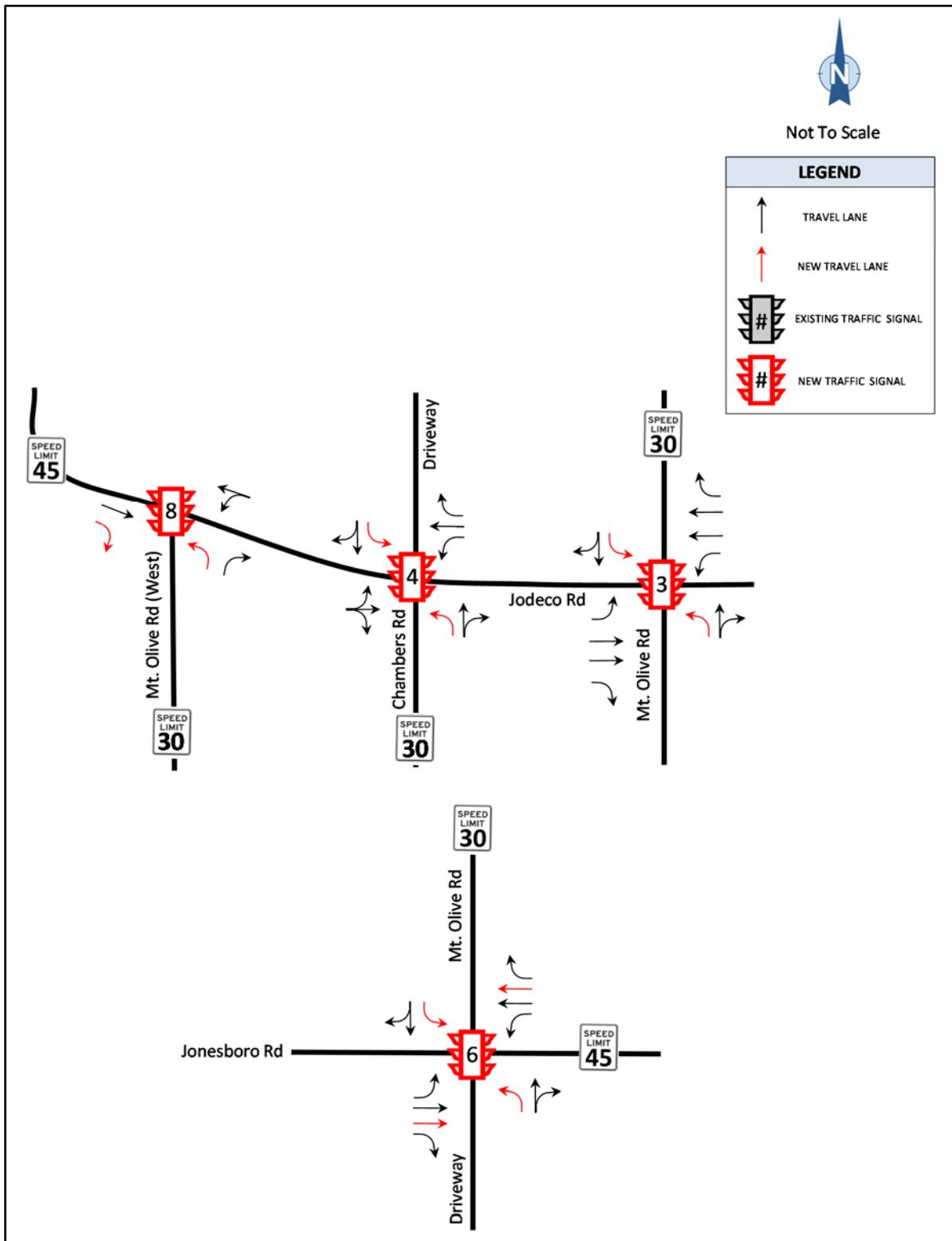
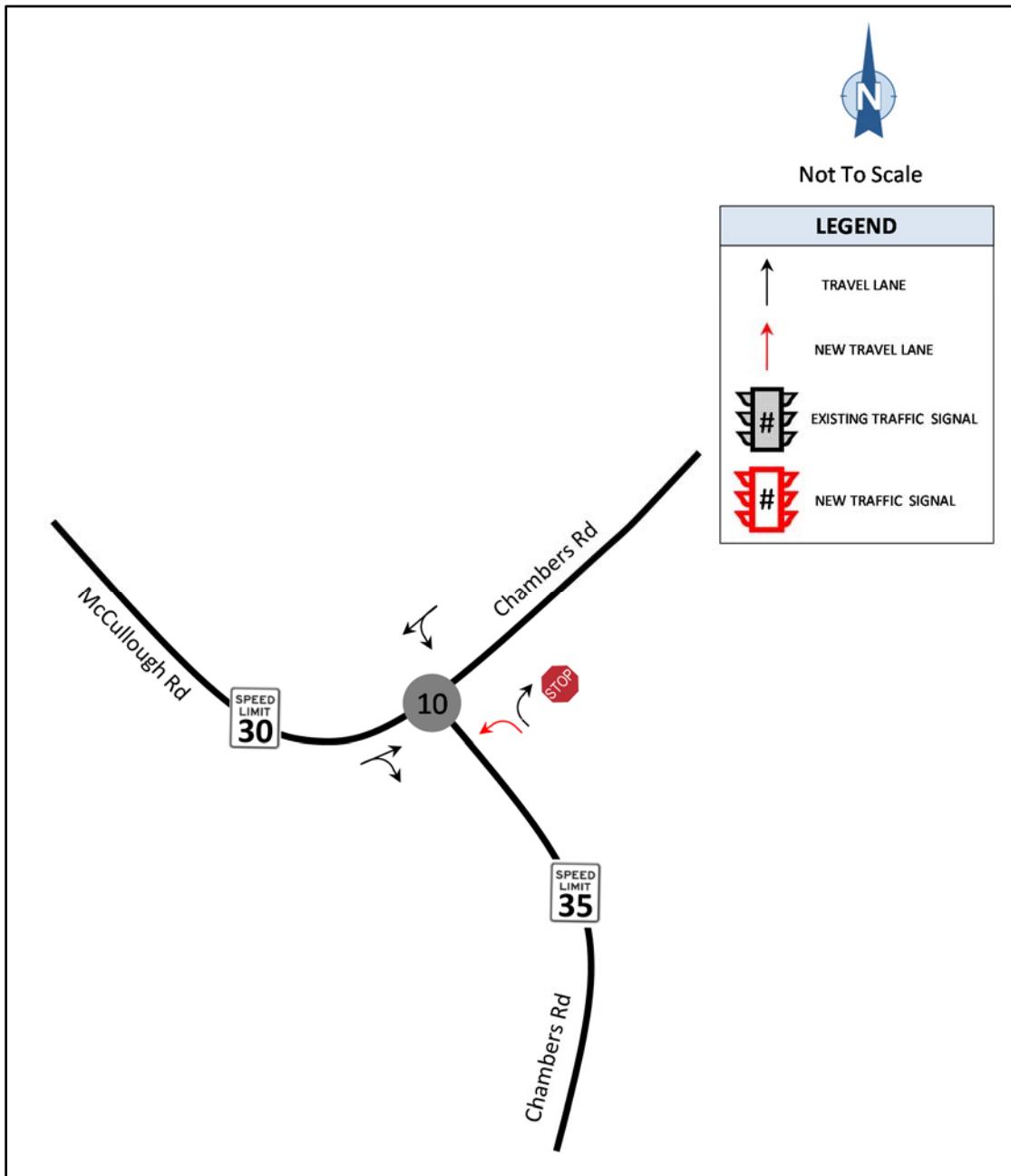


Figure 17B: REQ. TO MEET MIN. LOS STANDARDS, EXISTING CONDITIONS, CHAMBERS RD



Capacity Analysis Results, 2025 Background Volumes

Table 8 summarizes the results of the capacity analysis with the 2025 Background Volumes for the signalized intersections. Capacity analysis reports for the 2025 Background Volumes are provided in Appendix G.

Table 8: EVALUATION OF 2025 BACKGROUND VOLUMES, SIGNALIZED INTERSECTIONS

INTERSECTION	AM PEAK HOUR	PM PEAK HOUR	SATURDAY NOON PEAK HOUR
Jodeco Rd & I-75 NB Ramps	B (10.6)	A (7.1)	A (9.3)
Jodeco Rd & I-75 SB Ramps	A (8.7)	A (6.7)	A (7.1)
Jodeco Rd & Patrick Henry Pkwy	C (22.0)	C (26.0)	C (21.8)
Jodeco Rd & Flippen Rd	D (39.2)	D (38.2)	C (20.6)
Jonesboro Rd & Chambers Rd	C (27.0)	D (43.4)	D (35.7)
Jonesboro Rd & Henry Town Center	C (25.2)	C (33.1)	C (34.9)

The capacity results indicate that all signalized intersections will continue to operate at LOS ‘D’ or better with the 2025 Background Volumes.

Table 9 summarizes the results of the capacity analysis with the 2025 Background Volumes for the unsignalized intersections. Poor operating conditions are highlighted. Improvements needed to result in minimum level of service standards were determined. The resulting LOS with those improvements are also shown. The required improvements are shown graphically on the following pages in Figures 18A and 18B. Capacity analysis reports for the 2025 Background Volumes are provided in Appendix H.

Table 9: EVALUATION OF 2025 BACKGROUND VOLUMES, UNSIGNALIZED INTERSECTIONS

INTERSECTION	MOVEMENT	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
		W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.
Jodeco Rd & Mt. Olive (Road A)	EBL	A (0.0)		A (9.1)		A (0.0)	
	EBT	A (0.0)		A (0.0)		A (0.0)	
	EBR	A (0.0)		A (0.0)		A (0.0)	
	WBL	B (10.6)		B (10.7)		A (9.0)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NBL-T	E (44.0)		F (54.5)		D (28.3)	
	NBR	B (13.6)		B (12.0)		B (10.7)	
	SB	A (0.0)		A (0.0)		A (0.0)	
Jodeco Rd & Chambers Rd	EB	A (0.0)		A (0.3)		A (0.3)	
	WBL	A (8.6)		B (10.4)		A (9.1)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NB	C (16.9)		F (44.5)		E (39.4)	
	SB	A (0.0)		F (217.0)		F (76.1)	
Chambers Rd & Mt. Olive Rd (West)	EB	F (50.8)		C (16.0)		B (13.3)	
	WB	B (14.1)		B (14.7)		B (12.2)	
	NB	B (14.0)		B (10.7)		B (13.2)	
	SB	B (13.3)		B (14.2)		B (12.1)	
Jonesboro Rd & Mt. Olive Rd	EBL	A (9.9)		A (9.4)		B (12.8)	
	EBT	A (0.0)		A (0.0)		A (0.0)	
	EBR	A (0.0)		A (0.0)		A (0.0)	
	WBL	A (9.5)		B (10.4)		B (10.2)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NBL-T	F (*)		F (*)		F (*)	
	NBR	F (*)		F (*)		F (*)	
	SB	F (576.0)		F (*)		F (*)	
Jodeco Rd & Mt. Olive Rd (West)	EB	A (0.0)		A (0.0)		A (0.0)	
	WB	A (0.4)		A (0.4)		A (0.5)	
	NB	D (34.1)		F (83.7)		F (77.4)	
Chambers Rd & McCollough Rd	WB	F (115.6)		F (80.4)		C (22.7)	
	NB	A (0.0)		A (0.0)		A (0.0)	
	SB	A (7.0)		A (8.1)		A (6.5)	
Mt. Olive Rd & Rear Entrance to Henry Town Center	WB	A (9.7)		A (9.8)		B (14.4)	
	NB	A (0.0)		A (0.0)		A (0.0)	
	SB	A (4.3)		A (5.6)		A (6.2)	

* = Delay outside of calculated range

Without improvements, the results indicate that six unsignalized intersections will not achieve the LOS 'D' standard with the 2025 Background Volumes.

Figures 18A and 18B show the minimum improvements necessary to provide the LOS 'D' standard with the 2025 Background Volumes.

Figure 18A: REQ. TO MEET MIN. LOS STANDARDS, 2025 BACKGROUND VOLUMES, JODECO RD & JONESBORO RD

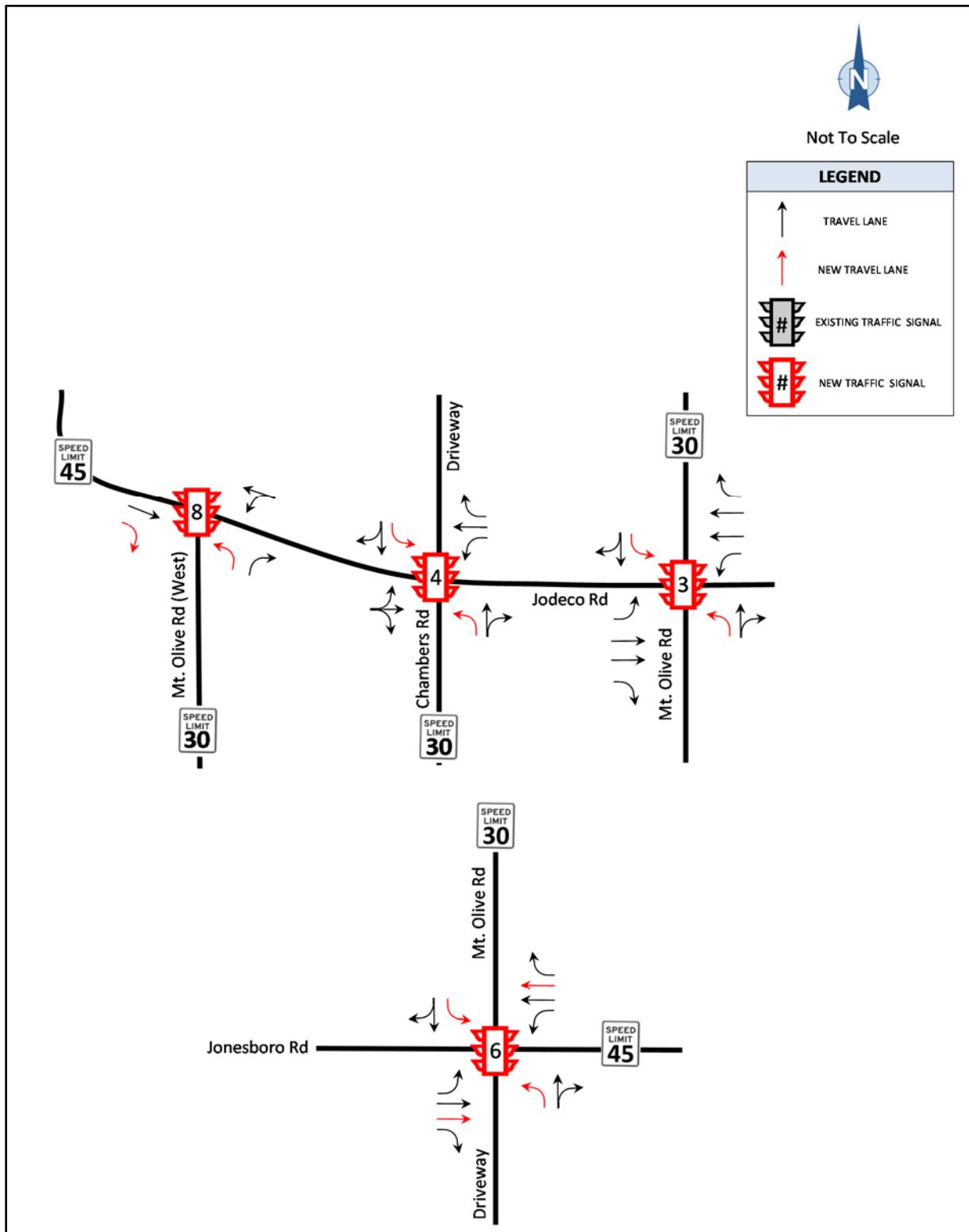
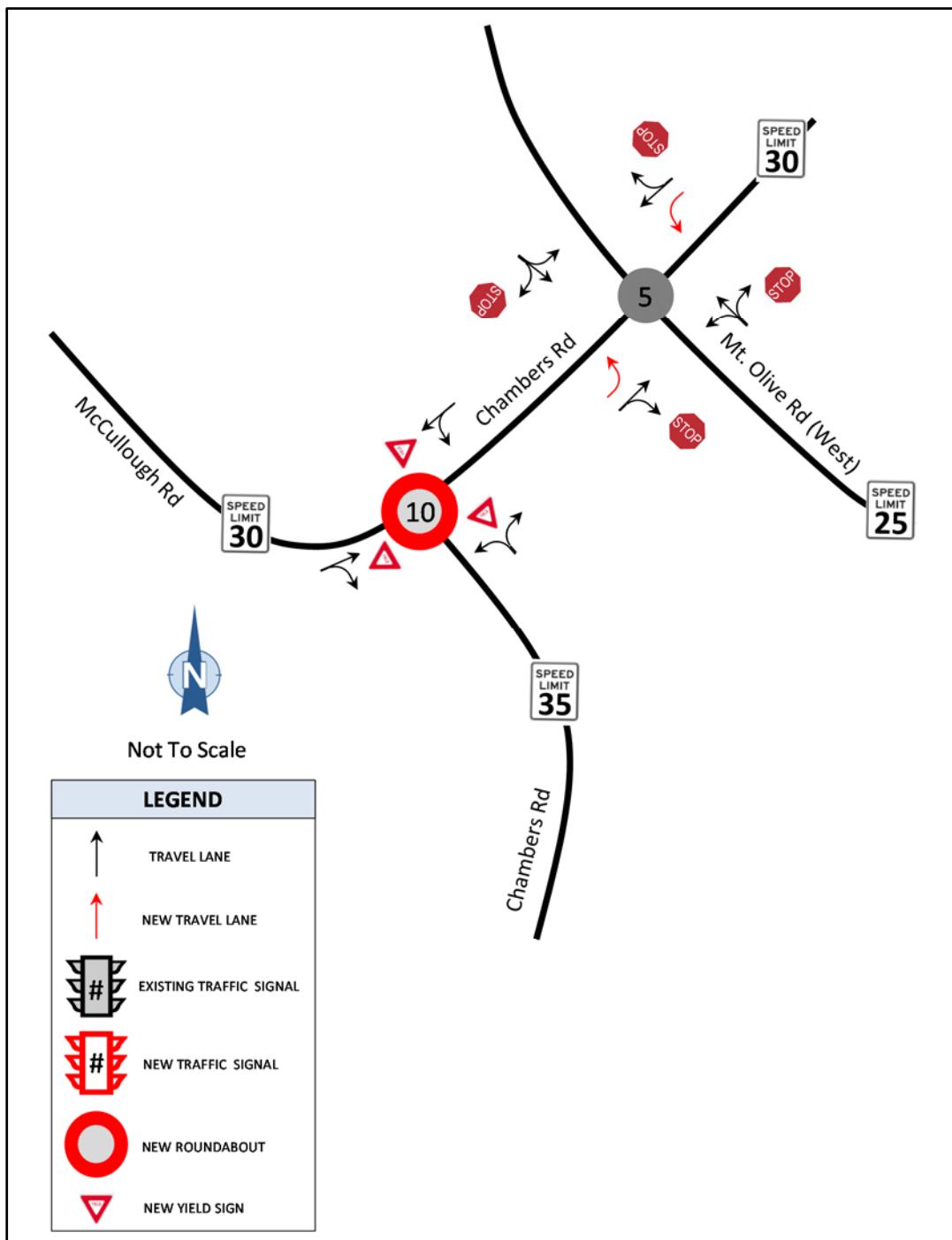


