

March 9, 2018

Mr. Joseph LaCivita, Director
Town of Colonie Planning & Economic Development Department
Public Operations Center
347 Old Niskayuna Road
Latham, NY 12110-2289

**Re: Response to Comments, Starlite, Town of Colonie, Albany County, New York,
CM Project No. 116-232**

Dear Mr. LaCivita,

Creighton Manning Engineering, LLP (CM) has reviewed the traffic related comments from the January 8, 2018 Site Plan Review letter. Below is a summary of the comments and our responses.

Comment #7: The project site is located within the Boght Road – Columbia Street GEIS study area, and compliance with that study’s findings statement is highly encouraged and should eliminate the need for a site specific EIS. The Transportation Section of the Boght Road – Columbia Street GEIS was updated in 2011, with updated findings adopted in 2013. These findings outlined several transportation improvements necessary to mitigate the impacts associated with development within the study area. Because of the scale of this project, it is likely a number of these improvements will be required to address the traffic impacts of the proposed project. The concept plans for the project show a regional connector road which would be a new town road that would extend from Route 9 across from Auto Park Drive, through the project site, and intersecting Route 9R across from Johnson Road. A more detailed description of additional transportation improvements necessary to support the project are provided in traffic related comments below.

Response: The “Connector Road” (Johnson Road Extension) identified in the *Boght Road – Columbia Street GEIS* (GEIS) will be constructed as part of the transportation improvements associated with the project. A detailed description of other transportation related improvements will be discussed in response to subsequent comments.

Comment #9: The 2011 Boght Road – Columbia Street GEIS Traffic Update evaluated the project site (referred to in the study as Parcel #28) as being developed with 400,000 square feet of office and 50,000 square feet of commercial. In addition, a sensitivity analysis was done to evaluate the change in improvements if the parcel was developed with 500,000 square feet of mixed use retail. As such, the 150,000 square feet of commercial office is significantly less than the build out analysis included in the GEIS’s Traffic Update.

Response: It is agreed that the 150,000 SF of office space associated with build-out of Phase 1 of the proposed development is less than the land uses identified for Parcel #28 in the GEIS.

Comment #10: The application includes a traffic analysis that evaluates the potential traffic impacts associated with development of the project site with up to 312,000 square feet of office space, as well as additional development in the immediate vicinity of the project site. These additional areas are evaluated with 25,000 square feet of shopping center, 3,000 square feet of fast food restaurant with drive-thru, a 7,000 square foot sit down restaurant, 55 bed assisted living facility and 182 residential units. Although only 150,000 square feet of office space is currently proposed, we believe it is beneficial to evaluate the impacts of these possible future developments

to insure the transportation improvements initially constructed can support future development in the immediate vicinity of the project site. In concept, this should avoid the need to make additional transportation improvements each time additional development is proposed. We offer the following comments relative to the Traffic Memorandum prepared by Creighton Manning Engineering:

Comment #10.1: The trip generation estimate for the retail component (Shopping Center) of the project used the weighted average method for both the AM and PM peak hours. However, the fitted curve equation should have been used, at least for the PM peak hour condition, to be consistent with the recommended ITE methodology as outlined in current edition of the ITE Trip Generation Handbook (3rd edition – 2017). Use of the fitted curve equation for both the AM and PM peak hour conditions is recommended for this evaluation since the specific nature of the retail is not yet known. Use of the curve equations for the proposed size of the retail for this project will produce a higher trip generation estimate.

Response: A review of the *ITE Trip Generation Handbook* (3rd edition – 2017, page 27, Section 4.4 – Process for Selecting Average Rate or Equation) indicates that the, “step-by-step procedure are guidelines that are merely tools to help the analyst estimate trip generation. It is noted that professional judgement must be applied at all stages of the analysis process.” The use of the equation for “Shopping Center” suggests that the proposed 49,500 SF of retail space would generate 177 AM peak hour trips and 323 PM peak hour trips. The fitted curve equation has a high constant for the AM peak hour and overestimates trip generation for small developments. A qualitative comparison to other similarly sized retail spaces on Wolf Road suggests that this trip generation estimate would be overly conservative; therefore, the average rate was used in the trip generation estimate for the Starlite development.

In addition, a review of the original analysis conducted for the GEIS indicates that the trip generation estimate calculated for the 50,000 SF retail component associated with Parcel #28 was developed using Land Use Code (LUC) 826 for a Specialty Retail Center and that this land use would generate approximately 140 trips during the PM peak hour. This is generally consistent with the average rate associated with a Shopping Center (189 PM peak hour trips). It is noted that ITE LUC 826 is not provided in the current edition of the *Trip Generation Manual*. It is our opinion that the assessment conducted for the retail land uses provides a reasonable trip generation estimate for the proposed land use and retains the consistency to evaluate against the GEIS.

Comment #10.2: The pass-by trip adjustments for the retail/restaurant uses should have been applied to the External Trips rather than to the Total Trips.

Response: It is agreed that the pass-by adjustments for the retail/restaurant uses should have been applied to the External Trips rather than the Total Trips. A revised trip generation estimate is included in Table 1.

It is noted that the trip generation estimate related to the 300,000 SF of office space associated with the *Ayco* relocation has also been updated based on a suggestion from the Capital District Transportation Committee (CDTC). Creighton Manning installed an automatic traffic recorder (ATR) from Monday, January 29, 2018 to February 1, 2018 on the site driveway of the existing *Ayco* office located at 25 British American Boulevard in order to develop a site specific trip generation rate. The raw data is included under Attachment A. This existing office building has 550 employees and currently generates 284 trips during the morning peak hour

(7:15 to 8:15 a.m.) and 226 trips during the PM peak hour (4:30 to 5:30p.m.). Based on the site specific traffic data, the existing 550 *Ayco* employees generate 0.52 vehicle trips/employee during the AM peak hour and 0.41 vehicle trips/employee during the PM peak hour. The rates calculated from field observations of the existing *Ayco* office building are higher than the AM and PM peak hour rates published by ITE for a General Office Building (LUC 710) and lower than the AM and PM rates for a Single Tenant Office Building (LUC 715). The trip generation for the proposed relocation of the *Ayco* office space was estimated using these site specific trip rates assuming that the existing and future *Ayco* employees will continue to generate trips at a rate consistent with current operations.

Table 1 – Starlite Trip Generation Summary

Land Use	Phase	Units or Gross Floor Area (SF)/Employees	AM Peak Hour			PM Peak Hour				
			Enter	Exit	Total	Enter	Exit	Total		
Total New Trips Phase 1 - Office Space	1	150,000 SF 750 Employees	377	10	387	11	297	308		
Phase 2 Calculations - Office Space	2	150,000 SF 450 Employees	226	6	232	6	178	184		
Total New Trips (Phase 1-2)	1-2	300,000 SF 1,200 Employees	603	16	619	17	475	492		
Phase 3 Calculations	Total Trips	Office Space	1-2	300,000 SF 1,200 Employees	603	16	619	17	475	492
		Shopping Center	3	49,500 SF	28	18	46	91	98	189
		Fast Food Restaurant w/ Drive Thru	3	3,000 SF	62	59	121	51	47	98
		Sit Down Restaurant	3	7,000 SF	39	31	70	42	26	68
		Total Trips (Phase 1-3)			732	124	856	201	646	847
	Internal Trips	Office Space	3	300,000 SF	-33	-14	-47	-4	-9	-13
		Shopping Center	3	49,500 SF	-6	-7	-13	-37	-29	-66
		Fast Food Restaurant w/ Drive Thru	3	3,000 SF	-8	-19	-27	-17	-19	-36
		Sit Down Restaurant	3	7,000 SF	-4	-11	-15	-12	-13	-25
		Total Internal Capture – 12% AM / 16% PM			-51	-51	-102	-70	-70	-140
	External Trips	Office Space	3	300,000 SF	570	2	572	13	466	479
		Shopping Center	3	49,500 SF	22	11	33	54	69	123
		Fast Food Restaurant w/ Drive Thru	3	3,000 SF	54	40	94	34	28	62
		Sit Down Restaurant	3	7,000 SF	35	20	55	30	13	43
		Total External Trips			681	73	754	131	576	707
	Pass-By Trips	Shopping Center – 30%	3	49,500 SF	-5	-5	-10	-18	-18	-36
		Fast Food Restaurant – 50%	3	3,000 SF	-24	-24	-48	-16	-16	-32
		Sit Down Restaurant – 40%	3	7,000 SF	-11	-11	-22	-9	-9	-18
		Total Pass-By Trips			-40	-40	-80	-43	-43	-86
	Total New Trips (Phase 1-3)	1-3		641	33	674	88	533	621	
Phase 4 Calculations - Single Family Detached Housing	4	182 – Units	34	100	134	114	67	181		
Total New Trips (Phase 1-4)	1-4		675	133	808	202	600	802		
Boght Road GEIS (400 KSF Office and 50 KSF Mixed Use)			--	--	--	152	516	668		
Boght Road GEIS Sensitivity Analysis (500 KSF Mixed Use Commercial)			--	--	--	916	954	1,870		

A review of the updated trip generation estimate indicates that the site will generate a total of 808 AM peak hour trips and 802 PM peak hour trips after build-out of all four phases. A review of the GEIS indicates that this is more than the 668 PM peak hour trips estimated for Parcel #28 during the PM peak hour; however, it is far less than the 1,870 PM peak hour trips estimated for Parcel #28 that assumed a more intense retail development which was included in a sensitivity analysis.

Comment #10.3: Our analysis of the trip generation characteristics, addressing our comments above, is presented in the table below. This analysis indicates that the Total New Trips for the proposed project (Phases 1-4) would be 542 new (primary) vehicle trips during the AM peak hour (372 enter and 170 exit) and 649 new (primary) vehicle trips during the PM peak hour (236 enter and 413 exit).

Response: It is noted that the trip generation estimate has been updated in order to account for the site specific trip rate calculated for the Ayco office building as noted in Response to Comment #10.2.

Comment #10.4: Based on the above, our estimate of the site's trip generation is 78 more trips in the AM peak and 71 more vehicle trips during the PM peak than was presented in the Traffic Memorandum. However, this higher estimate of site trips is still consistent with the number of trips considered for this site in the Boght Road – Columbia Street GEIS, with 19 fewer trips during the PM peak hour when compared to the GEIS's full build-out analysis and 1,221 fewer trips when compared to the sensitivity analysis that looked at development of the site with 500,000 square feet of commercial space.

Response: As noted above, the trip generation estimate has been updated to account for the site specific rate calculated for the Ayco office building relocation. The new trip generation estimate indicates that the site will generate 134 more trips during the PM peak hour when compared to Parcel #28 in the GEIS; however, it will generate 1,068 fewer trips when compared to the sensitivity analysis that assessed the impacts of developing 500,000 SF of retail space.

Comment #10.5: The 150,000 square foot office building is expected to generate 155 trips during the AM peak hour and 162 trips during the PM peak hour.

Response: As noted in Table 1, the 150,000 SF office building associated with Phase 1 development includes 750 employees which will generate 387 trips during the AM peak hour and 308 trips during the PM peak hour. Phase 2 includes the construction of an additional 150,000 SF office building that will accommodate 450 new employees which will generate an additional 232 trips during the AM peak hour and 184 trips during the PM peak hour.

Comment #10.6: Because the trip generation of the site, based on the entire proposed mix of uses as indicated in the CME Memorandum, is less than what was considered in the GEIS, we agree that the traffic associated with the Starlite site development will be accommodated by the mitigation identified by the GEIS without significant traffic impacts to the surrounding roadway network.

Response: A review of the revised trip generation estimate indicates that the total trip generation of the site will be consistent with the full build-out assessment provided in the GEIS and significantly less than the sensitivity analysis presented in the GEIS; therefore, it is

agreed that the Starlite site development will be accommodated by the mitigation identified by the GEIS.

Comment #10.7: We agree with the conclusion of the CME Memorandum that the following transportation infrastructure improvements from the GEIS should be provided as part of the initial development of the project site with 150,000 square feet of office space:

- a. Construct new Town Connector Road (US 9 opposite Auto Park Drive to NY 9R opposite Johnson Road), constructed to Town Road standards.*
- b. Realign Old Loudon Road to connect to the new Connector Road east of US 9.*
- c. US 9 & Connector Rd/Auto Park intersection geometric improvements and traffic signal control*
- d. US 9 & Connector Road/Johnson Road intersection geometric improvements and traffic signal replacement (including interconnect for coordinated operations with adjacent signals)*

Response: It is agreed that the improvements listed above should be completed in order to accommodate traffic associated with Phase 1 (150,000 SF office space) of the proposed development.

Comment #10.8: The traffic signal at the new US Route 9/Connector Road/Auto Park Drive intersection is a critical component of the recommended improvements. However, the installation of a signal will require that the Manual of Uniform Traffic Control Devices (MUTCD) warranting criteria be satisfied for NYSDOT approval. Further study should be conducted to identify if the warranting criteria will be met such that the signal can be installed at the time the new connector roadway is opened, and to identify a strategy/approach for maintaining traffic mobility if the criteria is not met. The traffic signal at this intersection will also need to be interconnected with the adjacent signals at US Route 9/Century Hill Road and at the US Route 9/NY Route 9R/I-87 Access to provide coordinated signal system operations per the GEIS, which will require improvements/modifications of the signal equipment at these other two intersections.

Response: A detailed traffic signal warrant at the US Route 9/Auto park Drive/Old Loudon Road intersection is provided in response to Comment #10.8.

Existing and Future Geometric Conditions

The US Route 9/Auto Park Drive/Old Loudon Road intersection is a four-leg intersection controlled by stop signs on the eastbound Auto Park Drive approach and westbound Old Loudon Road approach. The eastbound Auto Park Drive approach currently provides separate left and right turn lanes while the westbound Old Loudon Road approach provides a single exiting lane for right turn movements only. The northbound US Route 9 approach provides two through lanes while the southbound US Route 9 approach provides two through lanes and a separate right turn lane. A two-way left-turn lane (TWLTL) is provided on US Route 9 that northbound vehicles can use when making a left turn onto Auto Park Drive.