Figure 18B: REQ. TO MEET MIN. LOS STANDARDS, 2025 BACKGROUND VOLUMES,
CHAMBERS RD & MT. OLIVE RD (WEST)



Capacity Analysis Results, 2025 Projected Volumes

Table 10 summarizes the results of the capacity analysis with the 2025 Projected Volumes for the signalized intersections. Capacity analysis reports for the 2025 Projected Volumes are provided in Appendix I.

Table 10: EVALUATION OF 2025 PROJECTED VOLUMES, SIGNALIZED INTERSECTIONS

INTERSECTION	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.
Jodeco Rd & I-75 NB Ramps	B (13.7)	N/A	B (11.2)	N/A	B (17.6)	N/A
Jodeco Rd & I-75 SB Ramps	B (15.6)	N/A	B (18.9)	N/A	C (30.2)	N/A
Jodeco Rd & Patrick Henry Pkwy	C (25.0)	N/A	C (20.5)	N/A	C (20.8)	N/A
Jodeco Rd & Flippin Rd	E (57.9)	D (39.2) See Fig. 19A	E (58.6)	D (45.9) See Fig. 19A	C (34.3)	C (24.0) See Fig. 19A
Jonesboro Rd & Chambers Rd	C (30.7)	C (23.8) See Fig. 19D	D (52.1)	D (45.9) See Fig. 19D	E (55.2)	D (37.2) See Fig. 19D
Jonesboro Rd & Henry Town Center	C (32.2)	B (12.8) See Fig. 19D	E (57.5)	C (22.9) See Fig. 19D	F (83.1)	C (30.3) See Fig. 19D

Without improvements, the results indicate that four signalized intersections will not achieve the LOS 'D' standard with the 2025 Projected Volumes.

The improvements required to meet the minimum LOS standards are graphically shown in Figures 19A, 19B, and 19C.

Table 11 summarizes the results of the capacity analysis with the 2025 Projected Volumes for the unsignalized intersections. Poor operating conditions are highlighted. Improvements needed to result in minimum level of service standards were determined. The resulting LOS with those improvements are also shown. The required improvements are shown graphically on the following pages in Figures 19A, 19B, and 19C. Capacity analysis reports for the 2025 Projected Volumes are provided in Appendix J.

Table 11: EVALUATION OF 2025 PROJECTED VOLUMES, UNSIGNALIZED INTERSECTIONS

INTERSECTION	MOVEMENT	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
		W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.
Jodeco Rd & Road A (Mt. Olive Rd)	EBL	A (0.0)		A (8.8)		A (0.0)	
	EBT	A (0.0)		A (0.0)		A (0.0)	
	EBR	A (0.0)		A (0.0)		A (0.0)	
	WBL	F (285.2)		F (206.1)		F (245.7)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NBL-T	F (*)		F (*)		F (*)	
	NBR	F (491.9)		F (425.9)		F (885.3)	
	SB	A (0.0)		A (0.0)		A (0.0)	
Jodeco Rd & Chambers Rd	EB	A (0.0)		A (0.4)		A (0.4)	
	WBL	A (9.6)		B (12.7)		B (10.9)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NB	E (47.3)		F (548.4)		F (633.8)	
	SB	A (0.0)		F (1145.0)		F (719.1)	
Chambers Rd & Mt. Olive Rd (West)	EB	F (59.2)		C (17.5)		B (14.4)	
	WB	B (14.9)		C (15.6)		B (13.1)	
	NB	B (14.3)		B (10.9)		B (14.0)	
	SB	B (13.6)		B (14.8)		B (12.7)	
Jonesboro Rd & Mt. Olive Rd	EBL	B (11.3)		B (10.2)		C (16.6)	
	EBT	A (0.0)		A (0.0)		A (0.0)	
	EBR	A (0.0)		A (0.0)		A (0.0)	
	WBL	A (9.4)		A (9.7)		A (9.6)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NBL-T	F (*)		F (*)		F (*)	
	NBR	F (*)		F (*)		F (*)	
	SB	F (*)		F (*)		F (*)	
Jodeco Rd & Mt. Olive Rd (West)	EB	A (0.0)		A (0.0)		A (0.0)	
	WB	A (0.3)		A (0.5)		A (0.4)	
	NB	F (114.7)		F (374.5)		F (568.3)	
Chambers Rd & McCollough Rd	WB	F (142.1)		F (70.8)		D (26.0)	
	NB	A (0.0)		A (0.0)		A (0.0)	
	SB	A (7.2)		A (7.7)		A (6.7)	
Mt. Olive Rd & Rear Entrance to Henry Town Center	WB	C (20.8)		F (182.0)		F (*)	
	NB	A (0.0)		A (0.0)		A (0.0)	
	SB	A (0.8)		A (2.7)		B (10.8)	

* = Delay outside of calculated range

Table 11: EVALUATION OF 2025 PROJECTED VOLUMES, UNSIGNALIZED INTERSECTIONS (continued)

INTERSECTION	MOVEMENT	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
		W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.	W/EXISTING GEOMETRICS	W/REQ. MINIMUM IMPROV.
Road A (Mt. Olive Rd) & D/W #11/Road B	EBL	F (893.7)	LOS B (14.0) See Fig. 19B	F (*)	LOS B (17.3) See Fig. 19B	F (*)	LOS C (23.1) See Fig. 19B
	EBT	A (0.0)		A (0.0)		A (0.0)	
	EBR	F (*)		F (*)		F (*)	
	WBL	F (129.3)		F (*)		F (*)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	F (*)		F (*)		F (*)	
	NBL	A (9.7)		B (13.7)		C (15.8)	
	NBT	A (0.0)		A (0.0)		A (0.0)	
	NBR	A (0.0)		A (0.0)		A (0.0)	
	SBL	A (9.5)		B (12.8)		C (16.1)	
	SBT	A (0.0)		A (0.0)		A (0.0)	
	SBR	A (0.0)		A (0.0)		A (0.0)	
Road A (Mt. Olive Rd) & Road C/D/W #3	EBL	F (308.6)	LOS B (12.4) See Fig. 19B	F (*)	LOS C (20.1) See Fig. 19B	F (*)	LOS C (24.0) See Fig. 19B
	EBT	A (0.0)		A (0.0)		A (0.0)	
	EBR	E (35.4)		F (*)		F (*)	
	WBL	F (466.1)		F (*)		F (*)	
	WBT	A (0.0)		A (0.0)		A (0.0)	
	WBR	B (12.6)		D (31.5)		F (*)	
	NBL	A (8.0)		A (8.8)		A (9.1)	
	NBT	A (0.0)		A (0.0)		A (0.0)	
	NBR	A (0.0)		A (0.0)		A (0.0)	
	SBL	A (9.7)		C (17.8)		D (27.9)	
	SBT	A (0.0)		A (0.0)		A (0.0)	
	SBR	A (0.0)		A (0.0)		A (0.0)	
Apartment D/W & Road C	EBT	A (0.0)	LOS B (10.0) See Fig. 19B	A (0.0)	LOS B (11.2) See Fig. 19B	A (0.0)	LOS B (11.8) See Fig. 19B
	EBR	A (0.0)		A (0.0)		A (0.0)	
	WBL	A (7.5)		A (7.6)		A (7.7)	
	WBR	A (0.0)		A (0.0)		A (0.0)	
	NBL	B (10.0)		B (11.2)		B (11.8)	
	NBR	A (8.9)		A (9.2)		A (9.4)	
Chambers Rd & Road C	WBL	B (14.8)	LOS B (14.8) See Fig. 19B	B (13.5)	LOS B (13.5) See Fig. 19B	B (13.8)	LOS B (13.8) See Fig. 19B
	WBR	B (11.0)		A (9.3)		A (9.5)	
	NBT	A (0.0)		A (0.0)		A (0.0)	
	NBR	A (0.0)		A (0.0)		A (0.0)	
	SBL	A (8.4)		A (7.8)		A (7.9)	
	SBT	A (0.0)		A (0.0)		A (0.0)	
Road A (Mt. Olive Rd) & D/W #7	WBL	C (19.7)	LOS A (7.8) See Fig. 19B	F (163.2)	LOS B (10.6) See Fig. 19B	F (487.9)	LOS B (11.0) See Fig. 19B
	WBR	B (11.6)		C (20.0)		D (29.2)	
	NBT	A (0.0)		A (0.0)		A (0.0)	
	NBR	A (0.0)		A (0.0)		A (0.0)	
	SBL	A (8.5)		B (10.7)		B (11.6)	
	SBT	A (0.0)		A (0.0)		A (0.0)	
Mt. Olive Rd (West) & Road A (Mt. Olive Rd)	EB	B (10.4)	LOS A (9.5) See Fig. 19B	B (14.7)	LOS E (47.8) See Fig. 19B	C (18.1)	LOS B (12.4) See Fig. 19B
	WB	A (0.0)		A (0.0)		A (0.0)	
	NBL	A (8.2)		A (9.2)		B (11.2)	
	NBT	A (0.0)		A (0.0)		A (0.0)	
	NBR	A (0.0)		A (0.0)		A (0.0)	
	SBL	A (0.0)		A (0.0)		A (0.0)	
	SBT	A (0.0)		A (0.0)		A (0.0)	
	SBR	A (0.0)		A (0.0)		A (0.0)	

* = Delay outside of calculated range

Without improvements, the results indicate that ten unsignalized intersections will not achieve the LOS 'D' standard with the 2025 Projected Volumes.

Figures 19A, 19B, and 19C show the minimum improvements necessary to provide the LOS 'D' standard with the 2025 Projected Volumes.