With the construction of Johnson Road Extension, the westbound Old Loudon Road approach will be reconstructed to allow two-way traffic and will provide a shared left turn/through lane and a separate right turn lane. The left turn lane on the eastbound Auto Park Drive approach will be modified to accommodate shared left turn/through movements. In addition, the TWLTL on US Route 9 will be restriped as exclusive left turn lanes at the intersection.

Data Collection

Automatic traffic recorders (ATRs) were installed on the northbound and southbound US Route 9 approaches and on the Auto Park Drive during January/February 2018. An ATR was installed on Old Loudon Road in March 2018. The raw ATR data is included under Attachment B. ATR data on US Route 9 show that the road currently serves approximately 23,225 vehicles per day (vpd) near Auto Park Drive with two-way traffic volumes of approximately 2,020 vehicles during the AM peak hour and 2,145 vehicles during the PM peak hour. The 85th percentile speed measured on US Route 9 is approximately 60-mph in the northbound and southbound directions. ATR data on Auto Park Drive west of US Route 9 shows that the road currently serves approximately 1,370 vpd with two-way traffic volumes of approximately 160 vehicles during the AM peak hour and 150 vehicles during the PM peak hour. Old Loudon Road east of US Route 9 currently serves approximately 1,540 vpd with northbound traffic volumes of approximately 125 vehicles during the AM peak hour and 156 vehicles during the PM peak hour.

The existing and future (Phase 1) traffic conditions and physical characteristics of the intersection were compared to signal warrant criteria contained in the *2009 Manual of Uniform Traffic Control Devices* (National MUTCD), published by the Federal Highway Administration (FHWA) to determine if traffic conditions would warrant the installation of a traffic signal. The National MUTCD specifies the minimum criteria that must be met in order for a traffic signal to be justified. The satisfaction of a signal warrant in itself is not necessarily justification for a traffic signal. Other engineering and operational factors must be considered. The National MUTCD contains eight warrants, three of which were applicable and evaluated in detail:

- Warrant 1 – Eight-Hour Vehicular Volume - This warrant is satisfied if for any eight hours of an average day the traffic volumes for Condition A or Condition B specified in Table 4C-1 of the National MUTCD are met for the main arterial and the higher volume side road approach to the intersection.
- Warrant 2 – Four-Hour Vehicular Volume - This warrant is met when for any four hours of an average day, points plotted on the graph presented on Figure 4C-2 of the National MUTCD fall above the appropriate curve.
- Warrant 3 – Peak Hour - This warrant is met when for any one hour of an average day, points plotted on the graph presented on Figure 4C-4 of the National MUTCD fall above the appropriate curve.

Detailed Signal Warrant Analysis

- Warrants 1, 2, and 3 – Table 2 (Existing Traffic Conditions) and Table 3 (Phase 1 Traffic Conditions) summarize the analysis of Warrants 1, 2, and 3 based on the traffic volume data collected by CM and the anticipated trip generation of the site. It is noted that 50 percent of right-turn vehicles on Old Loudon Road and Auto Park Drive were removed from the signal warrant volumes to account for a percentage of the right-turn on red vehicles. This number was calculated using the article “Models for Right-Turn-on-Red and Their Effects on Intersection Delay” by Ghassan Abu-Lebdeh, Rahim F. Benekohal, and Bashar Al-Omari. The article was published by the Transportation Research Board in 1997. A check mark under the “Signal Warrants Met?” column indicates that the criteria are satisfied for that hour. The detailed evaluation for Warrants 1, 2, and 3 is included under Attachment C.

Table 2 – Summary of Signal Warrant Analysis – Existing Traffic Conditions

Time Begin (1-hour period)	Existing Traffic Volumes ¹			Signal Warrants Met?			
	US Route 9	Auto Park Drive EB	Johnson Road Ext. WB	#1		#2	#3
				Cond. A	Cond. B		
7:00 AM	2,019	3	59		✓		
8:00 AM	1,975	6	62		✓	✓	
9:00 AM	1,336	13	39				
10:00 AM	1,238	13	43				
11:00 AM	1,328	25	41				
12:00 PM	1,526	52	49				
1:00 PM	1,475	30	45				
2:00 PM	1,481	21	58		✓		
3:00 PM	1,677	30	65		✓	✓	
4:00 PM	1,922	55	78		✓	✓	✓
5:00 PM	2,147	68	74		✓	✓	
6:00 PM	1,288	21	44				
Required Volumes	Two Lane Major Street			420	630	See Figure 4C-4	See Figure 4C-4
	Two Lane Minor Street			105	53		
Overall Warrant Met?				No	No	Yes	Yes

¹ Volumes on US Route 9 and Auto Park Drive as per CM ATR data.

Table 3 – Summary of Signal Warrant Analysis – Phase 1 Traffic Conditions

Time Begin (1-hour period)	Phase 1 Traffic Volumes ¹			Signal Warrants Met?			
	US Route 9	Auto Park Drive EB	Johnson Road Ext. WB	#1		#2	#3
				Cond. A	Cond. B		
7:00 AM	2,019	3	60		✓	✓	
8:00 AM	1,975	6	63		✓	✓	
9:00 AM	1,336	13	40				
10:00 AM	1,238	13	46				
11:00 AM	1,328	25	47				
12:00 PM	1,526	52	68		✓	✓	
1:00 PM	1,475	30	54		✓		
2:00 PM	1,481	21	61		✓	✓	
3:00 PM	1,677	30	74		✓	✓	
4:00 PM	1,922	55	114	✓	✓	✓	✓
5:00 PM	2,147	68	117	✓	✓	✓	✓
6:00 PM	1,288	21	60		✓		
Required Volumes	Two Lane Major Street			420	630	See Figure 4C-2	See Figure 4C-4
	Two Lane Minor Street			105	53		
Overall Warrant Met?				No	Yes	Yes	Yes

¹ Volumes on US Route 9 and Auto Park Drive as per CM ATR data.

Tables 2 indicates that existing traffic volumes over the course of a typical day at the US Route 9/Auto Park Drive/Old Loudon Road intersection are high enough to meet the minimum traffic signal criteria for Warrants 2 and 3. Tables 3 indicates that future Phase 1 traffic volumes over the course of a typical day at the US Route 9/Auto Park Drive/Johnson Road Extension intersection are high enough to meet the minimum traffic signal criteria for all three Warrants (1, 2, and 3). It is recommended that a traffic signal be installed in order to accommodate the construction of Johnson Road Extension.

Comment #10.9: A capacity analysis should be provided of the operations of the US Route 9/Connector Road/Auto Park Drive intersection to present design volumes and analysis suitable for establishing the queue storage requirements for turn lanes, to establish the off-set distance for the realignment of Old Loudon Road, and for considerations of traffic control and/or turn restrictions at the new Old Loudon Road/Connector Road intersection and to consider any need/impact of turn restrictions at driveways within the intersection influence area.

Response: A detailed intersection analysis was conducted at the US Route 9/Auto Park Drive/Johnson Road Extension intersection for Phase 1 of the site (150,000 SF of office), Phase 1 & 2 of the site (300,000 SF of office space), and for full build-out of the development (Phase 1 through 4) during the PM peak hour. It is anticipated that build-out of potential projects located along Auto Park Drive will not occur prior to the construction of Phase 1 conditions (150,000 SF office space with 750 employees). These development projects would require geometric improvements on the eastbound approach at the intersection in order to provide adequate operations. Table 4 summarizes the level of service analysis conducted at the US Route 9/Auto Park Drive/Johnson Road Extension intersection for various build-out scenarios while Table 5 summarizes the average and 95th percentile queues at the intersection. It is noted that the Old Loudon Road intersection on Johnson Road Extension will be located approximately 280 feet southeast of US Route 9 and that the auxiliary shared left turn/through lane will be approximately 75 feet long.

Table 4 – Level of Service Summary – US Route 9/Auto Park Drive/Johnson Road Extension

Intersection Approach		Control	PM Peak Hour		
			2020	2026	
			Phase 1	Phase 1&2	Phase 1-4
Route 9/Latham Auto Park Drive/Johnson Road Ext.		S			
Latham Auto Park EB	LT		D (43.9)	--	--
	[L]		--	D (53.2)	D (53.5)
	[T]		--	D (37.7)	D (41.0)
Johnson Road Extension WB	R		D (42.9)	C (30.7)	D (36.1)
	LT		D (42.9)	D (37.2)	D (40.5)
	R		D (44.2)	C (33.0)	C (34.9)
Route 9 NB	L		A (6.6)	B (10.9)	C (24.8)
	T,TR		B (16.0)	B (15.0)	D (37.3)
Route 9 SB	L		C (33.0)	C (34.8)	D (49.6)
	T,T		A (0.5)	A (2.0)	B (12.2)
	R		A (0.0)	A (0.8)	A (8.8)
Overall			B (15.0)	B (17.0)	C (30.9)

Key: NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound intersection approaches
 L,T,R = Left-turn, through, and/or right-turn movements
 S = Signalized intersection control
 X (Y.Y) = Level of Service (Delay, seconds per vehicle)
 --- = Not Applicable

Table 5 – Queue Summary (in feet) – US Route 9/Auto Park Drive/Johnson Road Extension

Intersection Approach		Control	PM Peak Hour						
			2020		2026				
			Phase 1		Phase 1&2		Phase 1-4		
			50 th	95 th	50 th	95 th	50 th	95 th	
Route 9/Latham Auto Park Drive/Johnson Road Ext.		S							
Latham Auto Park EB	LT		25	25	--	--	--	--	
	[L]		--	--	175	275	175	275	
	[T]		--	--	75	125	75	150	
Johnson Road Extension WB	R		75	100	225	350	250	375	
	LT		25	25	75	100	75	100	
Route 9 NB	R		175	300	150	250	175	275	
	L		25	25	125	175	200	250	
Route 9 SB	T,TR		400	500	325	375	675	800	
	L		125	200	100	175	200	325	
	T,T		25	25	25	50	150	250	
	R		0	0	25	25	25	50	

Key: NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound intersection approaches
 L,T,R = Left-turn, through, and/or right-turn movements
 S = Signalized intersection control
 -- = Not Applicable

A review of the level of service analysis (included under Attachment D) indicates that this intersection will operate at an overall LOS C or better through Phase 4 conditions with all movements operating at LOS D or better. It is noted that the west leg of the intersection would need to be widened to accommodate traffic associated with development of projects on Auto Park Drive. In addition, the 75 foot auxiliary lane on the westbound Johnson Road Extension approach will accommodate average queues through build-out of the *Starlite* development. It is noted that average queuing on the separate westbound right turn lane will not impact the Old Loudon Road intersection located approximately 280 feet southeast of US Route 9. A review of the traffic simulation indicates that adequate traffic operations will be provided at the Johnson Road Extension/Old Loudon Road intersection with the northbound approach operating under stop sign control.

Comment #10.10: The GEIS includes a geometric improvement at the intersection of US Route 9/NY Route 9R/I-87 Access to construct a second through lane on the westbound approach. This should either be included in the program of improvements for the project, or a detailed study to demonstrate that this improvement is not necessary to support the project.

Response: A detailed intersection analysis of the US Route 9/NY Route 9R/I-87 Exit 7 intersection was conducted to determine if the westbound through lane identified in the GEIS should be constructed as part of the Phase 1/Phase 2 build-out of the site (300,000 SF of office space). A review of traffic volume information on US Route 9 and NY Route 9R indicates that the PM peak hour represents worst-case operating conditions at this intersection and that traffic leaving the office development will have the greatest impact on the westbound approach during the afternoon peak period; therefore, the PM peak hour was re-evaluated in order to determine the impacts associated with the proposed development.

An intersection turning movement count was conducted at the US Route 9/NY Route 9R/I-87 Exit 7 intersection on Wednesday, January 31, 2018 during the afternoon peak period (4:30 to 6:00 p.m.). The raw turning movement count data is included under Attachment E. The existing AM and PM peak hour traffic volumes (shown on Figure 1) form the basis for all traffic

forecasts (Figures 2 through 6) and analysis. Table 6 summarizes a level of service analysis conducted at this intersection for various development stages of the project.

Table 6 – Level of Service Summary

Intersection Approach		Control	PM Peak Hour				
			2020			2026	
			No-Build	Build Phase 1	Build Phase 2	Build Phase 1-4	Build Phase 1-4 w/ Imp
Route 9/Route 9R/I-87 Access		S					
I-87 Access EB	L,L		E (57.3)	E (57.3)	E (58.1)	E (71.0)	E (71.0)
	T		C (31.8)	C (31.4)	C (31.9)	D (35.9)	D (43.9)
Route 9R WB	R,R		C (23.8)	C (23.4)	C (23.9)	C (27.1)	C (33.9)
	L,L		D (54.1)	E (55.3)	E (56.4)	E (56.1)	E (56.1)
Route 9 NB	TR		E (57.9)	E (60.7)	E (69.1)	F (91.4)	D (54.3)
	L,L		D (53.4)	D (53.4)	D (53.4)	E (62.7)	E (62.7)
Route 9 SB	T,T		C (34.8)	C (34.8)	C (34.8)	E (56.0)	E (56.0)
	R		Free	Free	Free	Free	Free
	L		D (42.1)	D (45.9)	D (47.0)	E (60.3)	D (53.6)
Overall	T,T		B (11.9)	B (14.8)	B (15.4)	B (15.3)	D (44.5)
	R		A (4.3)	A (5.4)	A (5.7)	B (19.7)	B (13.2)
			C (26.7)	C (28.1)	C (29.5)	D (44.3)	D (40.2)

Key: NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound intersection approaches
 L,T,R = Left-turn, through, and/or right-turn movements
 S = Signalized intersection control
 X (Y.Y) = Level of Service (Delay, seconds per vehicle)

The level of service analysis (included under Attachment D) indicates that this intersection will operate at an overall LOS C with all movements operating at LOS E or better during Phase 1 conditions and would continue to operate similarly if Phase 2 was progressed. The analysis indicates increased delay after full build-out of the development and construction of additional development along Auto Park Drive. The level of service evaluation indicates that Phase 1 and 2 can be progressed without the construction of a second westbound through lane at the intersection.