Figure 19A: REQ. TO MEET MIN. LOS STANDARDS, 2025 PROJECTED VOLUMES, JODECO RD & JONESBORO RD

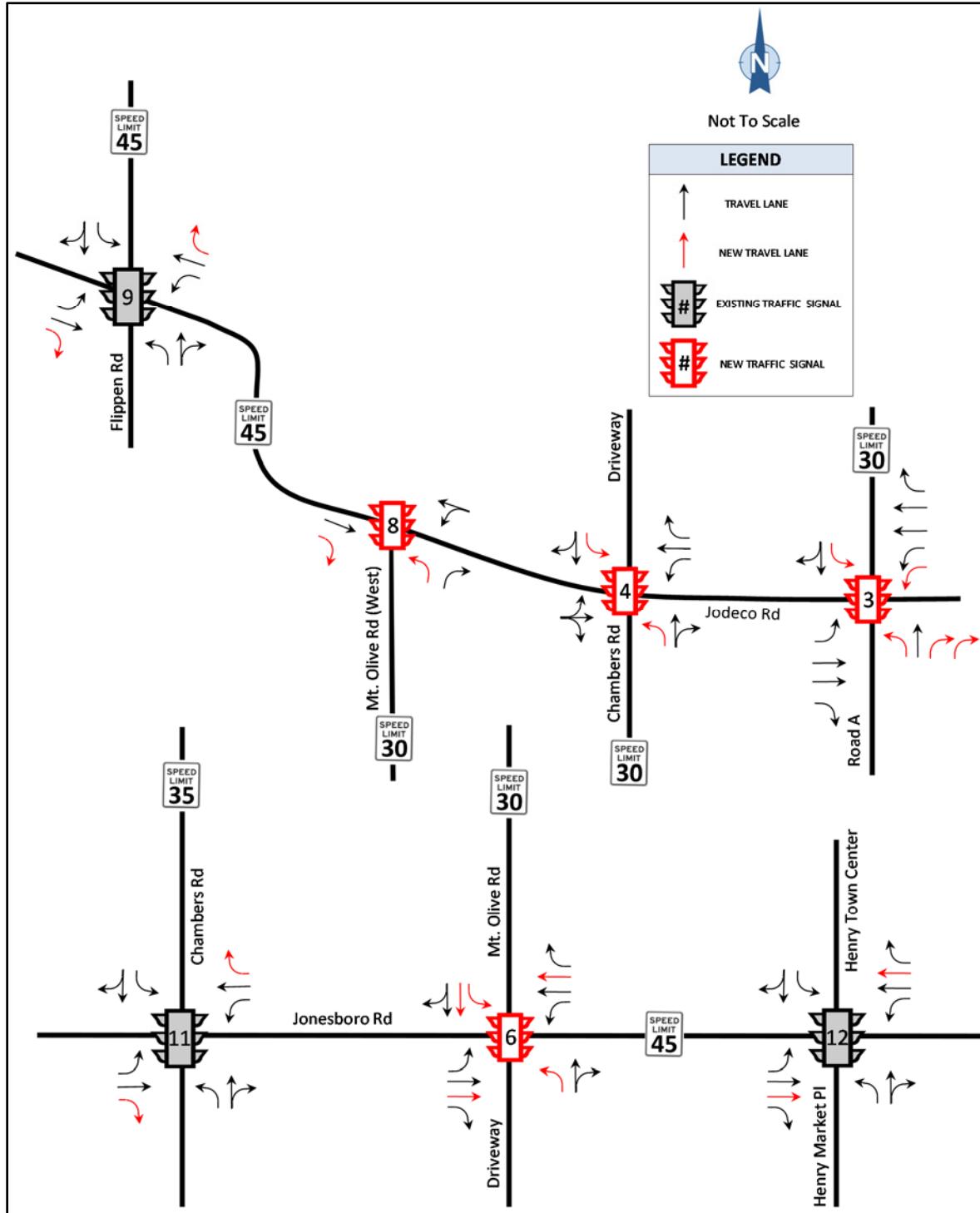
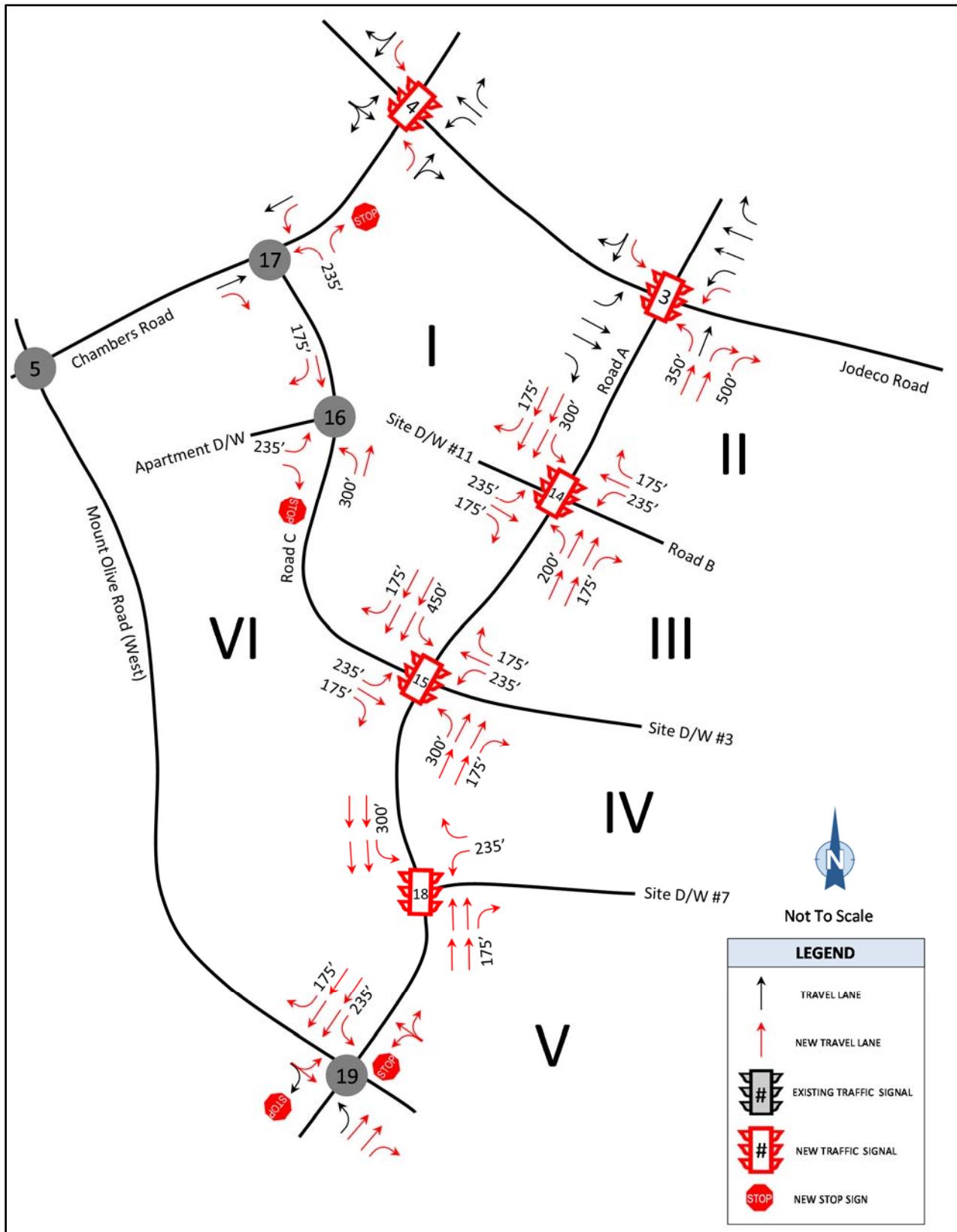
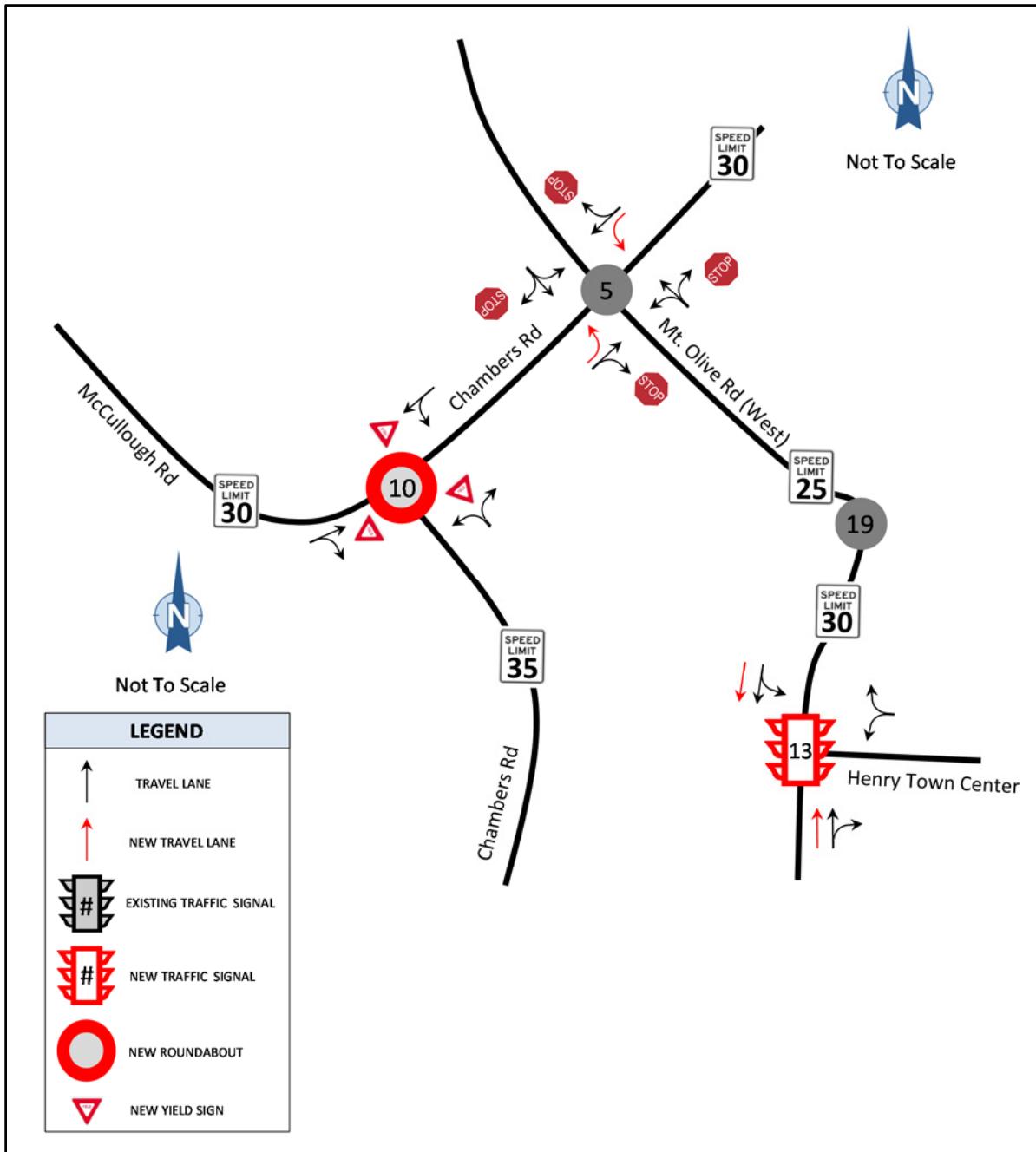


Figure 19B: REQ. TO MEET MIN. LOS STANDARDS, 2025 PROJECTED VOLUMES, INTERNAL TO THE SITE



**Figure 19C: REQ. TO MEET MIN. LOS STANDARDS, 2025 PROJECTED VOLUMES,
CHAMBERS RD & MT. OLIVE RD (WEST)**



ROADWAY SEGMENT ANALYSIS

Capacity analysis was also conducted for each roadway segment using the *Highway Capacity Software* from McTrans. Existing and Projected Volumes were evaluated. The HCM level-of-service definitions for two lane highways (Class II) and multilane highways are summarized in Table 12.

Table 12: ROADWAY SEGMENT LEVEL OF SERVICE CRITERIA

LEVEL OF SERVICE	TWO LANE HIGHWAYS (CLASS II)	MULTILANE HIGHWAYS
	PERCENT TIME SPENT FOLLOWING (%)	DENSITY (PASSENGER CAR/MILE/LANE)
A	≤40	0 to 11
B	>40 - 55	>11 - 18
C	>55 - 70	>18 - 26
D	>70 - 85	>26 - 35
E	> 85	>35 – 45
F	Volume/Capacity (V/C) > 1	>45

Source: Highway Capacity Manual, Transportation Research Board, 2010

The two-lane highway segment analysis provides the directional volume, volume/capacity ratio (v/c), and LOS based on Percent Time Spent Following (PTSF). The multilane highway segment analysis provides the directional volume and LOS based on passenger cars/mile/lane (pc/mi/ln).

The Existing Volumes and Background Volumes were evaluated with the existing roadway segments. The 2025 Projected Volumes were evaluated to determine the minimum improvements necessary to provide the LOS ‘D’ standard. Only the 2025 Projected Volumes were evaluated for required mitigations because it will show the worst case scenario LOS with the improvements.

Roadway Segment Analysis Results, Existing Conditions

Table 13 summarizes the results of the roadway segment analysis for the existing volumes. Poor operating conditions are highlighted. Roadway segment analysis reports for the Existing Conditions are provided in Appendix K.

Table 13: ROADWAY SEGMENT ANALYSIS, EVALUATION OF EXISTING VOLUMES

ROADWAY	SEGMENT	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
		TWO-LANE	MULTILANE	TWO-LANE	MULTILANE	TWO-LANE	MULTILANE
Jodeco Rd	Patrick Henry Pkwy to I-75 NB Ramps	N/A	761 vph (EB) 868 vph (WB) A (10.6)	N/A	716 vph (EB) 649 vph (WB) A (8.8)	N/A	524 vph (EB) 673 vph (WB) A (8.2)
	I-75 NB Ramps to I-75 SB Ramps	N/A	495 vph (EB) 384 vph (WB) A (6.1)	N/A	516 vph (EB) 435 vph (WB) A (6.3)	N/A	446 vph (EB) 380 vph (WB) A (5.5)
	I-75 SB Ramps to Mt. Olive Rd (Road A)	N/A	880 vph (EB) 502 vph (WB) A (10.7)	N/A	882 vph (EB) 584 vph (WB) A (10.8)	N/A	571 vph (EB) 536 vph (WB) A (7.0)
	Mt. Olive Rd (Road A) to Chambers Rd	860 vph (EB) 441 vph (WB) 0.57 (v/c) E (89%)	N/A	841 vph (EB) 528 vph (WB) 0.56 (v/c) E (87%)	N/A	585 vph (EB) 386 vph (WB) 0.39 (v/c) D (80%)	N/A
	Chambers Rd to Mt. Olive Rd (West)	449 vph (EB) 278 vph (WB) 0.30 (v/c) D (74%)	N/A	574 vph (EB) 323 vph (WB) 0.38 (v/c) D (80%)	N/A	413 vph (EB) 248 vph (WB) 0.28 (v/c) D (72%)	N/A
	Mt. Olive Rd (West) to Flippen Rd	536 vph (EB) 447 vph (WB) 0.36 (v/c) D (75%)	N/A	883 vph (EB) 438 vph (WB) 0.59 (v/c) E (87%)	N/A	600 vph (EB) 441 vph (WB) 0.40 (v/c) D (79%)	N/A
Chambers Rd	Jodeco Rd to Mt. Olive Rd (West)	380 vph (NB) 133 vph (SB) 0.25 (v/c) D (73%)	N/A	161 vph (NB) 228 vph (SB) 0.15 (v/c) C (60%)	N/A	212 vph (NB) 186 vph (SB) 0.14 (v/c) C (57%)	N/A
	Mt. Olive Rd (West) to McCullough Rd	459 vph (NB) 218 vph (SB) 0.31 (v/c) D (74%)	N/A	255 vph (NB) 416 vph (SB) 0.28 (v/c) D (73%)	N/A	287 vph (NB) 256 vph (SB) 0.19 (v/c) C (65%)	N/A
Jonesboro Rd	Henry Town Center to Mt. Olive Rd	671 vph (EB) 781 vph (WB) 0.52 (v/c) E (85%)	N/A	871 vph (EB) 711 vph (WB) 0.58 (v/c) E (87%)	N/A	760 vph (EB) 875 vph (WB) 0.58 (v/c) E (87%)	N/A
	Mt. Olive Rd to Chambers Rd	630 vph (EB) 672 vph (WB) 0.45 (v/c) D (82%)	N/A	923 vph (EB) 643 vph (WB) 0.62 (v/c) E (90%)	N/A	766 vph (EB) 825 vph (WB) 0.55 (v/c) E (86%)	N/A
Mt. Olive Rd	Mt. Olive Rd (West) to Rear Ent. HTC	85 vph (NB) 28 vph (SB) 0.06 (v/c) A (22%)	N/A	88 vph (NB) 68 vph (SB) 0.06 (v/c) A (21%)	N/A	161 vph (NB) 137 vph (SB) 0.11 (v/c) A (34%)	N/A
	Rear Ent. To HTC to Jonesboro Rd	82 vph (NB) 17 vph (SB) 0.05 (v/c) B (50%)	N/A	70 vph (NB) 88 vph (SB) 0.06 (v/c) B (41%)	N/A	169 vph (NB) 117 vph (SB) 0.11 (v/c) B (54%)	N/A
Mt. Olive Rd (West)	Mt. Olive Rd (Road A) to Chambers Rd	30 vph (EB) 116 vph (WB) 0.08 (v/c) B (53%)	N/A	106 vph (EB) 79 vph (WB) 0.07 (v/c) B (44%)	N/A	101 vph (EB) 171 vph (WB) 0.11 (v/c) B (54%)	N/A

Without improvements, the results indicate that four roadway segments do not achieve the LOS 'D' standard for the Existing Conditions.

Roadway Segment Analysis Results, 2025 Background Volumes

Table 14 summarizes the results of the roadway segment analysis with the 2025 Background Volumes. Poor operating conditions are highlighted. Roadway segment analysis reports for the 2025 Background Volumes are provided in Appendix O.