Comment #13: Other detailed analysis will be necessary to identify the access requirements to the site for safety and operations:

- a. *Geometric requirements and traffic control for the proposed site access drive to NY 9R (east of 621 Columbia Street Extension – Prime Companies Driveway). Items to be considered include:*
 - i. *Eastbound left-turn lane on NY Route 9R.*
 - ii. *Access management/driveway consolidation with #621 Columbia Street Extension site (Prime Companies).*
- b. *Site access locations along new Connector Road:*
 - i. *Intersection control/operations at site access drives and Connector Road intersections.*
 - ii. *Turn-lane queue storage design.*
 - iii. *Intersection spacing (i.e., any issues with queue interactions along the Connector Road between the NY Route 9R and the site access).*

Response:

NY Route 9R/Site Driveway

A review of the Site Plan included under Attachment F indicates that this intersection will operate as a right-in/right-out only driveway; therefore, an eastbound left turn lane was not considered. An assessment of this intersection shown in Table 7 (included under Attachment

D) indicates that the southbound right turn lane will operate at LOS B through full build-out conditions during the PM peak hour which represents worst-case conditions when employees will be leaving the proposed office building. It is recommended that the southbound approach operate under stop sign control.

Table 7 – Level of Service Summary – NY Route 9R/Right-In/Right-Out Driveway

Intersection Approach	Control	PM Peak Hour		
		2020	2026	
		Phase 1	Phase 2	Phase 1-4
Route 9R/Right-In Right-Out Dwy	U			
Right-In Right-Out Dwy SB R		B (11.5)	B (12.6)	B (12.7)

Key: NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound intersection approaches
 L,T,R = Left-turn, through, and/or right-turn movements
 U = Unsignalized intersection control
 X (Y.Y) = Level of Service (Delay, seconds per vehicle)

It is noted that *Prime Companies* is providing direct access to Johnson Road Extension. Their existing driveway that currently intersects NY Route 9R opposite Johnson Road will be relocated to Johnson Road Extension. Their existing unsignalized driveway located on NY Route 9R will remain.

The proposed Ayco right-in/right-out site driveway on NY Route 9R will be located approximately 100 feet east of the Prime Companies Driveway which meets the minimum driveway spacing criteria provided by NYSDOT. The available intersection sight was measured from the perspective of a vehicle looking left to make a right turn from the Site Driveway as illustrated in Diagram 1. The available intersection sight distance on a side street should provide drivers a sufficient view of the intersecting highway to allow vehicles to enter or exit the intersection without unduly slowing vehicles traveling at or near the operating speed on the intersecting mainline.

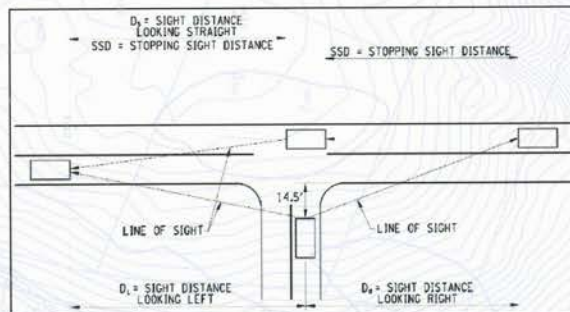


Diagram 1 – Intersection and Stopping Sight Distance Measurements

Stopping sight distance (the length of roadway ahead that is visible to the driver) was also measured on NY Route 9R at the site access intersection. The available stopping sight distance on a roadway should be of sufficient length to enable a vehicle traveling at or near the operating speed to stop before reaching a stationary object in its path.

The 85th percentile travel speed on NY Route 9R was measured to be approximately 50-mph in the westbound direction and 45-mph in the eastbound direction. It is noted that the posted speed limit on NY Route 9R is 45-mph east of Johnson Road and 35-mph west of Johnson Road. The speed limit transition occurs just east of the NY Route 9R/Johnson Road

intersection. The available sight distances were compared to the guidelines presented in AASHTO A Policy on Geometric Design of Highways and Streets, 2011 and NYSDOT design guidance (EB 17-007) for the applicable operating speed. The available sight distances are summarized in Table 8.

Table 8 – Sight Distance Summary (Feet)

Intersection		Intersection Sight Distance ¹				Stopping Sight Distance ²	
		Right Turn from Site Driveway (D _i)	Left Turn from Site Driveway		Left Turn from NY Route 9R (D _s)	SSD _{EB}	SSD _{WB}
			Looking Left (D _l)	Looking Right (D _r)			
NY Route 9R/ Site Driveway	Available	>550*	NA	NA	NA	575	>900
	Recommended ⁴	480	NA	NA	NA	330	390

¹ Intersection sight distance is measured at 14.5 feet back from the traveled way at an eye height and object height of 3.5-ft.
² SSD_{EB, WB} = Stopping sight distance measured for a 2-foot object located in the path of eastbound and westbound vehicles on NY Route 9R.
⁴ Sight distance measurements are compared to AASHTO recommended distances for a 50-mph operating speed in the westbound direction and 40-mph in the eastbound direction on NY Route 9R.
 * with clearing of vegetation

A review of the available stopping sight distances at the Site Driveway indicate that they meet AASHTO guidelines for the applicable operating speed on NY Route 9R. The available intersection sight distance looking left to make a right turn from the Site Driveway is limited by existing vegetation located along the site frontage on NY Route 9R as shown on Photograph #1 and is less than the recommended AASHTO guideline for the 50 mph operating speed. It is recommended that the vegetation along NY Route 9R be cleared and maintained along the frontage to the extent possible. The available sight distance looking left will meet AASHTO guidelines for the applicable operating speed with the proposed vegetation clearing.



It is recommended that any proposed vegetation and/or signs related to the site be placed a minimum of 15-feet back from the edge of the travel lane to maintain sight lines for vehicles entering and exiting the site.

Johnson Road Extension/Ayco Driveway & Johnson Road Extension/Prime Companies Driveway

A review of the Site Plan included under Attachment F indicates that a two-way left-turn lane (TWLTL) will be provided from approximately 100 feet north of the Ayco Driveway through the Prime Companies Driveway. In addition, the Ayco Driveway will provide separate left and right turn lanes while the Prime Company Driveway will provide a single lane for shared left and right turn movements. Both intersections will operate under stop sign control on the westbound approaches. It is anticipated that a forth leg could be constructed opposite the Ayco Driveway in the future in order to accommodate commercial development associated with future phases of the project. It is noted that a second unsignalized site driveway for the Ayco property will be provided on Johnson Road Extension located north of the main site driveway; however, all site generated traffic was assigned to the main site driveway in order to provide a worst-case traffic operations assessment. An evaluation of these intersections

and the NY Route 9R/Johnson Road/Johnson Road Extension intersection indicates that a separate southbound right turn lane should be constructed on Johnson Road Extension in order to minimize queuing on the southbound approach to the traffic signal. The level of service analysis is summarized in Table 9 while the queue assessment is summarized in Table 10.

Table 9 – Level of Service Summary – Johnson Road Extension Intersections

Intersection Approach		Control	PM Peak Hour			
			2020		2026	
			Phase 1		Phases 1&2	
NY Route 9R/Johnson Road/Johnson Road Ext.		S				
Route 9R EB	L		B (19.4)	C (27.2)	C (29.1)	
	T		B (17.2)	C (20.8)	C (21.4)	
	R		A (6.3)	A (8.4)	A (8.6)	
Route 9R WB	L		C (23.3)	C (28.2)	C (29.0)	
	TR		B (14.6)	B (19.4)	C (20.1)	
Johnson Rd NB	L		B (18.2)	B (19.7)	C (21.0)	
	TR		B (12.6)	B (12.9)	B (13.7)	
Prime Companies Dwy SB	L		C (27.7)	C (29.5)	C (31.1)	
	R		C (29.5)	C (30.8)	C (32.4)	
	R		C (27.0)	C (27.4)	C (29.1)	
Overall			B (17.0)	C (20.5)	C (21.5)	
Johnson Road Ext./Prime Company Dwy		S				
Prime Company Dwy WB	LR		B (12.2)	C (15.3)	C (16.2)	
Johnson Road Ext. SB	L		A (7.6)	A (7.7)	A (7.8)	
Johnson Road Ext./Ayco Dwy/Retail Dwy		S				
Retail Dwy EB	LTR		--	--	B (12.3)	
Ayco Dwy WB	L		B (12.9)	C (18.3)	D (25.6)	
	R		A (9.6)	B (10.5)	B (10.6)	
Johnson Road Ext. NB	L		--	--	A (8.2)	
Johnson Road Ext. SB	L		A (7.6)	A (7.7)	A (7.7)	

Key: NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound intersection approaches
 L,T,R = Left-turn, through, and/or right-turn movements
 S = Signalized intersection control
 X (Y.Y) = Level of Service (Delay, seconds per vehicle)
 --- = Not Applicable

Table 10 – Queue Summary (in feet) – NY Route 9R/Johnson Road/Johnson Road Extension

Intersection Approach		Control	PM Peak Hour					
			2020		2026			
			Phase 1		Phase 1&2		Phase 1-4	
			50 th	95 th	50 th	95 th	50 th	95 th
NY Route 9R/Johnson Rd/Johnson Road Ext.		S						
Route 9R EB	L		25	25	25	50	25	50
	T		200	325	250	375	250	375
	R		50	100	75	150	100	150
Route 9R WB	L		25	25	25	25	25	125
	TR		125	200	200	300	225	375
Johnson Rd NB	L		100	175	100	175	100	200
	TR		25	50	25	50	50	50
Johnson Road Ext. SB	L		75	100	100	175	100	200
	T		100	175	150	250	175	250
	R		50	75	75	100	75	125

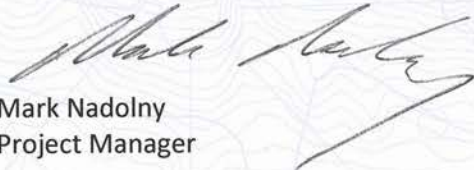
Key: NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound intersection approaches
 L,T,R = Left-turn, through, and/or right-turn movements
 S = Signalized intersection control

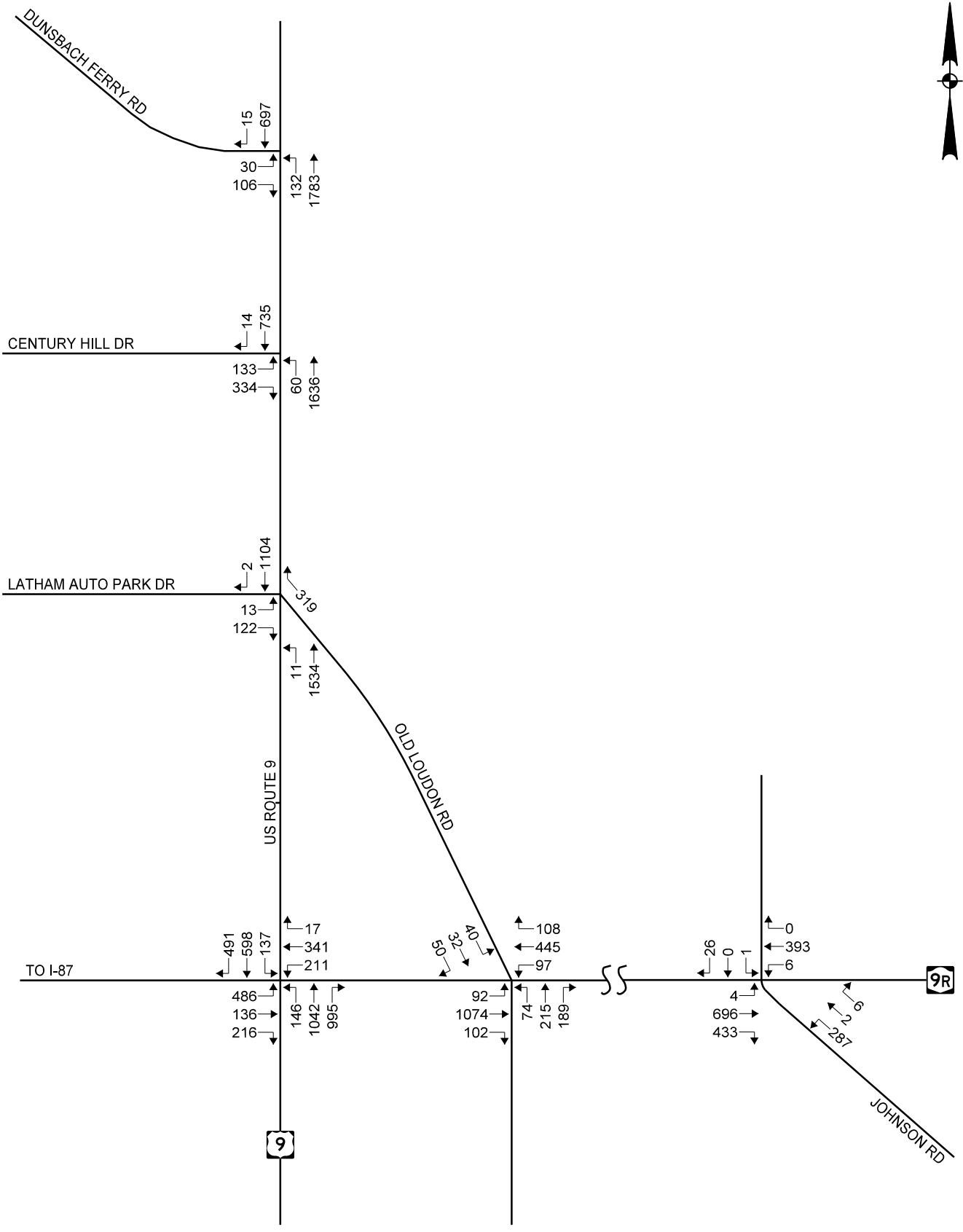
The level of service analysis (included under Attachment D) indicates that the signalized intersection will operate at LOS C or better on all approaches and the unsignalized intersection will operate at LOS D or better through full build-out of the project. No additional geometric changes are recommended. It is noted that the site driveway spacing on Johnson Road Extension will meet the minimum driveway spacing criteria provided by NYSDOT.

A review of the site plan indicates that the Prime Company Driveway will be located approximately 190 feet north of NY Route 9R while the main Ayco Driveway will be located approximately 350 feet north of NY Route 9R. The queue assessment shows that average southbound queues on Johnson Road Extension will not extend back and impact operations of the adjacent unsignalized intersections. In addition, a review of the traffic simulation indicates that the worst-case southbound queue (95th percentile) will extend back to the Prime Company Driveway during build-out conditions; however, this will occur infrequently and will dissipate quickly as the adjacent traffic signal progresses through the signal cycle.

Please call our office if you have any questions or comments regarding the above analysis.

Respectfully submitted,
Creighton Manning Engineering, LLP


Mark Nadolny
Project Manager

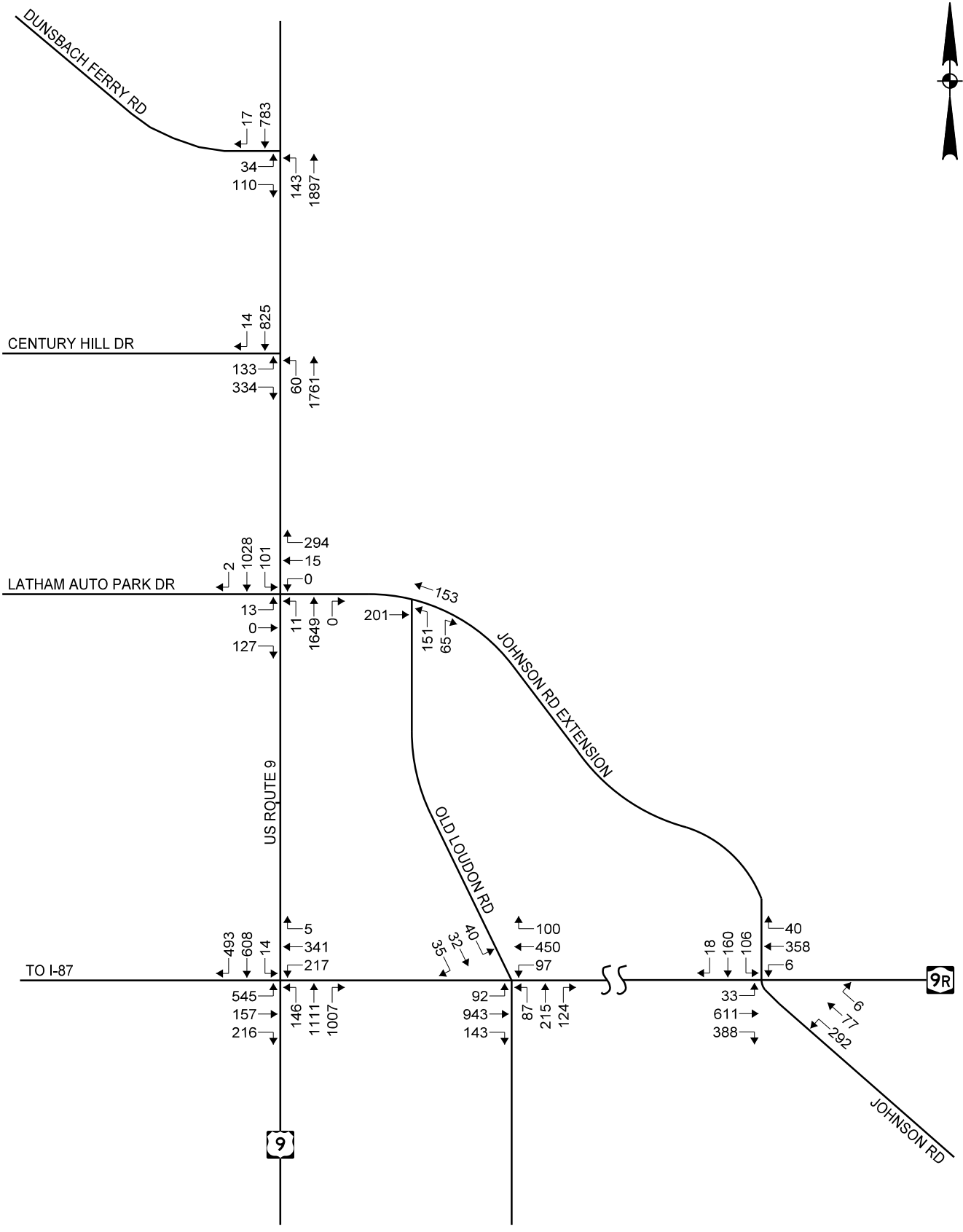


N:\Projects\2016\116-232 - Starlite\cadd\dgn\figures\116-232_fig_1.trcf.dgn

2018 EXISTING TRAFFIC VOLUMES PM PEAK HOUR

STARLITE DEVELOPMENT TOWN OF COLONIE, NEW YORK



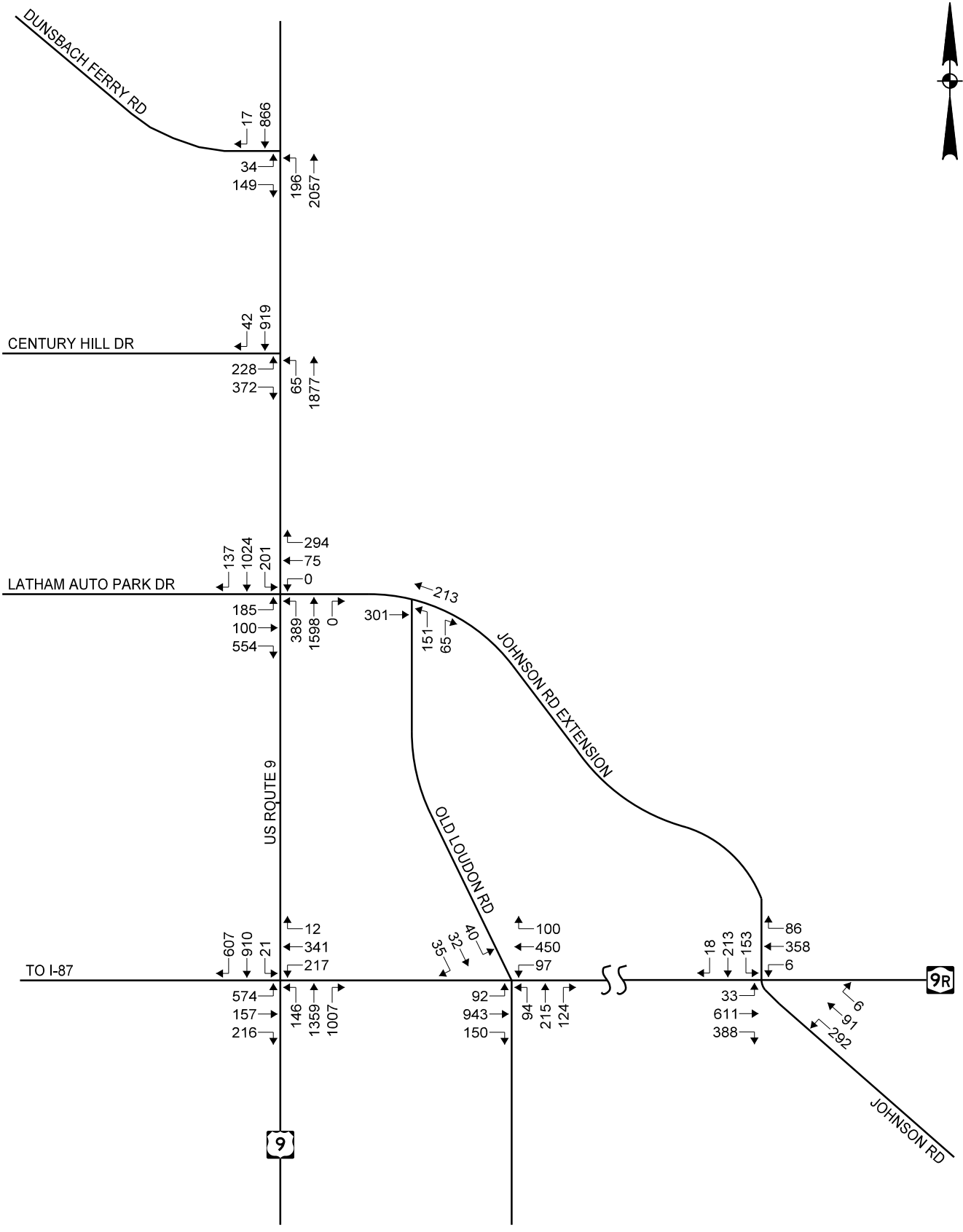


N:\Projects\2016\116-232 - Starlite\cadd\dgn\figures\116-232_fig_1.trcf.dgn

2020 NO-BUILD
TRAFFIC VOLUMES
PM PEAK HOUR

STARLITE DEVELOPMENT
TOWN OF COLONIE, NEW YORK



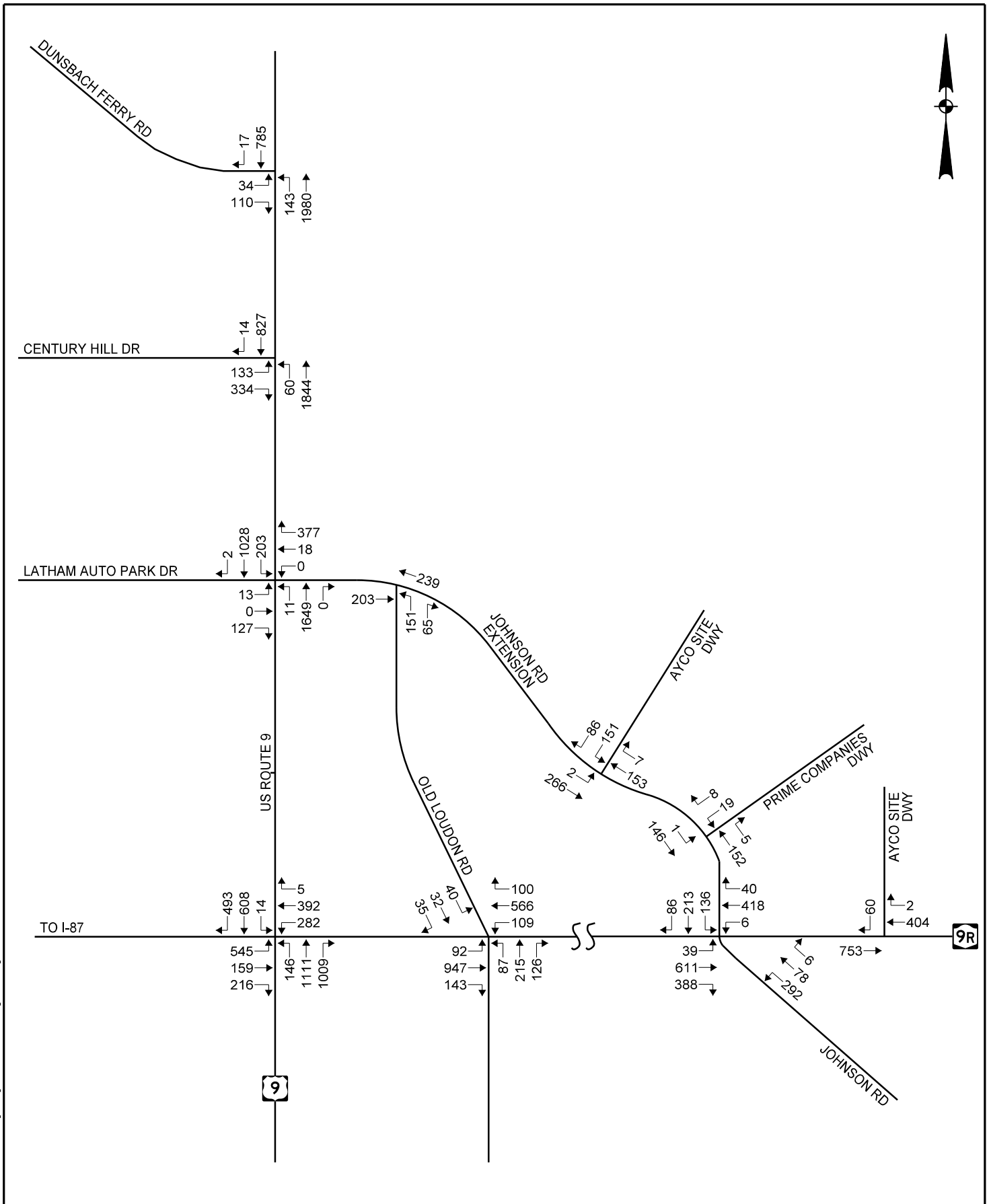


N:\Projects\2016\116-232 - Starlite\cadd\dgn\figures\116-232_fig_1.trcf.dgn

2026 NO-BUILD
TRAFFIC VOLUMES
PM PEAK HOUR

STARLITE DEVELOPMENT
TOWN OF COLONIE, NEW YORK



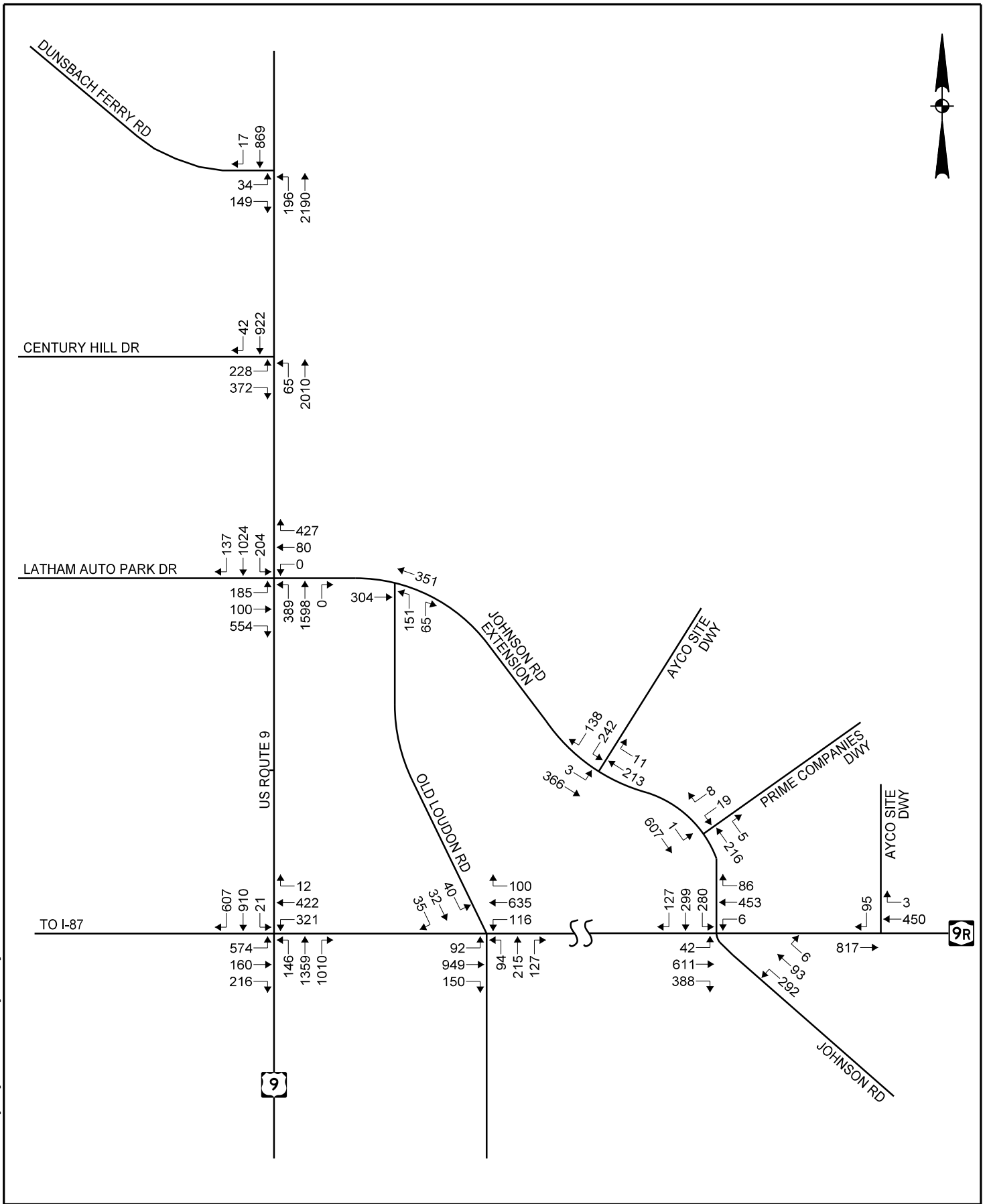


2020 BUILD (PHASE 1)
TRAFFIC VOLUMES
PM PEAK HOUR

STARLITE DEVELOPMENT
TOWN OF COLONIE, NEW YORK



N:\Projects\2016\116-232 - Starlite\cadd\dgn\figures\116-232_fig_1.trcf.dgn

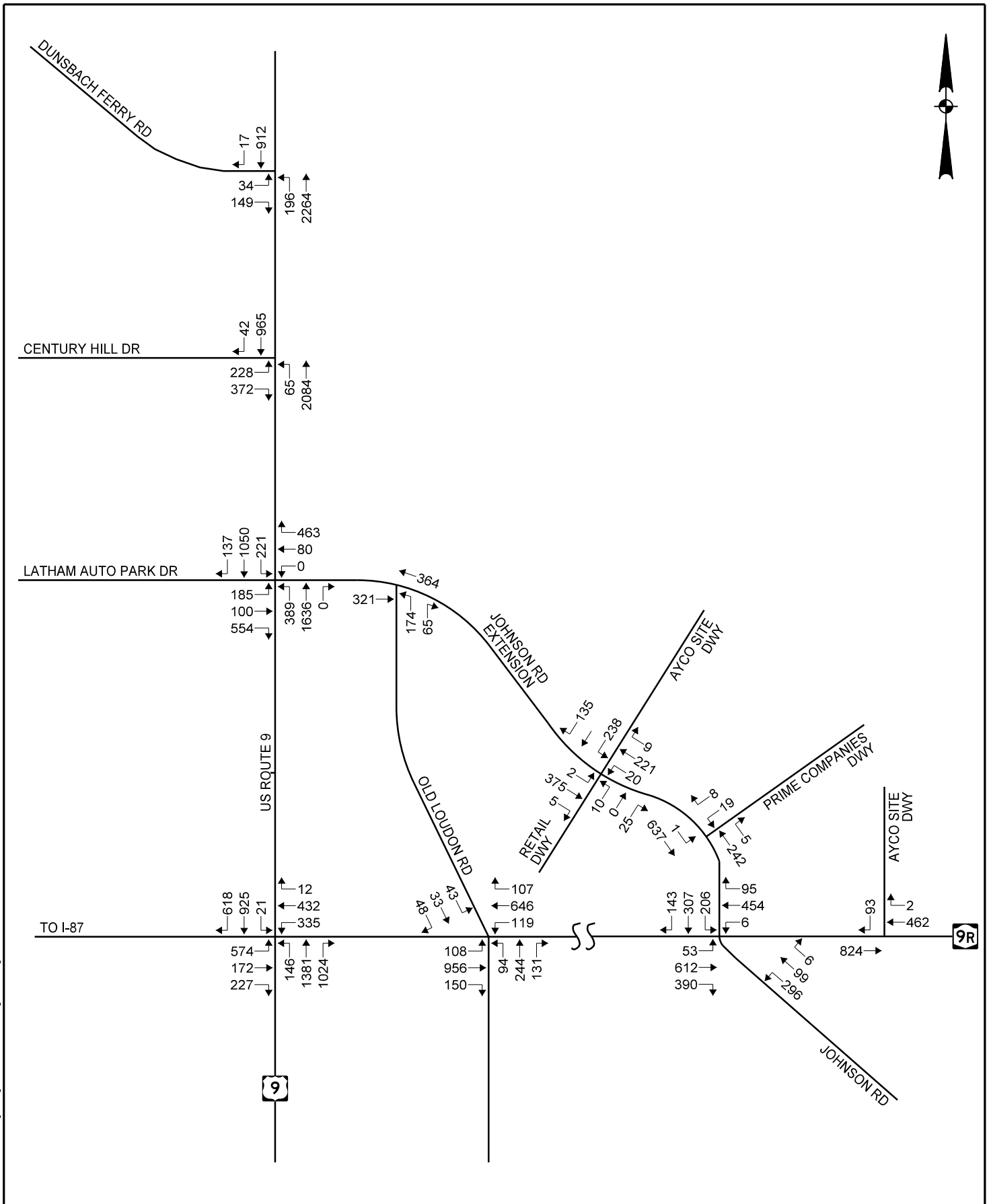


2026 BUILD (PHASES 1 & 2)
 TRAFFIC VOLUMES
 PM PEAK HOUR

STARLITE DEVELOPMENT
 TOWN OF COLONIE, NEW YORK



N:\Projects\2016\116-232 - Starlite\cadd\dgn\figures\116-232_fig_1.trcf.dgn



2026 BUILD (PHASES 1 - 4)
 TRAFFIC VOLUMES
 PM PEAK HOUR

STARLITE DEVELOPMENT
 TOWN OF COLONIE, NEW YORK



PROJECT: 116-232

DATE: 03/2018

FIGURE: 6

N:\Projects\2016\116-232 - Starlite\cadd\dgn\figures\116-232_fig_1.trcf.dgn

Attachment A
Ayco Driveway ATR

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

WeeklyVehicle-938 -- English (ENU)

Datasets:

Site: [116-232] Located on Ayco Driveway, 800' E of British American Blvd
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. Lane: 0
Survey Duration: 15:37 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018,
Zone:
File: 116-232 0 2018-02-01 0909.EC0 (Plus)
Identifier: R7190MC2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 17:00 Monday, January 29, 2018 => 8:00 Thursday, February 1, 2018 (2.625)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: East, West (bound), P = East, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 3170 / 3395 (93.37%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-938

Location: 116-232.0.1EW
Description: Located on Ayco Driveway, 800' E of British American Blvd
Filter time: 17:00 Monday, January 29, 2018 => 8:00 Thursday, February 1, 2018
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1-13) Dir(EW) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	3.0	1.0	0.0	*	*	*	1.3	1.3
0100-0200	*	0.0	0.0	0.0	*	*	*	0.0	0.0
0200-0300	*	0.0	0.0	0.0	*	*	*	0.0	0.0
0300-0400	*	0.0	2.0	0.0	*	*	*	0.7	0.7
0400-0500	*	4.0	4.0	6.0	*	*	*	4.7	4.7