Table 14: ROADWAY SEGMENT ANALYSIS, EVALUATION OF 2025 BACKGROUND VOLUMES

ROADWAY	SEGMENT	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
		TWO-LANE	MULTILANE	TWO-LANE	MULTILANE	TWO-LANE	MULTILANE
Jodeco Rd	Patrick Henry Pkwy to I-75 NB Ramps	N/A	835 vph (EB) 950 vph (WB) B (11.6)	N/A	790 vph (EB) 715 vph (WB) A (9.7)	N/A	575 vph (EB) 735 vph (WB) A (9.0)
	I-75 NB Ramps to I-75 SB Ramps	N/A	545 vph (EB) 420 vph (WB) A (6.7)	N/A	570 vph (EB) 480 vph (WB) A (7.0)	N/A	490 vph (EB) 420 vph (WB) A (6.0)
	I-75 SB Ramps to Mt. Olive Rd (Road A)	N/A	970 vph (EB) 550 vph (WB) B (11.8)	N/A	905 vph (EB) 645 vph (WB) B (11.0)	N/A	630 vph (EB) 580 vph (WB) A (7.7)
	Mt. Olive Rd (Road A) to Chambers Rd	950 vph (EB) 485 vph (WB) 0.64 (v/c) E (90%)	N/A	925 vph (EB) 560 vph (WB) 0.62 (v/c) E (89%)	N/A	645 vph (EB) 430 vph (WB) 0.43 (v/c) D (83%)	N/A
	Chambers Rd to Mt. Olive Rd (West)	495 vph (EB) 305 vph (WB) 0.33 (v/c) D (76%)	N/A	705 vph (EB) 355 vph (WB) 0.47 (v/c) D (84%)	N/A	455 vph (EB) 270 vph (WB) 0.30 (v/c) D (73%)	N/A
	Mt. Olive Rd (West) to Flippen Rd	580 vph (EB) 490 vph (WB) 0.39 (v/c) D (77%)	N/A	945 vph (EB) 475 vph (WB) 0.63 (v/c) E (89%)	N/A	665 vph (EB) 485 vph (WB) 0.44 (v/c) D (80%)	N/A
Chambers Rd	Jodeco Rd to Mt. Olive Rd (West)	415 vph (NB) 145 vph (SB) 0.28 (v/c) D (74%)	N/A	180 vph (NB) 245 vph (SB) 0.16 (v/c) C (61%)	N/A	250 vph (NB) 210 vph (SB) 0.17 (v/c) C (63%)	N/A
	Mt. Olive Rd (West) to McCullough Rd	510 vph (NB) 240 vph (SB) 0.34 (v/c) D (76%)	N/A	280 vph (NB) 455 vph (SB) 0.30 (v/c) D (74%)	N/A	315 vph (NB) 285 vph (SB) 0.21 (v/c) C (66%)	N/A
Jonesboro Rd	Henry Town Center to Mt. Olive Rd	730 vph (EB) 850 vph (WB) 0.57 (v/c) E (87%)	N/A	945 vph (EB) 775 vph (WB) 0.63 (v/c) E (89%)	N/A	830 vph (EB) 970 vph (WB) 0.65 (v/c) E (90%)	N/A
	Mt. Olive Rd to Chambers Rd	685 vph (EB) 735 vph (WB) 0.49 (v/c) D (84%)	N/A	1015 vph (EB) 710 vph (WB) 0.68 (v/c) E (91%)	N/A	775 vph (EB) 910 vph (WB) 0.61 (v/c) E (89%)	N/A
Mt. Olive Rd	Mt. Olive Rd (West) to Rear Ent. HTC	85 vph (NB) 30 vph (SB) 0.06 v/c A (22%)	N/A	90 vph (NB) 65 vph (SB) 0.06 (v/c) A (21%)	N/A	170 vph (NB) 140 vph (SB) 0.11 (v/c) A (36%)	N/A
	Rear Ent. To HTC to Jonesboro Rd	85 vph (NB) 20 vph (SB) 0.06 (v/c) B (50%)	N/A	70 vph (NB) 90 vph (SB) 0.06 (v/c) B (42%)	N/A	180 vph (NB) 120 vph (SB) 0.12 (v/c) C (55%)	N/A
Mt. Olive Rd (West)	Mt. Olive Rd (Road A) to Chambers Rd	115 vph (EB) 35 vph (WB) 0.08 (v/c) B (52%)	N/A	105 vph (EB) 80 vph (WB) 0.07 (v/c) B (44%)	N/A	195 vph (EB) 115 vph (WB) 0.13 (v/c) C (57%)	N/A

Without improvements, the results indicate that four roadway segments will not achieve the LOS 'D' standard with the 2025 Background Volumes.

Roadway Segment Analysis Results, 2025 Projected Volumes

Table 15 summarizes the results of the roadway segment analysis for the 2025 Projected Volumes. Poor operating conditions are highlighted. Roadway segment analysis reports for the 2025 Projected Volumes are provided in Appendix P.

Table 15: ROADWAY SEGMENT ANALYSIS, EVALUATION OF 2025 PROJECTED VOLUMES

ROADWAY	SEGMENT	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
		TWO-LANE	MULTILANE	TWO-LANE	MULTILANE	TWO-LANE	MULTILANE
Jodeco Rd	Patrick Henry Pkwy to I-75 NB Ramps	N/A	922 vph (EB) 1045 vph (WB) B (12.7)	N/A	895 vph (EB) 845 vph (WB) A (11.0)	N/A	723 vph (EB) 888 vph (WB) A (10.9)
	I-75 NB Ramps to I-75 SB Ramps	N/A	858 vph (EB) 515 vph (WB) A (10.5)	N/A	675 vph (EB) 610 vph (WB) A (8.3)	N/A	1115 vph (EB) 573 vph (WB) B (13.7)
	I-75 SB Ramps to Road A (Mt. Olive Rd)	N/A	1600 vph (EB) 1238 vph (WB) C (19.5)	N/A	1664 vph (EB) 1587 vph (WB) C (20.3)	N/A	1673 vph (EB) 1690 vph (WB) C (20.6)
	Road A (Mt. Olive Rd) to Chambers Rd	1069 vph (EB) 626 vph (WB) 0.71 (v/c) E (92%)	N/A	1087 vph (EB) 735 vph (WB) 0.73 (v/c) E (92%)	1087 vph (EB) 735 vph (WB) B (13.3)	836 vph (EB) 664 vph (WB) 0.56 (v/c) E (87%)	N/A
	Chambers Rd to Mt. Olive Rd (West)	661 vph (EB) 457 vph (WB) 0.44 (v/c) D (84%)	N/A	932 vph (EB) 538 vph (WB) 0.62 (v/c) E (90%)	932 vph (EB) 538 vph (WB) B (11.4)	723 vph (EB) 522 vph (WB) 0.48 (v/c) D (84%)	N/A
	Mt. Olive Rd (West) to Flippen Rd	746 vph (EB) 642 vph (WB) 0.50 (v/c) D (83%)	N/A	1152 vph (EB) 658 vph (WB) 0.77 (v/c) E (93%)	1152 vph (EB) 658 vph (WB) B (14.1)	933 vph (EB) 737 vph (WB) 0.62 (v/c) E (88%)	N/A
Chambers Rd	Jodeco Rd to Mt. Olive Rd (West)	427 vph (NB) 156 vph (SB) 0.29 (v/c) D (74%)	N/A	196 vph (NB) 285 vph (SB) 0.19 (v/c) C (66%)	N/A	268 vph (NB) 277 vph (SB) 0.19 (v/c) C (63%)	N/A
	Mt. Olive Rd (West) to McCullough Rd	522 vph (NB) 251 vph (SB) 0.35 (v/c) D (76%)	N/A	296 vph (NB) 468 vph (SB) 0.31 (v/c) D (74%)	N/A	333 vph (NB) 303 vph (SB) 0.22 (v/c) C (67%)	N/A
Jonesboro Rd	Henry Town Center to Mt. Olive Rd	958 vph (EB) 1099 vph (WB) 0.73 (v/c) E (92%)	N/A	1219 vph (EB) 1116 vph (WB) 0.81 (v/c) E (94%)	N/A	1208 vph (EB) 1372 vph (WB) 0.92 (v/c) E (96%)	1208 vph (EB) 1372 vph (WB) B (16.8)
	Mt. Olive Rd to Chambers Rd	800 vph (EB) 756 vph (WB) 0.53 (v/c) E (85%)	N/A	1113 vph (EB) 789 vph (WB) 0.74 (v/c) E (92%)	1113 vph (EB) 789 vph (WB) B (13.6)	960 vph (EB) 1018 vph (WB) 0.68 (v/c) E (90%)	N/A
Mt. Olive Rd	Mt. Olive Rd (West) to Rear Ent. HTC	424 vph (NB) 347 vph (SB) 0.28 (v/c) D (72%)	N/A	752 vph (NB) 681 vph (SB) 0.50 (v/c) D (84%)	N/A	912 vph (NB) 851 vph (SB) 0.61 (v/c) E (88%)	912 vph (NB) 851 vph (SB) B (11.1)
	Rear Ent. To HTC to Jonesboro Rd	424 vph (NB) 337 vph (SB) 0.28 (v/c) D (71%)	N/A	732 vph (NB) 671 vph (SB) 0.49 (v/c) D (84%)	N/A	922 vph (NB) 871 vph (SB) 0.62 (v/c) E (89%)	922 vph (NB) 871 vph (SB) B (11.2)
Mt. Olive Rd (West)	Road A (Mt. Olive Rd) to Chambers Rd	40 vph (EB) 125 vph (WB) 0.08 (v/c) B (53%)	N/A	105 vph (EB) 80 vph (WB) 0.07 (v/c) B (44%)	N/A	115 vph (EB) 195 vph (WB) 0.13 (v/c) C (58%)	N/A

Table 15: ROADWAY SEGMENT ANALYSIS, EVALUATION OF 2025 PROJECTED VOLUMES (continued)

ROADWAY	SEGMENT	AM PEAK HOUR		PM PEAK HOUR		SATURDAY NOON PEAK HOUR	
		TWO-LANE	MULTILANE	TWO-LANE	MULTILANE	TWO-LANE	MULTILANE
Road A (Mt. Olive Rd)	Jodeco Rd to D/W #11/Road B	820 vph (NB) 841 vph (SB) 0.56 (v/c) E (86%)	N/A	1167 vph (NB) 1357 vph (SB) 0.91 (v/c) E (96%)	N/A	1455 vph (NB) 1484 vph (SB) 0.99 (v/c) E (97%)	1455 vph (NB) 1484 vph (SB) C (18.1)
	D/W #11/Road B to D/W #3/Road C	641 vph (NB) 639 vph (SB) 0.43 (v/c) D (81%)	N/A	994 vph (NB) 1048 vph (SB) 0.70 (v/c) E (91%)	N/A	1204 vph (NB) 1186 vph (SB) 0.80 (v/c) E (93%)	1204 vph (NB) 1186 vph (SB) B (14.7)
	D/W #3/Road C to D/W #7	415 vph (NB) 403 vph (SB) 0.28 (v/c) D (71%)	N/A	744 vph (NB) 707 vph (SB) 0.50 (v/c) D (84%)	N/A	858 vph (NB) 845 vph (SB) 0.57 (v/c) E (87%)	858 vph (NB) 845 vph (SB) A (10.4)
	D/W #7 to Mt. Olive Rd	285 vph (NB) 312 vph (SB) 0.21 (v/c) C (65%)	N/A	556 vph (NB) 576 vph (SB) 0.37 (v/c) D (76%)	N/A	742 vph (NB) 711 vph (SB) 0.50 (v/c) D (80%)	742 vph (NB) 711 vph (SB) A (9.0)

Without improvements, the results indicate that ten roadway segments will not achieve the LOS 'D' standard with the 2025 Projected Volumes.

Figures 20A, 20B, 20C, and 20D illustrate the results of the roadway segment analysis for the Existing and Projected Volumes.

Figure 20A: RESULTS OF ROADWAY SEGMENT ANALYSIS, JODECO RD

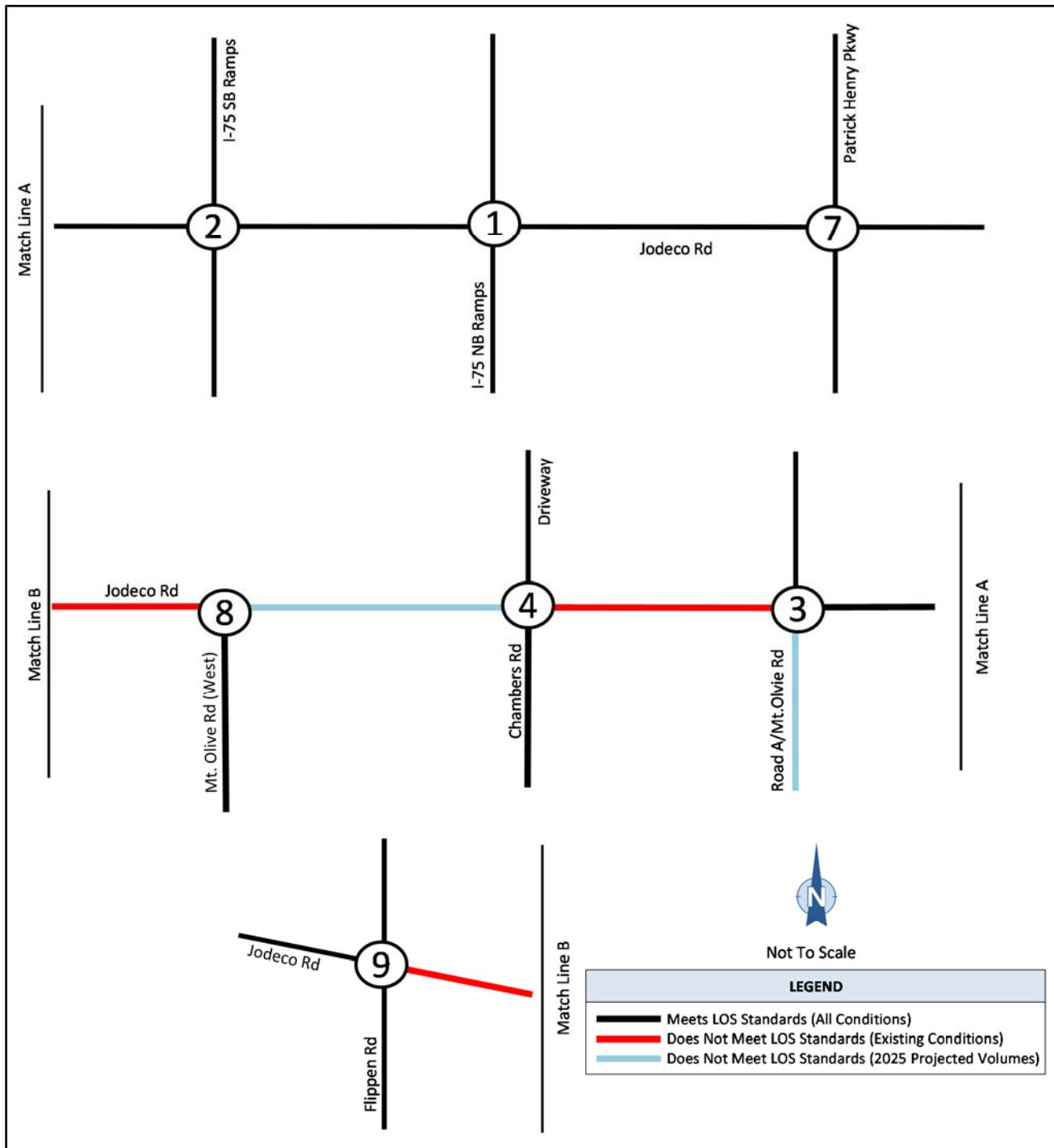
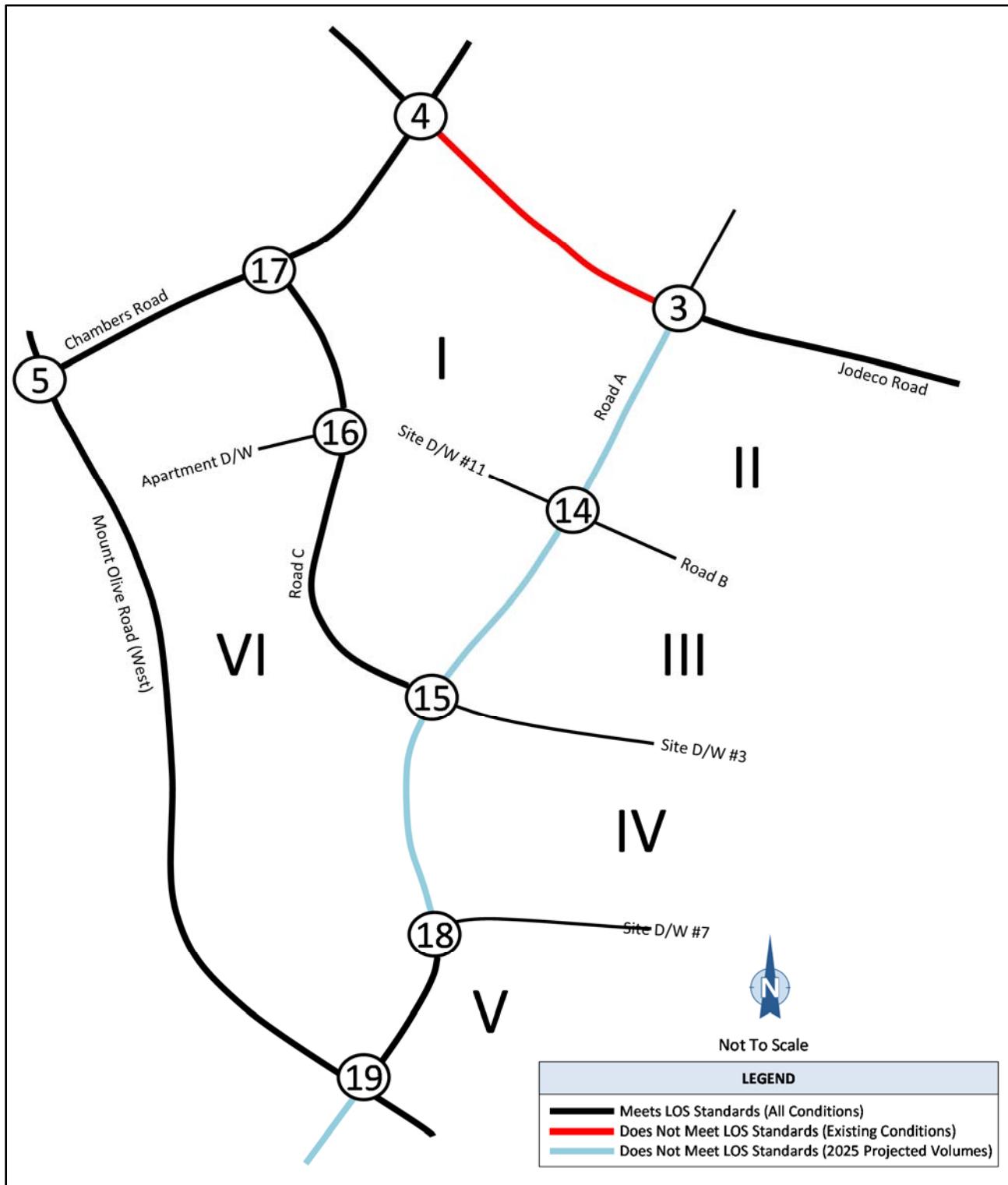


Figure 20B: RESULTS OF ROADWAY SEGMENT ANALYSIS, INTERNAL TO THE SITE



**Figure 20C: RESULTS OF ROADWAY SEGMENT ANALYSIS,
CHAMBERS RD & MT. OLIVE RD (WEST)**

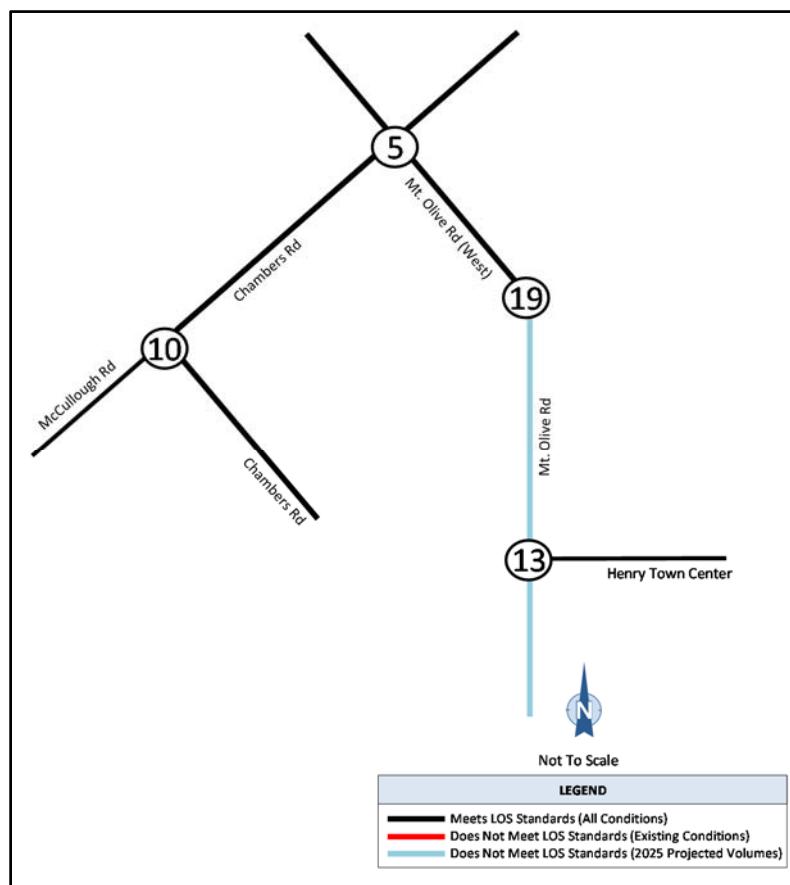
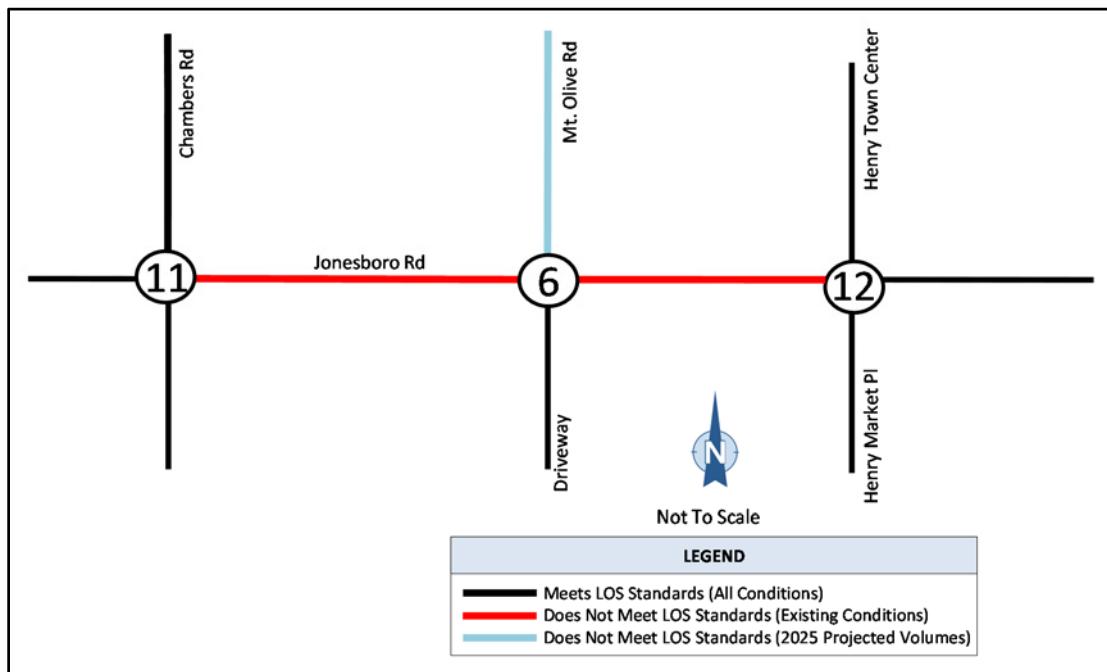


Figure 20D: RESULTS OF ROADWAY SEGMENT ANALYSIS, JONESBORO RD



The previous sections identified that stop control operation at some of the unsignalized intersections will not provide acceptable LOS with the Existing and Projected Volumes. Traffic signal control would significantly improve the operation, if warranted. Traffic signal warrant analysis was conducted to determine if warrants would be met for a number of unsignalized intersections with the Existing and Projected Volumes.

The following intersections were evaluated with the Existing and 2025 Background Volumes:

- Jodeco Road & Mt. Olive Road
- Jodeco Road & Chambers Road
- Jonesboro Road & Mt. Olive Road
- Jodeco Road & Mt. Olive Road (West)

The following intersections were evaluated with the 2025 Projected Volumes:

- Jodeco Road & Road A
- Jodeco Road & Chambers Road
- Jonesboro Road & Mt. Olive Road
- Jodeco Road & Mt. Olive Road (West)
- Mt. Olive Road & Rear Entrance to Henry Town Center
- Road A & Road B/Site D/W #11
- Road A & Road C/Site D/W #3
- Road A & D/W #7

The warrant analysis was conducted in accordance with the requirements of the *Manual on Uniform Traffic Control Devices*, 2009 (MUTCD) published by the Federal Highway Administration.

According to the MUTCD, the investigation of the need for traffic control signal shall include an analysis of the applicable factors contained in the following traffic signal warrants and other factors related to existing operation and safety at the study intersection:

- Warrant 1 – Eight-Hour Vehicular Volume
- Warrant 2 – Four-Hour Vehicular Volume
- Warrant 3 – Peak Hour
- Warrant 4 – Pedestrian Volume
- Warrant 5 – School Crossing
- Warrant 6 – Coordinated Signal System
- Warrant 7 – Crash Experience
- Warrant 8 – Roadway Network

The MUTCD contains provisions for reducing the minimum volumes when the major street speed exceeds 40 mph. Since the speed limits on Jodeco Road and Jonesboro Road are 45 mph, the warrant analysis was conducted using the 70% threshold volumes.

The warrant analysis was conducted in two ways: the conventional method, using the side street volumes, and the alternate method, using the main street left turn volumes. This traffic signal warrant analysis was conducted using the 8th Highest Hour method to evaluate the vehicular volume-related warrants (Warrants 1 and 2).

Daily volumes are necessary for the signal warrant analysis. The K-Factor was derived by blending the 24-hour data from count station #1510225 on Jodeco Road and collected 24-hour data from Jonesboro Road. The blended K-Factor is 9.1%. The daily volumes were derived for the turning movement by taking the peak hour volume and dividing by the K-Factor of 9.1%.

The 8th Highest Hour volumes were estimated applying a factor of 5.6% to the Existing Volumes, 2025 Background Volumes, and 2025 Projected Volumes. The 5.6% factor is in accordance with the GDOT Design Manual.

Further analysis was conducted to check each of the intersections against Warrant 2 – Four Hour Vehicular Volume. The 4th highest hour was calculated to be 7.4% from a blend of 24-hour data from count station #1510225 on Jodeco Road and collected 24-hour data on Jonesboro Road.

The derived 8th and 4th highest hour volumes were compared to the warrant requirements contained in the *Manual on Uniform Traffic Control Devices, 2009* (MUTCD) published by the Federal Highway Administration.

Signal Warrant Analysis, Existing Conditions

Table 16 shows the results of the signal warrant analysis using the Existing Volumes via the conventional method.

Table 16: EXISTING SIGNAL WARRANT ANALYSIS (CONVENTIONAL METHOD)

WARRANT 1

INTERSECTION	DAILY VOLUME		8 th HIGHEST HOUR		CONDITION A – MET?		CONDITION B – MET?	
	MAJOR ROAD	MINOR ROAD	MAJOR ROAD	MINOR ROAD	MAJOR ROAD (>420 vph)	MINOR ROAD (>140 vph)	MAJOR ROAD (>630 vph)	MINOR ROAD (>70 vph)
Jodeco Rd & Mt. Olive Rd	15,125	100	847	6	Yes	No	Yes	No
Jodeco Rd & Chambers Rd	8,800	275	493	15	Yes	No	No	No
Jonesboro Rd & Mt. Olive Rd	16,900	725	946	41	Yes	No	Yes	No
Jodeco Rd & Mt. Olive Rd (West)	9,325	2,200	522	123	Yes	No	No	Yes

WARRANT 2

DAILY VOLUME	MAJOR ROAD	MINOR ROAD	ESTIMATED FOUR HIGHEST HOURS				Warrant 2 Met? 1000/80
			Hour 1	Hour 2	Hour 3	Hour 4	
			9.1%	8.2%	7.5%	7.4%	
Jodeco Rd & Mt. Olive Rd	15,125	100	1,376/9	1,240/8	1,134/8	1,119/7	No
Jodeco Rd & Chambers Rd	8,800	275	801/25	722/23	660/21	651/20	No
Jonesboro Rd & Mt. Olive Rd	16,900	725	1,538/66	1,386/60	1,268/54	1,251/54	No
Jonesboro Rd & Mt. Olive Rd (West)	9,325	2,200	849/200	765/180	699/165	690/163	No

None of the intersections evaluated meet signal warrants using the Existing Volumes via the conventional method.

Table 17 shows the results of the signal warrant analysis using the Existing Volumes via the alternate method.

Table 17: EXISTING SIGNAL WARRANT ANALYSIS (ALTERNATE METHOD)

WARRANT 1

INTERSECTION	DAILY VOLUME		8 th HIGHEST HOUR		CONDITION A – MET?		CONDITION B – MET?	
	MAJOR ROAD	MINOR ROAD	MAJOR ROAD	MINOR ROAD	MAJOR ROAD (>420 vph)	MINOR ROAD (>140 vph)	MAJOR ROAD (>630 vph)	MINOR ROAD (>70 vph)
Jodeco Rd & Mt. Olive Rd	9,250	225	518	13	Yes	No	No	No
Jodeco Rd & Chambers Rd	6,325	2,375	354	133	No	No	No	Yes
Jonesboro Rd & Mt. Olive Rd	8,425	1,175	472	66	Yes	No	No	No
Jodeco Rd & Mt. Olive Rd (West)	6,600	100	370	6	No	No	No	No

WARRANT 2

DAILY VOLUME	MAJOR ROAD	MINOR ROAD	ESTIMATED FOUR HIGHEST HOURS				Warrant 2 Met? 1000/80
			Hour 1	Hour 2	Hour 3	Hour 4	
			9.1%	8.2%	7.5%	7.4%	
Jodeco Rd & Mt. Olive Rd	9,250	225	842/21	759/19	694/17	685/17	No
Jodeco Rd & Chambers Rd	6,325	2,375	576/216	519/195	474/178	468/176	No
Jonesboro Rd & Mt. Olive Rd	8,425	1,175	767/107	691/96	632/88	624/87	No
Jonesboro Rd & Mt. Olive Rd (West)	6,600	100	601/9	541/8	495/8	488/7	No

None of the intersections evaluated meet signal warrants using the Existing Volumes via the alternate method.

Signal Warrant Analysis, 2025 Background Volumes

Table 18 shows the results of the signal warrant analysis using the 2025 Background Volumes via the conventional method.