0500-0600	*	5.0	5.0	6.0	*	*	*	5.3	5.3
0600-0700	*	40.0	41.0	34.0	*	*	*	38.3	38.3
0700-0800	*	235.0	272.0	242.0	*	*	*	249.7	249.7
0800-0900	*	145.0	154.0	*	*	*	*	149.5	149.5
0900-1000	*	28.0	29.0	*	*	*	*	28.5	28.5
1000-1100	*	22.0	27.0	*	*	*	*	24.5	24.5
1100-1200	*	39.0	45.0	*	*	*	*	42.0	42.0
1200-1300	*	126.0	154.0	*	*	*	*	140.0	140.0
1300-1400	*	87.0	110.0	*	*	*	*	98.5	98.5
1400-1500	*	31.0	48.0	*	*	*	*	39.5	39.5
1500-1600	*	45.0	46.0	*	*	*	*	45.5	45.5
1600-1700	*	148.0	157.0	*	*	*	*	152.5	152.5
1700-1800	205.0	171.0	192.0	*	*	*	*	189.3	189.3
1800-1900	47.0	65.0	52.0	*	*	*	*	54.7	54.7
1900-2000	18.0	13.0	13.0	*	*	*	*	14.7	14.7
2000-2100	9.0	8.0	7.0	*	*	*	*	8.0	8.0
2100-2200	7.0	4.0	7.0	*	*	*	*	6.0	6.0
2200-2300	2.0	1.0	2.0	*	*	*	*	1.7	1.7
2300-2400	3.0	1.0	2.0	*	*	*	*	2.0	2.0
Totals									
0700-1900	*	1142.0	1286.0	*	*	*	*	1214.2	1214.2
0600-2200	*	1207.0	1354.0	*	*	*	*	1281.2	1281.2
0600-0000	*	1209.0	1358.0	*	*	*	*	1284.8	1284.8
0000-0000	*	1221.0	1370.0	*	*	*	*	1296.8	1296.8
AM Peak	*	0700	0700	*	*	*	*		
	*	235.0	272.0	*	*	*	*		
PM Peak	*	1700	1700	*	*	*	*		
	*	171.0	192.0	*	*	*	*		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

tWeeklyVehicle-939 -- English (ENU)

Datasets:

Site: [116-232] Located on Ayco Driveway, 800' E of British American Blvd
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. Lane: 0
Survey Duration: 15:37 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018,
Zone:
File: 116-232 0 2018-02-01 0909.EC0 (Plus)
Identifier: R7190MC2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 17:00 Monday, January 29, 2018 => 8:00 Thursday, February 1, 2018 (2.625)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: AB , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 1582 / 3395 (46.60%)

Weekly Vehicle Counts (Virtual Week)**VirtWeeklyVehicle-939**

ID: 116-232.0.1EW
Description: Located on Ayco Driveway, 800' E of British American Blvd
Filter time: 17:00 Monday, January 29, 2018 => 8:00 Thursday, February 1, 2018
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1-13) Dir(EB) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	0.0	0.0	0.0	*	*	*	0.0	0.0
0100-0200	*	0.0	0.0	0.0	*	*	*	0.0	0.0
0200-0300	*	0.0	0.0	0.0	*	*	*	0.0	0.0
0300-0400	*	0.0	1.0	0.0	*	*	*	0.3	0.3
0400-0500	*	2.0	2.0	3.0	*	*	*	2.3	2.3
0500-0600	*	3.0	4.0	4.0	*	*	*	3.7	3.7
0600-0700	*	39.0	39.0	31.0	*	*	*	36.3	36.3
0700-0800	*	230.0	268.0	236.0	*	*	*	244.7	244.7
0800-0900	*	138.0	143.0	*	*	*	*	140.5	140.5
0900-1000	*	23.0	20.0	*	*	*	*	21.5	21.5
1000-1100	*	9.0	15.0	*	*	*	*	12.0	12.0
1100-1200	*	12.0	15.0	*	*	*	*	13.5	13.5
1200-1300	*	52.0	49.0	*	*	*	*	50.5	50.5
1300-1400	*	54.0	68.0	*	*	*	*	61.0	61.0
1400-1500	*	19.0	18.0	*	*	*	*	18.5	18.5
1500-1600	*	10.0	19.0	*	*	*	*	14.5	14.5
1600-1700	*	7.0	12.0	*	*	*	*	9.5	9.5
1700-1800	7.0	4.0	3.0	*	*	*	*	4.7	4.7
1800-1900	1.0	5.0	3.0	*	*	*	*	3.0	3.0
1900-2000	1.0	0.0	0.0	*	*	*	*	0.3	0.3
2000-2100	3.0	1.0	1.0	*	*	*	*	1.7	1.7
2100-2200	1.0	0.0	3.0	*	*	*	*	1.3	1.3
2200-2300	0.0	0.0	1.0	*	*	*	*	0.3	0.3
2300-2400	2.0	1.0	0.0	*	*	*	*	1.0	1.0
Totals									
0700-1900	*	563.0	633.0	*	*	*	*	593.8	593.8
0600-2200	*	603.0	676.0	*	*	*	*	633.5	633.5
0600-0000	*	604.0	677.0	*	*	*	*	634.8	634.8
0000-0000	*	609.0	684.0	*	*	*	*	641.2	641.2
AM Peak	*	0700	0700	*	*	*	*		
	*	230.0	268.0	*	*	*	*		
PM Peak	*	1300	1300	*	*	*	*		
	*	54.0	68.0	*	*	*	*		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

tWeeklyVehicle-940 -- English (ENU)

Datasets:

Site: [116-232] Located on Ayco Driveway, 800' E of British American Blvd
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. **Lane:** 0
Survey Duration: 15:37 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018,
Zone:
File: 116-232 0 2018-02-01 0909.EC0 (Plus)
Identifier: R7190MC2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 17:00 Monday, January 29, 2018 => 8:00 Thursday, February 1, 2018 (2.625)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: BA , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 1588 / 3395 (46.77%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-940

e: 116-232.0.1EW
Description: Located on Ayco Driveway, 800' E of British American Blvd
Filter time: 17:00 Monday, January 29, 2018 => 8:00 Thursday, February 1, 2018
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1-13) Dir(WB) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	3.0	1.0	0.0	*	*	*	1.3	1.3
0100-0200	*	0.0	0.0	0.0	*	*	*	0.0	0.0
0200-0300	*	0.0	0.0	0.0	*	*	*	0.0	0.0
0300-0400	*	0.0	1.0	0.0	*	*	*	0.3	0.3
0400-0500	*	2.0	2.0	3.0	*	*	*	2.3	2.3
0500-0600	*	2.0	1.0	2.0	*	*	*	1.7	1.7
0600-0700	*	1.0	2.0	3.0	*	*	*	2.0	2.0
0700-0800	*	5.0	4.0	6.0	*	*	*	5.0	5.0
0800-0900	*	7.0	11.0	*	*	*	*	9.0	9.0
0900-1000	*	5.0	9.0	*	*	*	*	7.0	7.0
1000-1100	*	13.0	12.0	*	*	*	*	12.5	12.5
1100-1200	*	27.0	30.0	*	*	*	*	28.5	28.5
1200-1300	*	74.0	105.0	*	*	*	*	89.5	89.5
1300-1400	*	33.0	42.0	*	*	*	*	37.5	37.5
1400-1500	*	12.0	30.0	*	*	*	*	21.0	21.0
1500-1600	*	35.0	27.0	*	*	*	*	31.0	31.0
1600-1700	*	141.0	145.0	*	*	*	*	143.0	143.0
1700-1800	198.0	167.0	189.0	*	*	*	*	184.7	184.7
1800-1900	46.0	60.0	49.0	*	*	*	*	51.7	51.7
1900-2000	17.0	13.0	13.0	*	*	*	*	14.3	14.3
2000-2100	6.0	7.0	6.0	*	*	*	*	6.3	6.3
2100-2200	6.0	4.0	4.0	*	*	*	*	4.7	4.7
2200-2300	2.0	1.0	1.0	*	*	*	*	1.3	1.3
2300-2400	1.0	0.0	2.0	*	*	*	*	1.0	1.0
Totals									
0700-1900	*	579.0	653.0	*	*	*	*	620.3	620.3
0600-2200	*	604.0	678.0	*	*	*	*	647.7	647.7
0600-0000	*	605.0	681.0	*	*	*	*	650.0	650.0
0000-0000	*	612.0	686.0	*	*	*	*	655.7	655.7
AM Peak	*	1100	1100	*	*	*	*		
	*	27.0	30.0	*	*	*	*		
PM Peak	*	1700	1700	*	*	*	*		
	*	167.0	189.0	*	*	*	*		

* - No data.

MetroCount Traffic Executive Vehicle Counts

VehicleCount-947 -- English (ENU)

Datasets:

Site: [116-232] Located on Ayco Driveway, 800' E of British American Blvd
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. Lane: 0
Survey Duration: 15:37 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018,
Zone:
File: 116-232 0 2018-02-01 0909.EC0 (Plus)
Identifier: R7190MC2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 15:38 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018 (2.72972)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: East, West (bound), P = East, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 3395 / 3395 (100.00%)

*** Monday, January 29, 2018 - Total=407 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	116	205	47	18	9	7	2	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	84	25	6	2	5	1	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	54	10	7	1	0	1	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	62	34	6	3	3	1	0	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	40	33	6	2	3	1	0	1

*** Tuesday, January 30, 2018 - Total=1221, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
3	0	0	0	4	5	40	235	145	28	22	39	126	87	31	45	148	171	65	13	8	4	1	1
3	0	0	0	0	2	3	27	69	8	7	10	32	28	13	10	24	75	28	4	4	3	0	0
0	0	0	0	0	0	6	46	45	8	6	4	35	25	8	5	22	34	20	3	1	1	0	0
0	0	0	0	2	1	9	56	17	5	3	10	33	21	7	16	69	36	8	6	1	0	1	0
0	0	0	0	2	2	22	106	14	7	6	15	26	13	3	14	33	26	9	0	2	0	0	0

AM Peak 0715 - 0815 (277), AM PHF=0.65 PM Peak 1630 - 1730 (211), PM PHF=0.70

*** Wednesday, January 31, 2018 - Total=1370, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
1	0	0	2	4	5	41	272	154	29	27	45	154	110	48	46	157	192	52	13	7	7	2	2
0	0	0	2	0	0	6	31	63	7	9	8	45	34	25	9	29	91	20	7	1	1	1	0
1	0	0	0	0	0	7	43	50	2	9	4	48	30	8	8	26	34	14	3	1	0	1	0
0	0	0	0	2	1	5	76	29	11	6	18	34	25	7	19	62	42	8	1	4	4	0	1
0	0	0	0	2	4	23	122	12	9	3	15	27	21	8	10	40	25	10	2	1	2	0	1

AM Peak 0730 - 0830 (311), AM PHF=0.64 PM Peak 1630 - 1730 (227), PM PHF=0.62

*** Thursday, February 1, 2018 - Total=397 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0	0	0	0	6	6	34	242	109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	4	29	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	4	0	2	43	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	2	0	8	53	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	6	20	117	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	AM	PM
MONDAY	X	240
TUESDAY	277	211
WEDNESDAY	304	227
THURSDAY	270	X
<u>AVERAGE</u>	<u>284</u>	<u>226</u>

MetroCount Traffic Executive Vehicle Counts

VehicleCount-948 -- English (ENU)

Datasets:

Site: [116-232] Located on Ayco Driveway, 800' E of British American Blvd
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. Lane: 0
Survey Duration: 15:37 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018,
Zone:
File: 116-232 0 2018-02-01 0909.EC0 (Plus)
Identifier: R7190MC2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 15:38 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018 (2.72972)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: AB , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 1693 / 3395 (49.87%)

* Monday, January 29, 2018 - Total=19 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	7	1	1	3	1	0	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	0	1	0	1	0	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	3	0	0	0	0	0	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	0	0	2	0	0	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	1	1	0	1	0	0

* Tuesday, January 30, 2018 - Total=609, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0	0	0	0	2	3	39	230	138	23	9	12	52	54	19	10	7	4	5	0	1	0	0	1
0	0	0	0	0	1	3	26	67	7	1	2	5	21	10	5	0	1	1	0	0	0	0	0
0	0	0	0	0	0	5	45	43	7	4	2	16	17	4	1	2	1	1	0	0	0	0	0
0	0	0	0	1	1	9	54	17	4	1	6	14	10	4	1	3	1	1	0	0	0	0	1
0	0	0	0	1	1	22	105	11	5	3	2	17	6	1	3	2	1	2	0	1	0	0	0

AM Peak 0715 - 0815 (271), AM PHF=0.65 PM Peak 1230 - 1330 (69), PM PHF=0.82

* Wednesday, January 31, 2018 - Total=684, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0	0	0	1	2	4	39	268	143	20	15	15	49	68	18	19	12	3	3	0	1	3	1	0
0	0	0	1	0	0	5	31	59	7	6	4	5	19	6	2	4	1	0	0	0	0	0	0
0	0	0	0	0	0	6	40	47	2	5	1	13	16	6	4	1	0	1	0	0	0	1	0
0	0	0	0	1	1	5	76	26	7	1	5	17	15	4	10	2	0	1	0	1	2	0	0
0	0	0	0	1	3	23	121	11	4	3	5	14	18	2	3	5	2	1	0	0	1	0	0

AM Peak 0730 - 0830 (303), AM PHF=0.63 PM Peak 1300 - 1400 (68), PM PHF=0.89

* Thursday, February 1, 2018 - Total=381 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0	0	0	0	3	4	31	236	107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	4	29	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	2	0	2	40	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	1	0	6	53	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	4	19	114	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	ENTERING	
	Am	Pm
MONDAY	X	9
TUESDAY	271	7
WEDNESDAY	296	8
THURSDAY	263	X
<hr/>		
AVERAGE	277	8

MetroCount Traffic Executive Vehicle Counts

VehicleCount-949 -- English (ENU)

Datasets:

Site: [116-232] Located on Ayco Driveway, 800' E of British American Blvd
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. **Lane:** 0
Survey Duration: 15:37 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018,
Zone:
File: 116-232 0 2018-02-01 0909.EC0 (Plus)
Identifier: R7190MC2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 15:38 Monday, January 29, 2018 => 9:08 Thursday, February 1, 2018 (2.72972)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: BA , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 1702 / 3395 (50.13%)

* Monday, January 29, 2018 - Total=388 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	112	198	46	17	6	6	2	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	82	25	5	2	4	1	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	51	10	7	1	0	1	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	60	33	6	3	1	1	0	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	38	32	5	2	2	1	0	0

* Tuesday, January 30, 2018 - Total=612, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
3	0	0	0	2	2	1	5	7	5	13	27	74	33	12	35	141	167	60	13	7	4	1	0
3	0	0	0	0	1	0	1	2	1	6	8	27	7	3	5	24	74	27	4	4	3	0	0
0	0	0	0	0	0	1	1	2	1	2	2	19	8	4	4	20	33	19	3	1	1	0	0
0	0	0	0	1	0	0	2	0	1	2	4	19	11	3	15	66	35	7	6	1	0	1	0
0	0	0	0	1	1	0	1	3	2	3	13	9	7	2	11	31	25	7	0	1	0	0	0

AM Peak 1145 - 1245 (78), AM PHF=0.72 PM Peak 1630 - 1730 (204), PM PHF=0.69

* Wednesday, January 31, 2018 - Total=686, 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
1	0	0	1	2	1	2	4	11	9	12	30	105	42	30	27	145	189	49	13	6	4	1	2
0	0	0	1	0	0	1	0	4	0	3	4	40	15	19	7	25	90	20	7	1	1	1	0
1	0	0	0	0	0	1	3	3	0	4	3	35	14	2	4	25	34	13	3	1	0	0	0
0	0	0	0	1	0	0	0	3	4	5	13	17	10	3	9	60	42	7	1	3	2	0	1
0	0	0	0	1	1	0	1	1	5	0	10	13	3	6	7	35	23	9	2	1	1	0	1

AM Peak 1145 - 1245 (102), AM PHF=0.64 PM Peak 1630 - 1730 (219), PM PHF=0.61

* Thursday, February 1, 2018 - Total=16 (Incomplete) , 15 minute drops

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0	0	0	0	3	2	3	6	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	2	0	0	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	1	0	2	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	2	1	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	EXITING	
	Am	Pm
Monday	X	231
Tuesday	6	204
Wednesday	8	219
Thursday	7	X
<u>Average</u>	<u>7</u>	<u>218</u>

Attachment B
Signal Warrant ATRs

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

tWeeklyVehicle-962 -- English (ENU)

Datasets:

Site: [116-232] Located on US Route 9, 110' S of Autopark Dr
Attribute: Starlight
Direction: 7 - North bound A>B, South bound B>A. Lane: 0
Survey Duration: 16:51 Tuesday, January 30, 2018 => 11:19 Friday, February 2, 2018,
Zone:
File: 116-232 0 2018-02-05 0916.EC0 (Plus)
Identifier: FZ20J05H MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 13:00 Wednesday, January 31, 2018 => 10:00 Friday, February 2, 2018 (1.875)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: AB , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 18428 / 20454 (90.09%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-962

e: 116-232.0.1NS
Description: Located on US Route 9, 110' S of Autopark Dr
Filter time: 13:00 Wednesday, January 31, 2018 => 10:00 Friday, February 2, 2018
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1-13) Dir(NB) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	*	*	41.0	47.0	*	*	44.0	44.0
0100-0200	*	*	*	17.0	19.0	*	*	18.0	18.0
0200-0300	*	*	*	16.0	22.0	*	*	19.0	19.0
0300-0400	*	*	*	19.0	29.0	*	*	24.0	24.0
0400-0500	*	*	*	23.0	29.0	*	*	26.0	26.0
0500-0600	*	*	*	81.0	69.0	*	*	75.0	75.0
0600-0700	*	*	*	269.0	237.0	*	*	253.0	253.0
0700-0800	*	*	*	470.0	464.0	*	*	467.0	467.0
0800-0900	*	*	*	592.0	662.0	*	*	627.0	627.0
0900-1000	*	*	*	499.0	533.0	*	*	516.0	516.0
1000-1100	*	*	*	506.0	*	*	*	506.0	506.0
1100-1200	*	*	*	536.0	*	*	*	536.0	536.0
1200-1300	*	*	*	679.0	*	*	*	679.0	679.0
1300-1400	*	*	719.0	637.0	*	*	*	678.0	678.0
1400-1500	*	*	700.0	678.0	*	*	*	689.0	689.0
1500-1600	*	*	827.0	810.0	*	*	*	818.5	818.5
1600-1700	*	*	966.0	1099.0	*	*	*	1032.5	1032.5
1700-1800	*	*	1128.0	1327.0	*	*	*	1227.5	1227.5
1800-1900	*	*	589.0	699.0	*	*	*	644.0	644.0
1900-2000	*	*	431.0	421.0	*	*	*	426.0	426.0
2000-2100	*	*	355.0	314.0	*	*	*	334.5	334.5
2100-2200	*	*	210.0	222.0	*	*	*	216.0	216.0
2200-2300	*	*	137.0	137.0	*	*	*	137.0	137.0
2300-2400	*	*	81.0	82.0	*	*	*	81.5	81.5
Totals									
0700-1900	*	*	*	8532.0	*	*	*	8420.5	8420.5
0600-2200	*	*	*	9758.0	*	*	*	9650.0	9650.0
0600-0000	*	*	*	9977.0	*	*	*	9868.5	9868.5
0000-0000	*	*	*	10174.0	*	*	*	10074.5	10074.5
AM Peak	*	*	*	0800	*	*	*		
	*	*	*	592.0	*	*	*		
PM Peak	*	*	*	1700	*	*	*		
	*	*	*	1327.0	*	*	*		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

WeeklyVehicle-973 -- English (ENU)

Datasets:

Site: [116-232] Located on US Route 9, 120' N of Autopark Dr
Attribute: Starlight
Direction: 7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration: 16:47 Tuesday, January 30, 2018 => 9:03 Monday, February 5, 2018,
Zone:
File: 116-232 0 2018-02-05 0903.EC0 (Plus)
Identifier: R717H3E2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 11:00 Wednesday, January 31, 2018 => 14:00 Friday, February 2, 2018 (2.125)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: BA , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 28737 / 30559 (94.04%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-973

ID: 116-232.0.1NS
 Description: Located on US Route 9, 120' N of Autopark Dr
 Filter time: 11:00 Wednesday, January 31, 2018 => 14:00 Friday, February 2, 2018
 Scheme: Vehicle classification (Scheme F3)
 Filter: Cls(1-13) Dir(SB) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	*	*	35.0	42.0	*	*	38.5	38.5
0100-0200	*	*	*	13.0	21.0	*	*	17.0	17.0
0200-0300	*	*	*	23.0	19.0	*	*	21.0	21.0
0300-0400	*	*	*	24.0	35.0	*	*	29.5	29.5
0400-0500	*	*	*	66.0	69.0	*	*	67.5	67.5
0500-0600	*	*	*	210.0	188.0	*	*	199.0	199.0
0600-0700	*	*	*	704.0	627.0	*	*	665.5	665.5
0700-0800	*	*	*	1614.0	1489.0	*	*	1551.5	1551.5
0800-0900	*	*	*	1424.0	1271.0	*	*	1347.5	1347.5
0900-1000	*	*	*	831.0	810.0	*	*	820.5	820.5
1000-1100	*	*	*	715.0	748.0	*	*	731.5	731.5
1100-1200	*	*	767.0	804.0	806.0	*	*	792.3	792.3
1200-1300	*	*	865.0	779.0	897.0	*	*	847.0	847.0
1300-1400	*	*	795.0	748.0	848.0	*	*	797.0	797.0
1400-1500	*	*	790.0	793.0	*	*	*	791.5	791.5
1500-1600	*	*	886.0	829.0	*	*	*	857.5	857.5
1600-1700	*	*	878.0	900.0	*	*	*	889.0	889.0
1700-1800	*	*	901.0	937.0	*	*	*	919.0	919.0
1800-1900	*	*	646.0	641.0	*	*	*	643.5	643.5
1900-2000	*	*	409.0	377.0	*	*	*	393.0	393.0
2000-2100	*	*	300.0	420.0	*	*	*	360.0	360.0
2100-2200	*	*	183.0	204.0	*	*	*	193.5	193.5
2200-2300	*	*	119.0	115.0	*	*	*	117.0	117.0
2300-2400	*	*	61.0	61.0	*	*	*	61.0	61.0
Totals									
0700-1900	*	*	*	11015.0	*	*	*	10987.8	10987.8
0600-2200	*	*	*	12720.0	*	*	*	12599.8	12599.8
0600-0000	*	*	*	12896.0	*	*	*	12777.8	12777.8
0000-0000	*	*	*	13267.0	*	*	*	13150.3	13150.3
AM Peak	*	*	*	0700	0700	*	*		
	*	*	*	1614.0	1489.0	*	*		
PM Peak	*	*	1700	1700	*	*	*		
	*	*	901.0	937.0	*	*	*		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtualWeeklyVehicle-981 -- English (ENU)

Datasets:

Site: [116-232] Located on Autopark Dr, 200' W of US Route 9
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. **Lane:** 1
Survey Duration: 16:55 Tuesday, January 30, 2018 => 9:01 Monday, February 5, 2018,
Zone:
File: 116-232 0 2018-02-05 0901.EC1 (Plus)
Identifier: R519M98M MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 13:00 Wednesday, January 31, 2018 => 14:00 Friday, February 2, 2018 (2.04167)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: East, West (bound), P = East, Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 2896 / 2965 (97.67%)

Weekly Vehicle Counts (Virtual Week)**VirtWeeklyVehicle-981**

File: 116-232.1.2EW
Description: Located on Autopark Dr, 200' W of US Route 9
Filter time: 13:00 Wednesday, January 31, 2018 => 14:00 Friday, February 2, 2018
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1-13) Dir(EW) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	*	*	0.0	2.0	*	*	1.0	1.0
0100-0200	*	*	*	0.0	1.0	*	*	0.5	0.5
0200-0300	*	*	*	2.0	0.0	*	*	1.0	1.0
0300-0400	*	*	*	0.0	2.0	*	*	1.0	1.0
0400-0500	*	*	*	2.0	1.0	*	*	1.5	1.5
0500-0600	*	*	*	2.0	1.0	*	*	1.5	1.5
0600-0700	*	*	*	14.0	25.0	*	*	19.5	19.5
0700-0800	*	*	*	79.0	73.0	*	*	76.0	76.0
0800-0900	*	*	*	164.0	153.0	*	*	158.5	158.5
0900-1000	*	*	*	96.0	80.0	*	*	88.0	88.0
1000-1100	*	*	*	69.0	76.0	*	*	72.5	72.5
1100-1200	*	*	*	88.0	76.0	*	*	82.0	82.0
1200-1300	*	*	*	172.0	175.0	*	*	173.5	173.5
1300-1400	*	*	150.0	150.0	162.0	*	*	154.0	154.0
1400-1500	*	*	89.0	93.0	*	*	*	91.0	91.0
1500-1600	*	*	109.0	64.0	*	*	*	86.5	86.5
1600-1700	*	*	120.0	126.0	*	*	*	123.0	123.0
1700-1800	*	*	153.0	144.0	*	*	*	148.5	148.5
1800-1900	*	*	48.0	46.0	*	*	*	47.0	47.0
1900-2000	*	*	21.0	16.0	*	*	*	18.5	18.5
2000-2100	*	*	17.0	20.0	*	*	*	18.5	18.5
2100-2200	*	*	5.0	2.0	*	*	*	3.5	3.5
2200-2300	*	*	1.0	3.0	*	*	*	2.0	2.0
2300-2400	*	*	4.0	0.0	*	*	*	2.0	2.0
Totals									
0700-1900	*	*	*	1291.0	*	*	*	1300.5	1300.5
0600-2200	*	*	*	1343.0	*	*	*	1360.5	1360.5
0600-0000	*	*	*	1346.0	*	*	*	1364.5	1364.5
0000-0000	*	*	*	1352.0	*	*	*	1371.0	1371.0
AM Peak	*	*	*	0800	0800	*	*		
	*	*	*	164.0	153.0	*	*		
PM Peak	*	*	*	1200	*	*	*		
	*	*	*	172.0	*	*	*		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

tWeeklyVehicle-982 -- English (ENU)

Datasets:

Site: [116-232] Located on Autopark Dr, 200' W of US Route 9
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. **Lane:** 1
Survey Duration: 16:55 Tuesday, January 30, 2018 => 9:01 Monday, February 5, 2018,
Zone:
File: 116-232 0 2018-02-05 0901.EC1 (Plus)
Identifier: R519M98M MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 13:00 Wednesday, January 31, 2018 => 14:00 Friday, February 2, 2018 (2.04167)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: AB , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 1479 / 2965 (49.88%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-982

e: 116-232.1.2EW
 Description: Located on Autopark Dr, 200' W of US Route 9
 Filter time: 13:00 Wednesday, January 31, 2018 => 14:00 Friday, February 2, 2018
 Scheme: Vehicle classification (Scheme F3)
 Filter: Cls(1-13) Dir(EB) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	*	*	0.0	1.0	*	*	0.5	0.5
0100-0200	*	*	*	0.0	1.0	*	*	0.5	0.5
0200-0300	*	*	*	1.0	0.0	*	*	0.5	0.5
0300-0400	*	*	*	0.0	1.0	*	*	0.5	0.5
0400-0500	*	*	*	1.0	0.0	*	*	0.5	0.5
0500-0600	*	*	*	0.0	1.0	*	*	0.5	0.5
0600-0700	*	*	*	2.0	2.0	*	*	2.0	2.0
0700-0800	*	*	*	5.0	4.0	*	*	4.5	4.5
0800-0900	*	*	*	13.0	11.0	*	*	12.0	12.0
0900-1000	*	*	*	35.0	14.0	*	*	24.5	24.5
1000-1100	*	*	*	24.0	28.0	*	*	26.0	26.0
1100-1200	*	*	*	52.0	47.0	*	*	49.5	49.5
1200-1300	*	*	*	95.0	112.0	*	*	103.5	103.5
1300-1400	*	*	60.0	60.0	61.0	*	*	60.3	60.3
1400-1500	*	*	41.0	43.0	*	*	*	42.0	42.0
1500-1600	*	*	77.0	42.0	*	*	*	59.5	59.5
1600-1700	*	*	106.0	111.0	*	*	*	108.5	108.5
1700-1800	*	*	143.0	128.0	*	*	*	135.5	135.5
1800-1900	*	*	41.0	40.0	*	*	*	40.5	40.5
1900-2000	*	*	15.0	13.0	*	*	*	14.0	14.0
2000-2100	*	*	17.0	18.0	*	*	*	17.5	17.5
2100-2200	*	*	5.0	2.0	*	*	*	3.5	3.5
2200-2300	*	*	1.0	3.0	*	*	*	2.0	2.0
2300-2400	*	*	2.0	0.0	*	*	*	1.0	1.0
Totals									
0700-1900	*	*	*	648.0	*	*	*	666.3	666.3
0600-2200	*	*	*	683.0	*	*	*	703.3	703.3
0600-0000	*	*	*	686.0	*	*	*	706.3	706.3
0000-0000	*	*	*	688.0	*	*	*	709.3	709.3
AM Peak	*	*	*	1100	1100	*	*		
	*	*	*	52.0	47.0	*	*		
PM Peak	*	*	*	1700	*	*	*		
	*	*	*	128.0	*	*	*		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

WeeklyVehicle-983 -- English (ENU)

Datasets:

Site: [116-232] Located on Autopark Dr, 200' W of US Route 9
Attribute: Starlight
Direction: 8 - East bound A>B, West bound B>A. Lane: 1
Survey Duration: 16:55 Tuesday, January 30, 2018 => 9:01 Monday, February 5, 2018,
Zone:
File: 116-232 0 2018-02-05 0901.EC1 (Plus)
Identifier: R519M98M MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 13:00 Wednesday, January 31, 2018 => 14:00 Friday, February 2, 2018 (2.04167)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: BA , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 1417 / 2965 (47.79%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-983

Location: 116-232.1.2EW
Description: Located on Autopark Dr, 200' W of US Route 9
Filter time: 13:00 Wednesday, January 31, 2018 => 14:00 Friday, February 2, 2018
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1-13) Dir(WB) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	*	*	0.0	1.0	*	*	0.5	0.5
0100-0200	*	*	*	0.0	0.0	*	*	0.0	0.0
0200-0300	*	*	*	1.0	0.0	*	*	0.5	0.5
0300-0400	*	*	*	0.0	1.0	*	*	0.5	0.5
0400-0500	*	*	*	1.0	1.0	*	*	1.0	1.0
0500-0600	*	*	*	2.0	0.0	*	*	1.0	1.0
0600-0700	*	*	*	12.0	23.0	*	*	17.5	17.5
0700-0800	*	*	*	74.0	69.0	*	*	71.5	71.5
0800-0900	*	*	*	151.0	142.0	*	*	146.5	146.5
0900-1000	*	*	*	61.0	66.0	*	*	63.5	63.5
1000-1100	*	*	*	45.0	48.0	*	*	46.5	46.5
1100-1200	*	*	*	36.0	29.0	*	*	32.5	32.5
1200-1300	*	*	*	77.0	63.0	*	*	70.0	70.0
1300-1400	*	*	90.0	90.0	101.0	*	*	93.7	93.7
1400-1500	*	*	48.0	50.0	*	*	*	49.0	49.0
1500-1600	*	*	32.0	22.0	*	*	*	27.0	27.0
1600-1700	*	*	14.0	15.0	*	*	*	14.5	14.5
1700-1800	*	*	10.0	16.0	*	*	*	13.0	13.0
1800-1900	*	*	7.0	6.0	*	*	*	6.5	6.5
1900-2000	*	*	6.0	3.0	*	*	*	4.5	4.5
2000-2100	*	*	0.0	2.0	*	*	*	1.0	1.0
2100-2200	*	*	0.0	0.0	*	*	*	0.0	0.0
2200-2300	*	*	0.0	0.0	*	*	*	0.0	0.0
2300-2400	*	*	2.0	0.0	*	*	*	1.0	1.0
Totals									
0700-1900	*	*	*	643.0	*	*	*	634.2	634.2
0600-2200	*	*	*	660.0	*	*	*	657.2	657.2
0600-0000	*	*	*	660.0	*	*	*	658.2	658.2
0000-0000	*	*	*	664.0	*	*	*	661.7	661.7
AM Peak	*	*	*	0800	0800	*	*		
	*	*	*	151.0	142.0	*	*		
PM Peak	*	*	*	1300	*	*	*		
	*	*	*	90.0	*	*	*		

* - No data.