Table 18: 2025 BACKGROUND SIGNAL WARRANT ANALYSIS (CONVENTIONAL METHOD)

WARRANT 1

INTERSECTION	DAILY VOLUME		8 th HIGHEST HOUR		CONDITION A – MET?		CONDITION B – MET?	
	MAJOR ROAD	MINOR ROAD	MAJOR ROAD	MINOR ROAD	MAJOR ROAD (>420 vph)	MINOR ROAD (>140 vph)	MAJOR ROAD (>630 vph)	MINOR ROAD (>70 vph)
Jodeco Rd & Mt. Olive Rd	11,550	125	647	7	Yes	No	Yes	No
Jodeco Rd & Chambers Rd	9,725	350	545	20	Yes	No	No	No
Jonesboro Rd & Mt. Olive Rd	18,425	725	1,032	41	Yes	No	Yes	No
Jodeco Rd & Mt. Olive Rd (West)	10,275	2,425	575	136	Yes	No	No	Yes

WARRANT 2

DAILY VOLUME	MAJOR ROAD	MINOR ROAD	ESTIMATED FOUR HIGHEST HOURS				Warrant 2 Met? 1000/80
			Hour 1	Hour 2	Hour 3	Hour 4	
			9.1%	8.2%	7.5%	7.4%	
Jodeco Rd & Mt. Olive Rd	11,550	125	1,051/11	947/10	866/9	855/9	No
Jodeco Rd & Chambers Rd	9,725	350	885/32	798/29	729/26	720/26	No
Jonesboro Rd & Mt. Olive Rd	18,425	725	1,677/66	1,511/60	1,382/54	1,364/54	No
Jonesboro Rd & Mt. Olive Rd (West)	10,275	2,425	935/221	843/199	771/182	760/180	No

None of the intersections evaluated meet signal warrants using the 2025 Background Volumes via the conventional method.

Table 19 shows the results of the signal warrant analysis using the 2025 Background Volumes via the alternate method.

Table 19: 2025 BACKGROUND SIGNAL WARRANT ANALYSIS (ALTERNATE METHOD)

WARRANT 1

INTERSECTION	DAILY VOLUME		8 th HIGHEST HOUR		CONDITION A – MET?		CONDITION B – MET?	
	MAJOR ROAD	MINOR ROAD	MAJOR ROAD	MINOR ROAD	MAJOR ROAD (>420 vph)	MINOR ROAD (>140 vph)	MAJOR ROAD (>630 vph)	MINOR ROAD (>70 vph)
Jodeco Rd & Mt. Olive Rd	10,175	225	570	13	Yes	No	No	No
Jodeco Rd & Chambers Rd	7,000	2,375	392	133	No	No	No	Yes
Jonesboro Rd & Mt. Olive Rd	9,300	1,325	521	74	Yes	No	No	Yes
Jodeco Rd & Mt. Olive Rd (West)	10,400	75	582	4	Yes	No	No	No

WARRANT 2

DAILY VOLUME	MAJOR ROAD	MINOR ROAD	ESTIMATED FOUR HIGHEST HOURS				Warrant 2 Met? 1000/80
			Hour 1	Hour 2	Hour 3	Hour 4	
			9.1%	8.2%	7.5%	7.4%	
Jodeco Rd & Mt. Olive Rd	10,175	225	926/21	834/19	763/17	753/17	No
Jodeco Rd & Chambers Rd	7,000	2,375	637/216	574/195	525/178	518/176	No
Jonesboro Rd & Mt. Olive Rd	9,300	1,325	846/121	763/109	698/99	688/98	No
Jonesboro Rd & Mt. Olive Rd (West)	10,400	75	946/7	853/6	780/6	770/6	No

None of the intersections evaluated meet signal warrants using the 2025 Background Volumes via the alternate method.

Signal Warrant Analysis, 2025 Projected Volumes

Table 20 shows the results of the signal warrant analysis using the 2025 Projected Volumes via the conventional method.

Table 20: 2025 PROJECTED SIGNAL WARRANT ANALYSIS (CONVENTIONAL METHOD)

WARRANT 1

INTERSECTION	DAILY VOLUME		8 th HIGHEST HOUR		CONDITION A – MET?		CONDITION B – MET?	
	MAJOR ROAD	MINOR ROAD	MAJOR ROAD	MINOR ROAD	MAJOR ROAD (>420 vph)	MINOR ROAD (>140 vph)	MAJOR ROAD (>630 vph)	MINOR ROAD (>70 vph)
Jodeco Rd & Road A	25,850	3,375	1,448	189	Yes	Yes	Yes	Yes
Jodeco Rd & Chambers Rd	15,250	550	854	31	Yes	No	Yes	No
Jonesboro Rd & Mt. Olive Rd	25,650	5,925	1,436	332	Yes	Yes	Yes	Yes
Jodeco Rd & Mt. Olive Rd (West)	16,000	2,425	896	136	Yes	No	Yes	Yes
Mt. Olive Rd & Rear Ent. To HTC	19,500	1,000	1,092	56	Yes	No	Yes	No
Road A & Road B/Site DW #11	29,550	3,300	1,655	185	Yes	Yes	Yes	Yes
Road A & Road C/Site DW #3	22,475	3,125	1,259	175	Yes	Yes	Yes	Yes
Road A & Site DW #7	17,450	1,275	977	71	Yes	No	Yes	Yes

WARRANT 2

DAILY VOLUME	MAJOR ROAD	MINOR ROAD	ESTIMATED FOUR HIGHEST HOURS				Warrant 2 Met? 1000/80
			Hour 1	Hour 2	Hour 3	Hour 4	
			9.1%	8.2%	7.5%	7.4%	
Jodeco Rd & Road A	25,850	3,375	2,352/307	2,120/277	1,939/253	1,913/250	Yes
Jodeco Rd & Chambers Rd	15,250	550	1,388/50	1,251/45	1,144/41	1,129/41	No
Jonesboro Rd & Mt. Olive Rd	25,650	5,925	2,334/539	2,125/486	1,924/444	1,898/439	Yes
Jodeco Rd & Mt. Olive Rd (West)	16,000	2,425	1,456/221	1,325/199	1,200/182	1,184/180	Yes
Mt. Olive Rd & Rear Ent. To HTC	19,500	1,000	1,775/91	1,599/82	1,463/75	1,443/74	No
Road A & Road B/Site DW #11	29,550	3,300	2,689/300	2,423/271	2,216/248	2,187/244	Yes
Road A & Road C/Site DW #3	22,475	3,125	2,045/284	1,843/256	1,686/234	1,663/231	Yes
Road A & Site DW #7	17,450	1,275	1,588/116	1,431/105	1,309/96	1,291/94	Yes

Six of the eight intersections evaluated met signal warrant 1 or 2 using the 2025 Projected Volumes via the conventional method. The remaining two intersections (Jodeco Road at Chambers Road and Mt. Olive Road at Rear Entrance to Henry Town Center) were evaluated via the alternate method.

Table 21 shows the results of the signal warrant analysis using the 2025 Projected Volumes via the alternate method.

Table 21: 2025 PROJECTED SIGNAL WARRANT ANALYSIS (ALTERNATE METHOD)

WARRANT 1

INTERSECTION	DAILY VOLUME		8 th HIGHEST HOUR		CONDITION A – MET?		CONDITION B – MET?	
	MAJOR ROAD	MINOR ROAD	MAJOR ROAD	MINOR ROAD	MAJOR ROAD (>420 vph)	MINOR ROAD (>140 vph)	MAJOR ROAD (>630 vph)	MINOR ROAD (>70 vph)
Jodeco Rd & Chambers Rd	9,475	2,375	530	133	Yes	No	No	Yes
Mt. Olive Rd & Rear Ent. To HTC	10,150	1,225	568	69	Yes	No	No	No

WARRANT 2

DAILY VOLUME	MAJOR ROAD	MINOR ROAD	ESTIMATED FOUR HIGHEST HOURS				Warrant 2 Met? 1000/80
			Hour 1	Hour 2	Hour 3	Hour 4	
			9.1%	8.2%	7.5%	7.4%	
Jodeco Rd & Chambers Rd	9,475	2,375	862/216	777/195	711/178	701/176	No
Mt. Olive Rd & Rear Ent. To HTC	10,150	1,225	924/112	832/101	761/92	751/91	No

The two intersections (Chambers Road at Jodeco Road and Rear Entrance to Henry Town Center at Mt. Olive Road) do not meet signal warrant 1 or 2 via the alternate method.

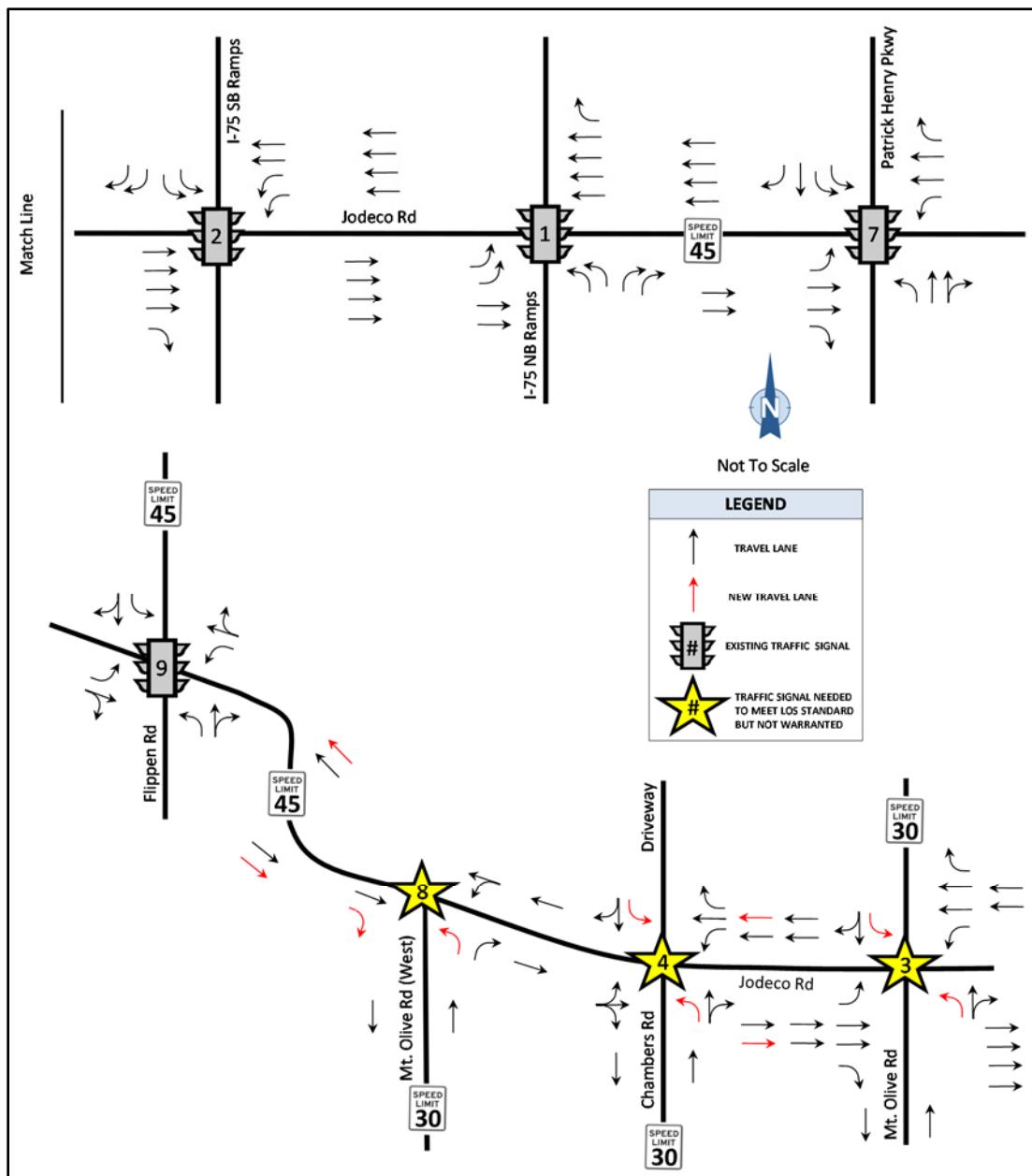
Several intersections will not meet LOS standards without traffic signals. However, some of these intersections will not meet signal warrants. A solution to improve the operation at some of the unsignalized intersections would be to convert the intersections to right-in right-out with a concrete median and indirect left turn system.

The required improvements are shown on the following pages incrementally for each condition (Existing, 2025 Background, and 2025 Projected).

Required Improvements w/Existing Conditions

Figures 21A, 21B, and 21C show the required improvements with the Existing Conditions.

Figure 21A: REQ. MINIMUM IMPROVEMENTS, EXISTING CONDITIONS, JODECO RD



**Figure 21B: REQ. MINIMUM IMPROVEMENTS, EXISTING CONDITIONS,
CHAMBERS RD & MT. OLIVE RD (WEST)**

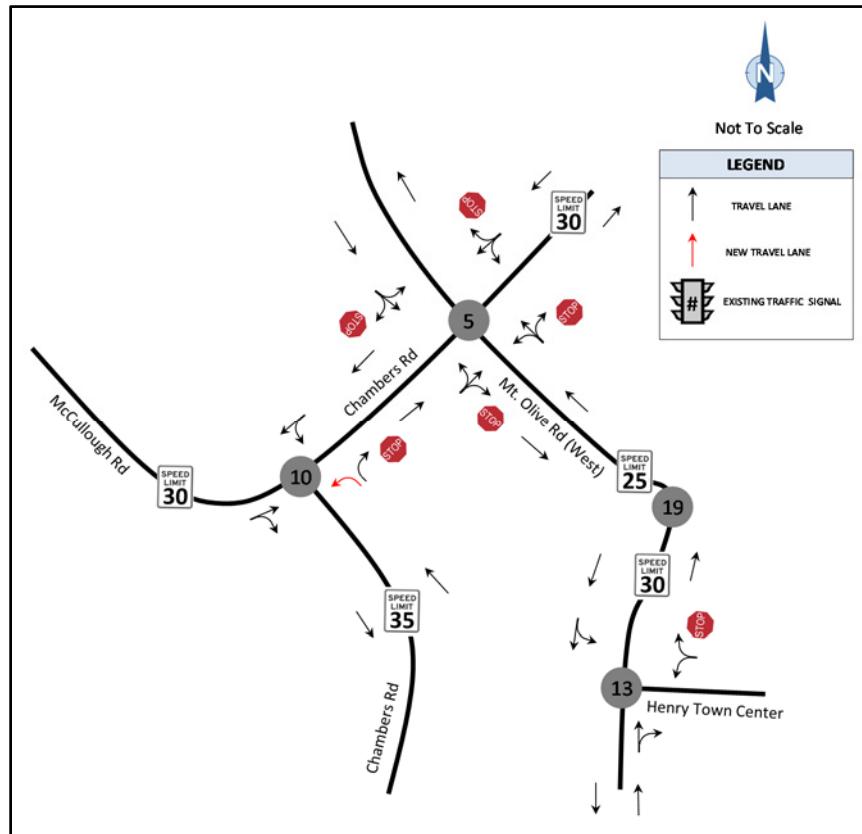
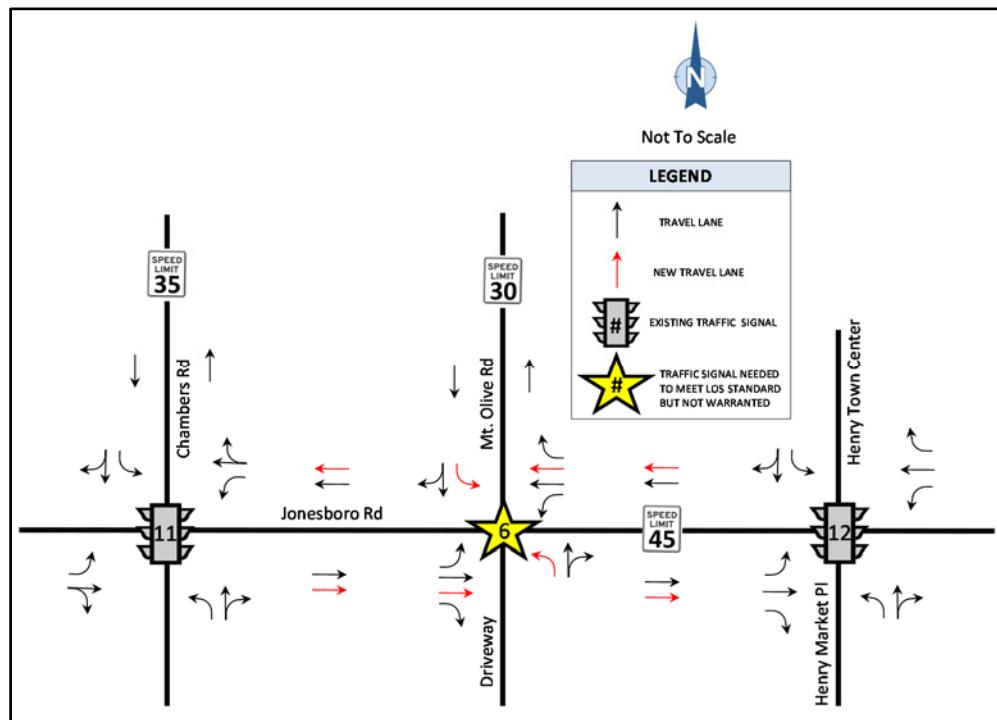


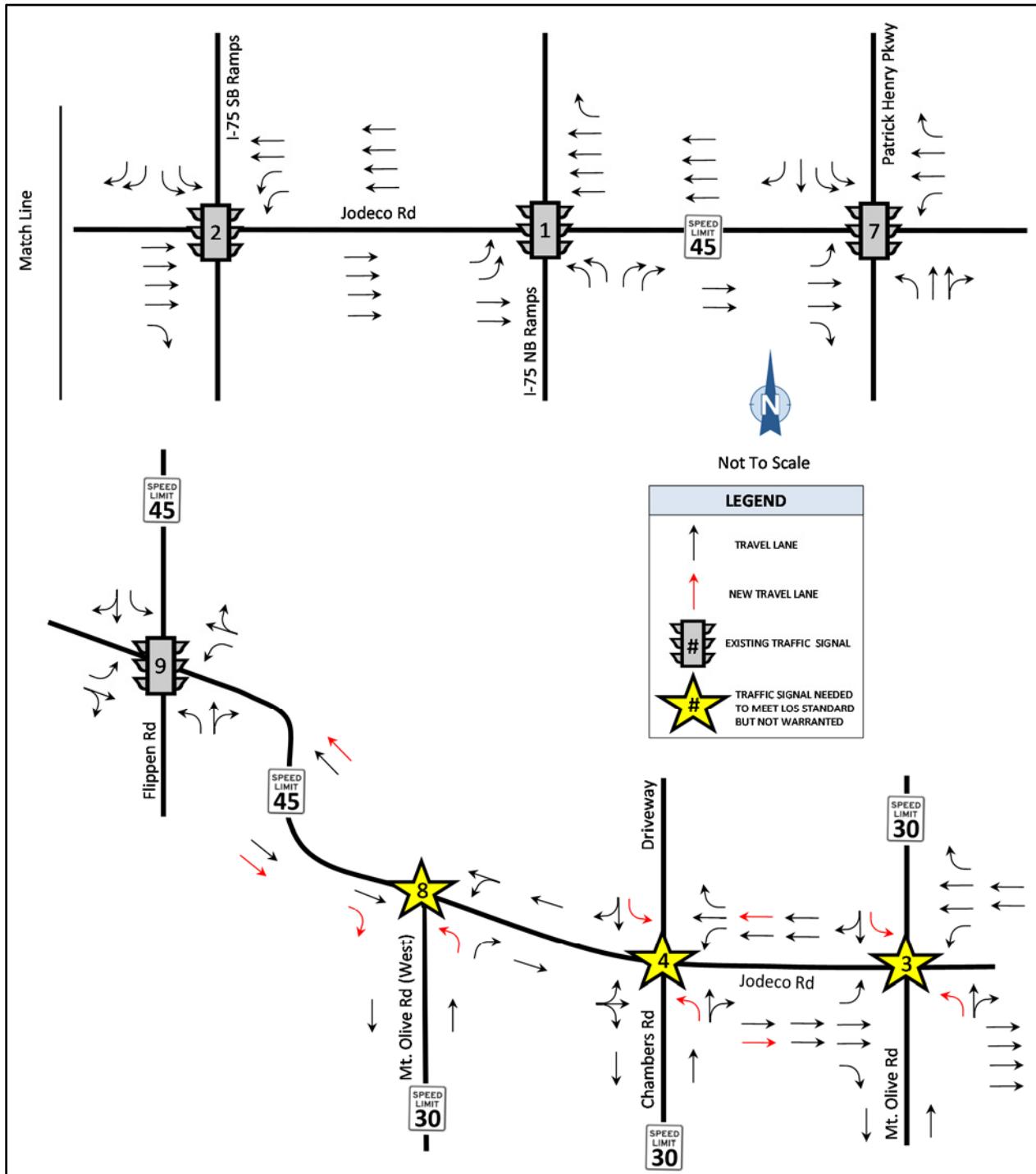
Figure 21C: REQ. MINIMUM IMPROVEMENTS, EXISTING CONDITIONS, JONESBORO RD



Required Improvements w/2025 Background Volumes

Figures 22A, 22B, and 22C show the required minimum improvements with the 2025 Background Volumes.

Figure 22A: REQ. MINIMUM IMPROVEMENTS, 2025 BACKGROUND VOLUMES, JODECO RD



**Figure 22B: REQ. MINIMUM IMPROVEMENTS, 2025 BACKGROUND VOLUMES,
CHAMBERS RD & MT. OLIVE RD (WEST)**

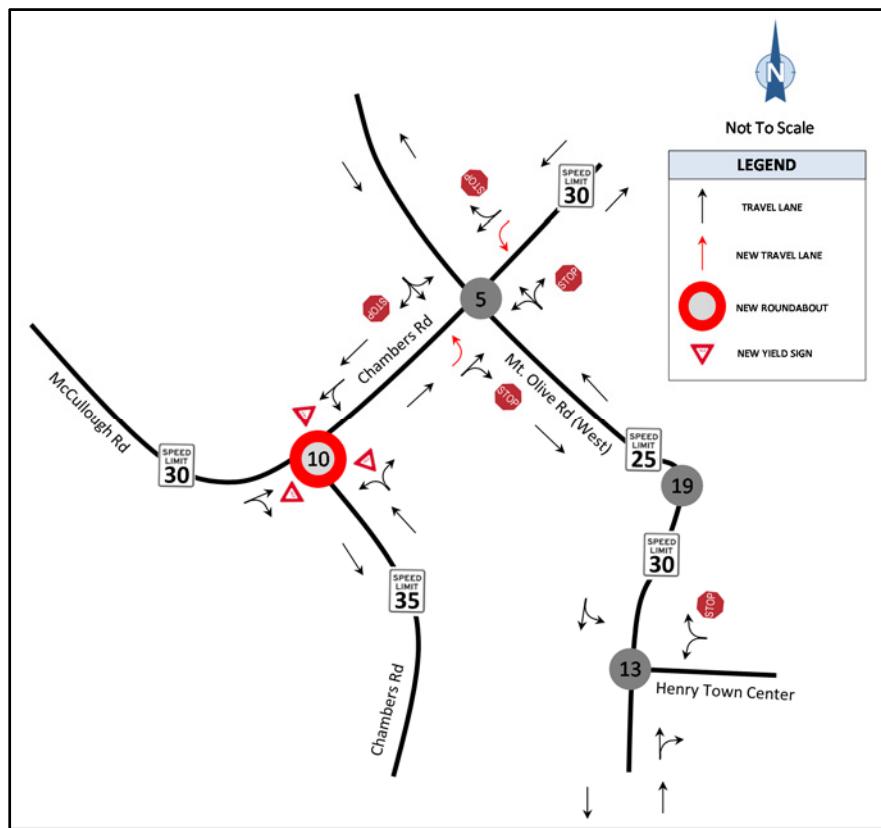
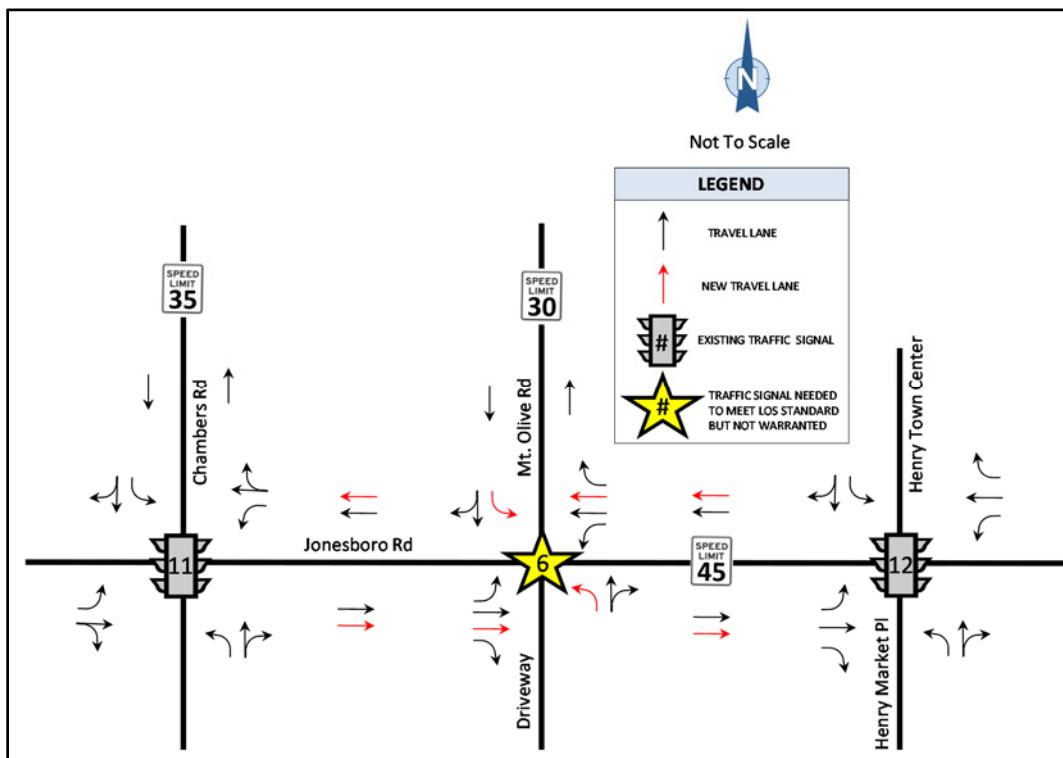


Figure 22C: REQ. MINIMUM IMPROVEMENTS, 2025 BACKGROUND VOLUMES, JONESBORO RD



Required Improvements w/2025 Projected Volumes

Figures 23A, 23B, 23C, and 23D show the required minimum improvements with the 2025 Projected Volumes.

Figure 23A: REQ. MINIMUM IMPROVEMENTS, 2025 PROJECTED VOLUMES, JODECO RD

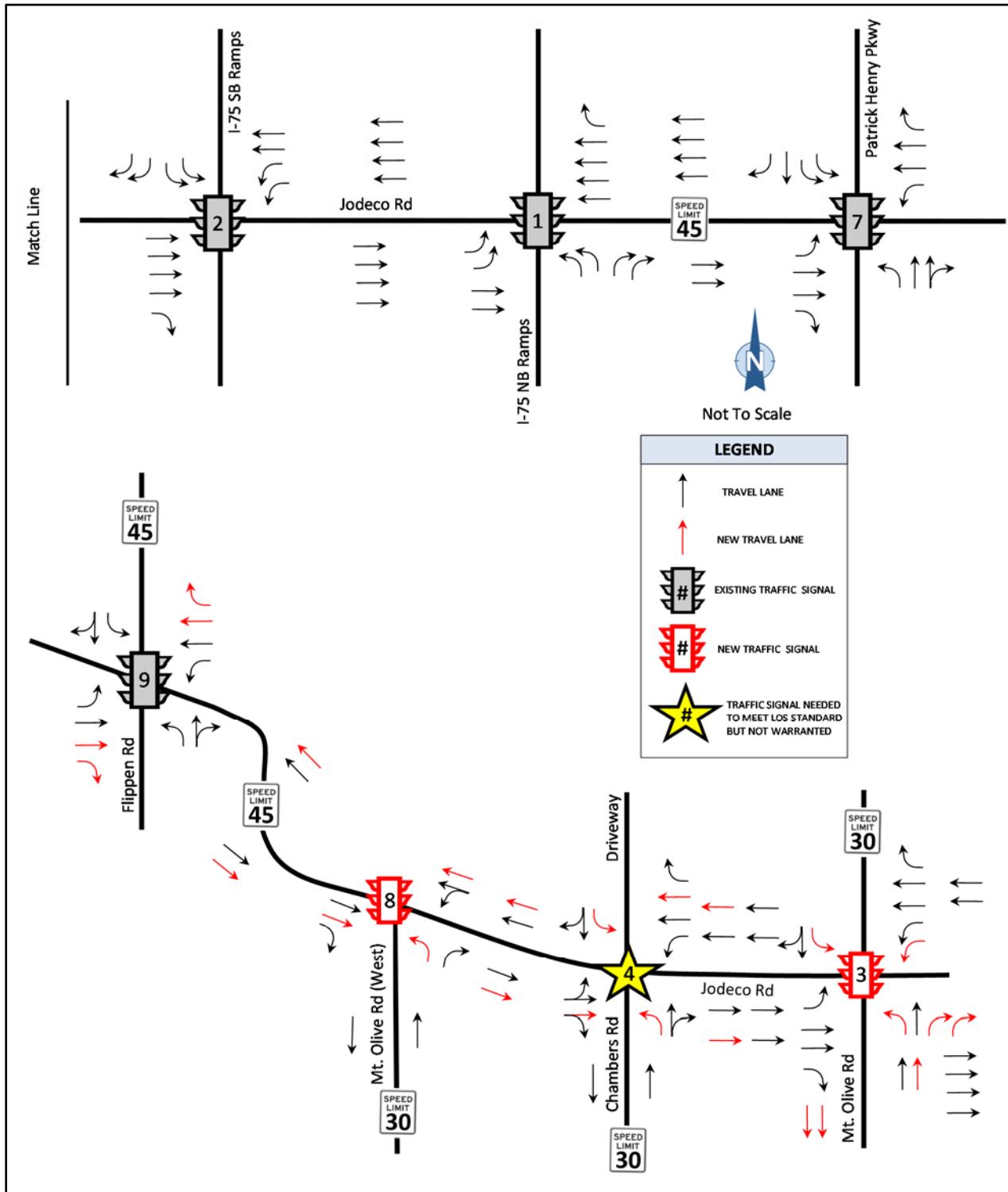


Figure 23B: REQ. MINIMUM IMPROVEMENTS, 2025 PROJECTED VOLUMES, INTERNAL TO THE SITE

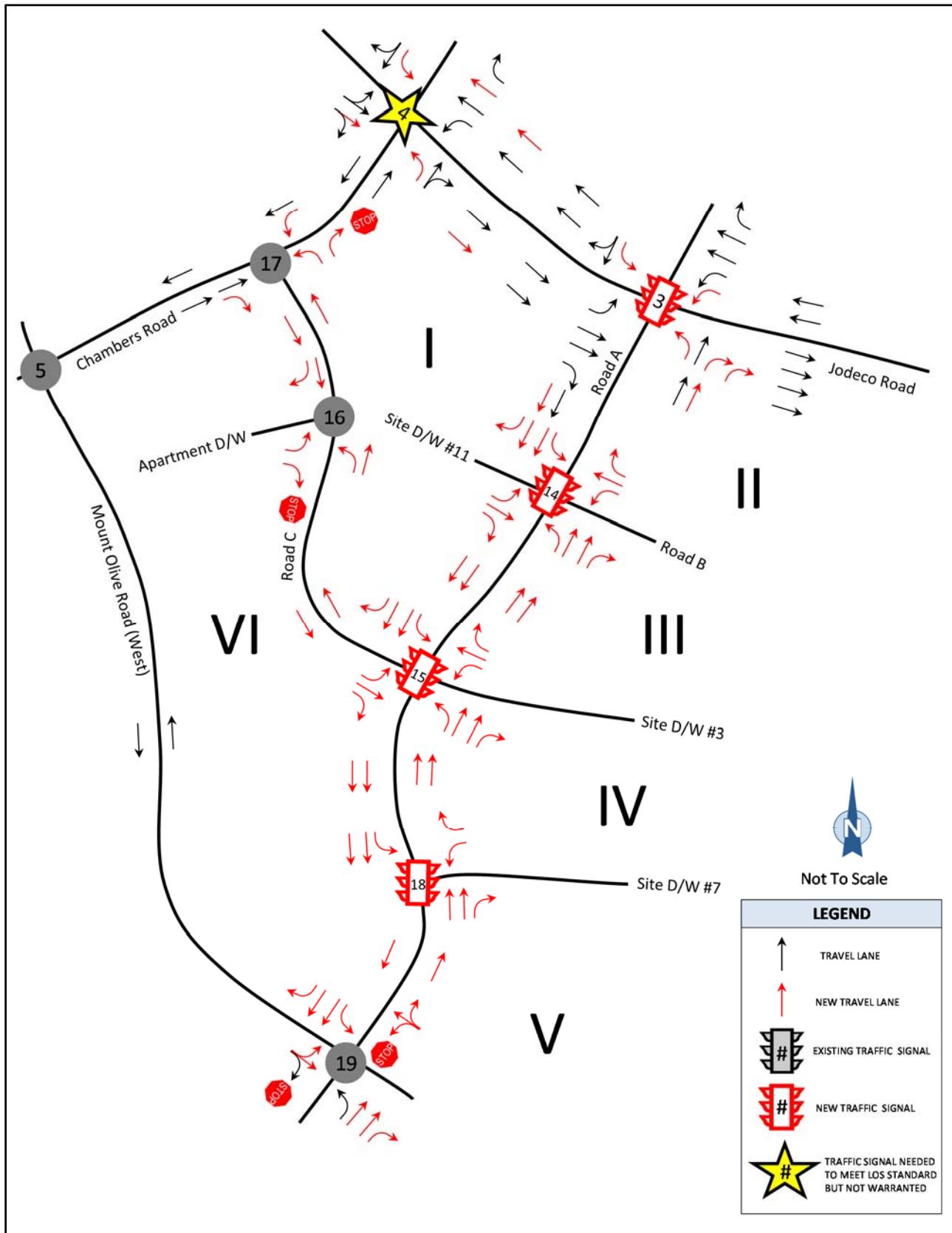


Figure 23C: REQ. MINIMUM IMPROVEMENTS, 2025 PROJECTED VOLUMES,
CHAMBERS RD & MT. OLIVE RD (WEST)

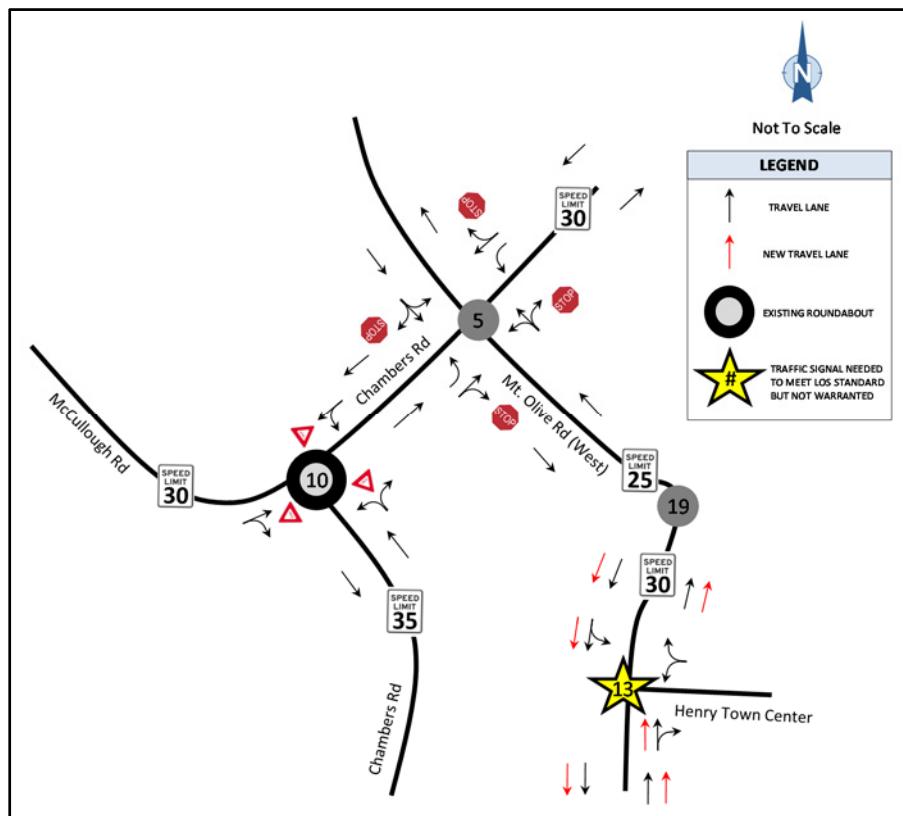


Figure 23D: REQ. MINIMUM IMPROVEMENTS, 2025 PROJECTED VOLUMES, JONESBORO RD

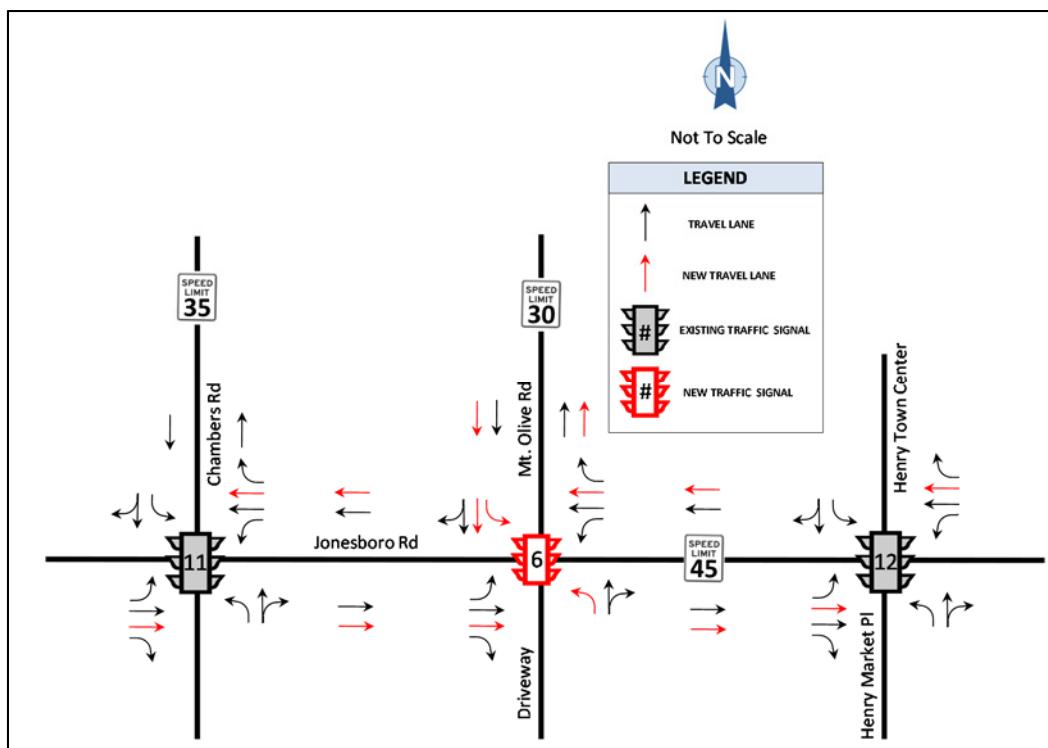


Table 22 shows a summary of the minimum intersection improvements necessary for each of the evaluated conditions (Existing, 2025 Background, and 2025 Projected) to achieve the LOS ‘D’ standard at each intersection.

Table 22: SUMMARY OF MINIMUM INTERSECTION IMPROVEMENTS FOR ALL EVALUATED VOLUMES

INTERSECTION	SUMMARY OF MINIMUM INTERSECTION IMPROVEMENTS TO REACH LOS ‘D’ STANDARD FOR ALL EVALUATED VOLUMES		
	EXISTING	2025 BACKGROUND VOLUMES	2025 PROJECTED VOLUMES
Jodeco Rd & I-75 NB Ramps	N/A	N/A	N/A
Jodeco Rd & I-75 SB Ramps	N/A	N/A	N/A
Jodeco Rd & Mt. Olive Rd (Road A)	Install New Signal Added Turn Lanes: NBL & SBL (NOTE: Signal not Warranted)	Install New Signal Added Turn Lanes: NBL & SBL (NOTE: Signal not Warranted)	Install New Signal Added Turn Lanes: Dual WBL, NBL, Dual NBR, & SBL Protected Only Dual WBL Protected + Permissive WBL, NBL, & SBL Permissive + Overlap NBR
Jodeco Rd & Chambers Rd	Install New Signal Added Turn Lanes: NBL & SBL (NOTE: Signal not Warranted)	Install New Signal Added Turn Lanes: NBL & SBL (NOTE: Signal not Warranted)	Install New Signal Added Turn Lanes: NBL & SBL (NOTE: Signal not Warranted)
Chambers Rd & Mt. Olive Rd (West)	N/A	Added Turn Lanes: EBL & WBL	Added Turn Lanes: EBL & WBL
Jonesboro Rd & Mt. Olive Rd	Install New Signal Added Turn Lanes: NBL & SBL (NOTE: Signal not Warranted)	Install New Signal Added Turn Lanes: NBL & SBL (NOTE: Signal not Warranted)	Install New Signal Added Turn Lanes: NBL & SBL Protected + Permissive on all left turns
Jodeco Rd & Patrick Henry Pkwy	N/A	N/A	N/A
Jodeco Rd & Mt. Olive Rd (West)	Install New Signal Added Turn Lanes: EBR & NBL Permissive NBL (NOTE: Signal not Warranted)	Install New Signal Added Turn Lanes: EBR & NBL Permissive NBL (NOTE: Signal not Warranted)	Install New Signal Added Turn Lanes: EBR & NBL Permissive WBL, NBL
Jodeco Rd & Flippen Rd	N/A	N/A	Added Turn Lanes: EBR & WBR
Chambers Rd & McCullough Rd	Added Turn Lane:WBL	Mini-Roundabout	Mini-Roundabout
Jonesboro Rd & Chambers Rd	N/A	N/A	Added Turn Lanes: EBR & WBR Protected + Permissive on all left turns
Jonesboro Rd & Henry Town Center	N/A	N/A	N/A
Mt. Olive Rd & Rear Entrance to Henry Town Center	N/A	N/A	N/A
Road A (Mt. Olive Rd) & D/W #11/Road B	N/A	N/A	Install New Signal Left and Right Lanes on all app. Protected + Permissive on all left turns
Road A (Mt. Olive Rd)& Road C/D/W #3	N/A	N/A	Install New Signal Left and Right Lanes on all app. Protected + Permissive on all left turns
Apartment D/W & Road C	N/A	N/A	Stop Condition on Apartment D/W Added Turns Lanes: NBL, NBR, WBL, & EBR
Chambers Rd & Road C	N/A	N/A	Stop Condition on Road C Added Turn Lanes: WBL, WBR, NBR, & SBL
Road A (Mt. Olive Rd) & D/W #7	N/A	N/A	Install New Signal Added Turn Lanes: WBL, WBR, NBR, & SBL Permissive EBL, NBL Protected Only WBL Protected + Permissive SBL
Mt. Olive Rd (West) & Road A (Mt. Olive Rd)	N/A	N/A	Stop Condition on Mt. Olive Rd Added Turn Lanes: NBL, NBR, SBL, and SBR

Table 23 shows a summary of the necessary type of roadway segment for each of the evaluated conditions (Existing, 2025 Background, and 2025 Projected) to achieve the LOS 'D' standard for each roadway segment.

Table 23: SUMMARY OF TYPE OF ROADWAY SEGMENT NECESSARY FOR ALL EVALUATED VOLUMES

ROADWAY	SEGMENT	SUMMARY OF TYPE OF ROADWAY SEGMENT NECESSARY TO REACH LOS 'D' STANDARD FOR ALL EVALUATED VOLUMES		
		EXISTING	2025 BACKGROUND VOLUMES	2025 PROJECTED VOLUMES
Jodeco Rd	Patrick Henry Pkwy to I-75 NB Ramps	4-Lane Section	4-Lane Section	4-Lane Section
	I-75 NB Ramps to I-75 SB Ramps	8-Lane Section	8-Lane Section	8-Lane Section
	I-75 SB Ramps to Road A (Mt. Olive Rd)	4-Lane Section	4-Lane Section	4-Lane Section
	Road A (Mt. Olive Rd) to Chambers Rd	4-Lane Section	4-Lane Section	4-Lane Section
	Chambers Rd to Mt. Olive Rd (West)	2-Lane Section	2-Lane Section	4-Lane Section
	Mt. Olive Rd (West) to Flippin Rd	4-Lane Section	4-Lane Section	4-Lane Section
Chambers Rd	Jodeco Rd to Mt. Olive Rd (West)	2-Lane Section	2-Lane Section	2-Lane Section
	Mt. Olive Rd (West) to McCullough Rd	2-Lane Section	2-Lane Section	2-Lane Section
Jonesboro Rd	Henry Town Center to Mt. Olive Rd	4-Lane Section	4-Lane Section	4-Lane Section
	Mt. Olive Rd to Chambers Rd	4-Lane Section	4-Lane Section	4-Lane Section
Mt. Olive Rd	Mt. Olive Rd (West) to Rear Ent. HTC	2-Lane Section	2-Lane Section	4-Lane Section
	Rear Ent. To HTC to Jonesboro Rd	2-Lane Section	2-Lane Section	4-Lane Section
Mt. Olive Rd (West)	Road A (Mt. Olive Rd) to Chambers Rd	2-Lane Section	2-Lane Section	2-Lane Section
Road A (Mt. Olive Rd)	Jodeco Rd to D/W #11/Road B	N/A	N/A	4-Lane Section
	D/W #11/Road B to D/W #3/Road C	N/A	N/A	4-Lane Section
	D/W #3/Road C to D/W #7	N/A	N/A	4-Lane Section
	D/W #7 to Mt. Olive Rd	N/A	N/A	2-Lane Section

A	PHOTOGRAPHIC INVENTORY
B	TURNING MOVEMENT COUNTS
C	24-HOUR DATA (CLASS, VOLUME, AND SPEED)
D	TRIP GENERATION REPORTS
E	CAPACITY ANALYSIS REPORTS, EXISTING CONDITIONS, SIGNALIZED INTERSECTIONS
F.....	CAPACITY ANALYSIS REPORTS, EXISTING CONDITONS, UNSIGNALIZED INTERSECTIONS
G.....	CAPACITY ANALYSIS REPORTS, 2025 BACKGROUND VOLUMES, SIGNALIZED INTERSECTIONS
H.....	CAPACITY ANALYSIS REPORTS, 2025 BACKGROUND VOLUMES, UNSIGNALIZED INTERSECTIONS
I	CAPACITY ANALYSIS REPORTS, 2025 PROJECTED VOLUMES, SIGNALIZED INTERSECTIONS
J	CAPACITY ANALYSIS REPORTS, 2025 PROJECTED VOLUMES, UNSIGNALIZED INTERSECTIONS
K	ROADWAY SEGMENT ANALYSIS REPORTS, EXISTING VOLUMES
L.....	ROADWAY SEGMENT ANALYSIS REPORTS, 2025 BACKGROUND VOLUMES
M	ROADWAY SEGMENT ANALYSIS REPORTS, 2025 PROJECTED VOLUMES