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtualWeeklyVehicle-1102 -- English (ENU)

Datasets:

Site: [116-232] Located on Old Loudon Rd 400' SE of US Route 9
Attribute: Starlite
Direction: 7 - North bound A>B, South bound B>A. **Lane:** 0
Survey Duration: 10:54 Thursday, March 8, 2018 => 13:53 Friday, March 9, 2018,
Zone:
File: 116-232 0 2018-03-09 1354.EC0 (Plus)
Identifier: R717H3E2 MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default axle (v4.08)
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 12:00 Thursday, March 8, 2018 => 13:00 Friday, March 9, 2018 (1.04167)
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 5 - 100 mph.
Direction: AB , Lane = 0-16
Separation: Headway > 0 sec, Span 0 - 300 ft
Name: Default Profile
Scheme: Vehicle classification (Scheme F3)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)
In profile: Vehicles = 1636 / 1744 (93.81%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-1102

File: 116-232.0.1NS
Description: Located on Old Loudon Rd 400' SE of US Route 9
Filter time: 12:00 Thursday, March 8, 2018 => 13:00 Friday, March 9, 2018
Scheme: Vehicle classification (Scheme F3)
Filter: Cls(1-13) Dir(NB) Sp(5,100) Headway(>0) Span(0 - 300) Lane(0-16)

Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
0000-0100	*	*	*	*	4.0	*	*	4.0	4.0
0100-0200	*	*	*	*	3.0	*	*	3.0	3.0
0200-0300	*	*	*	*	5.0	*	*	5.0	5.0
0300-0400	*	*	*	*	2.0	*	*	2.0	2.0
0400-0500	*	*	*	*	4.0	*	*	4.0	4.0
0500-0600	*	*	*	*	6.0	*	*	6.0	6.0
0600-0700	*	*	*	*	29.0	*	*	29.0	29.0
0700-0800	*	*	*	*	117.0	*	*	117.0	117.0
0800-0900	*	*	*	*	123.0	*	*	123.0	123.0
0900-1000	*	*	*	*	78.0	*	*	78.0	78.0
1000-1100	*	*	*	*	85.0	*	*	85.0	85.0
1100-1200	*	*	*	*	81.0	*	*	81.0	81.0
1200-1300	*	*	*	92.0	103.0	*	*	97.5	97.5
1300-1400	*	*	*	90.0	*	*	*	90.0	90.0
1400-1500	*	*	*	116.0	*	*	*	116.0	116.0
1500-1600	*	*	*	129.0	*	*	*	129.0	129.0
1600-1700	*	*	*	156.0	*	*	*	156.0	156.0
1700-1800	*	*	*	148.0	*	*	*	148.0	148.0
1800-1900	*	*	*	88.0	*	*	*	88.0	88.0
1900-2000	*	*	*	68.0	*	*	*	68.0	68.0
2000-2100	*	*	*	48.0	*	*	*	48.0	48.0
2100-2200	*	*	*	39.0	*	*	*	39.0	39.0
2200-2300	*	*	*	14.0	*	*	*	14.0	14.0
2300-2400	*	*	*	8.0	*	*	*	8.0	8.0
Totals									
0700-1900	*	*	*	*	*	*	*	1308.5	1308.5
0600-2200	*	*	*	*	*	*	*	1492.5	1492.5
0600-0000	*	*	*	*	*	*	*	1514.5	1514.5
0000-0000	*	*	*	*	*	*	*	1538.5	1538.5
AM Peak	*	*	*	*	0800	*	*		
	*	*	*	*	123.0	*	*		
PM Peak	*	*	*	1600	*	*	*		
	*	*	*	156.0	*	*	*		

* - No data.

Attachment C
Signal Warrants

Figure 4C-2
Reduced Four-Hour Vehicular Volume Warrant
Source: Federal MUTCD
Existing

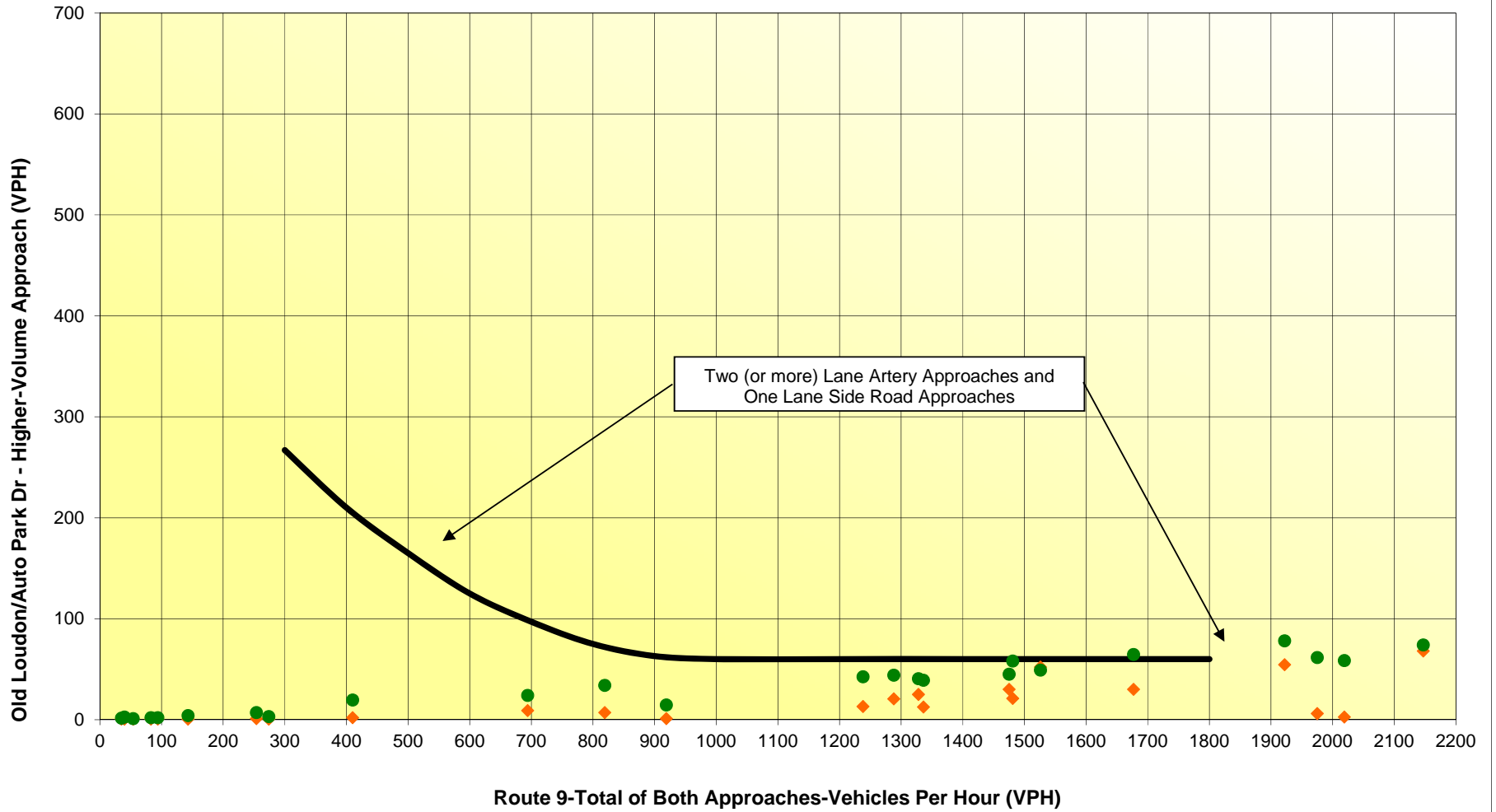


Figure 4C-4
Reduced Peak Hour Volume Warrant
Source: Federal MUTCD
Existing

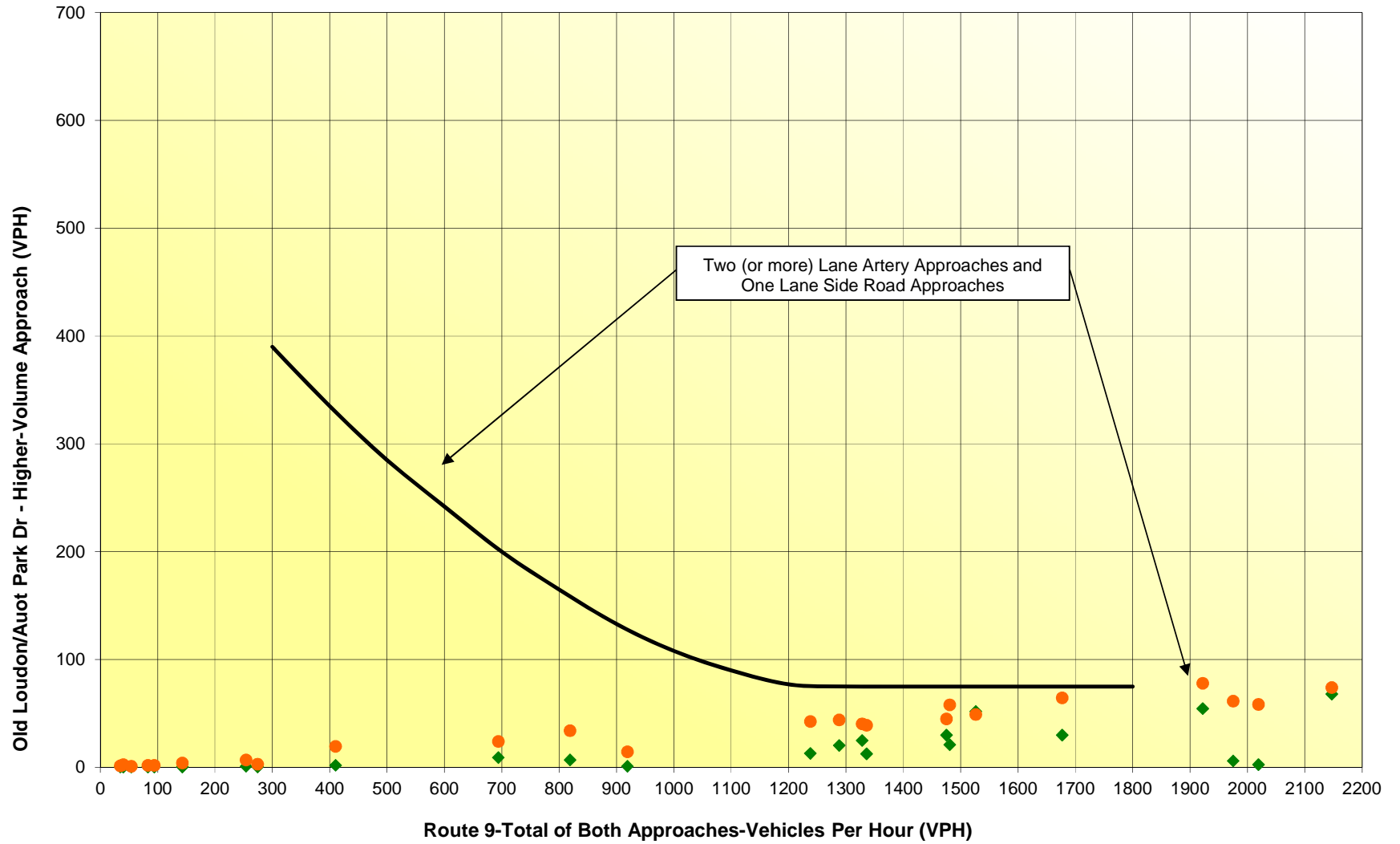


Figure 4C-2
Reduced Four-Hour Vehicular Volume Warrant
Source: Federal MUTCD
Phase 1

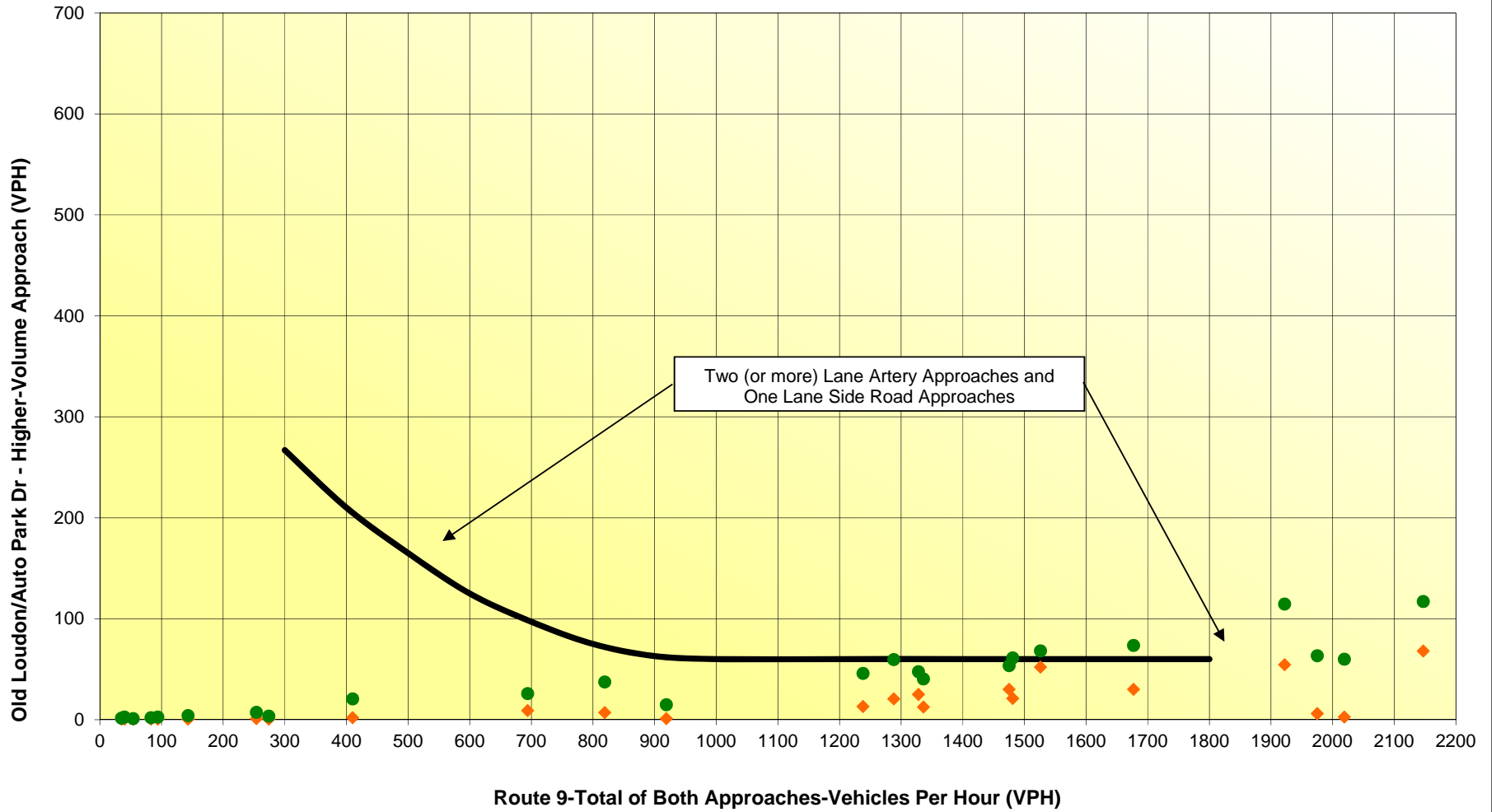
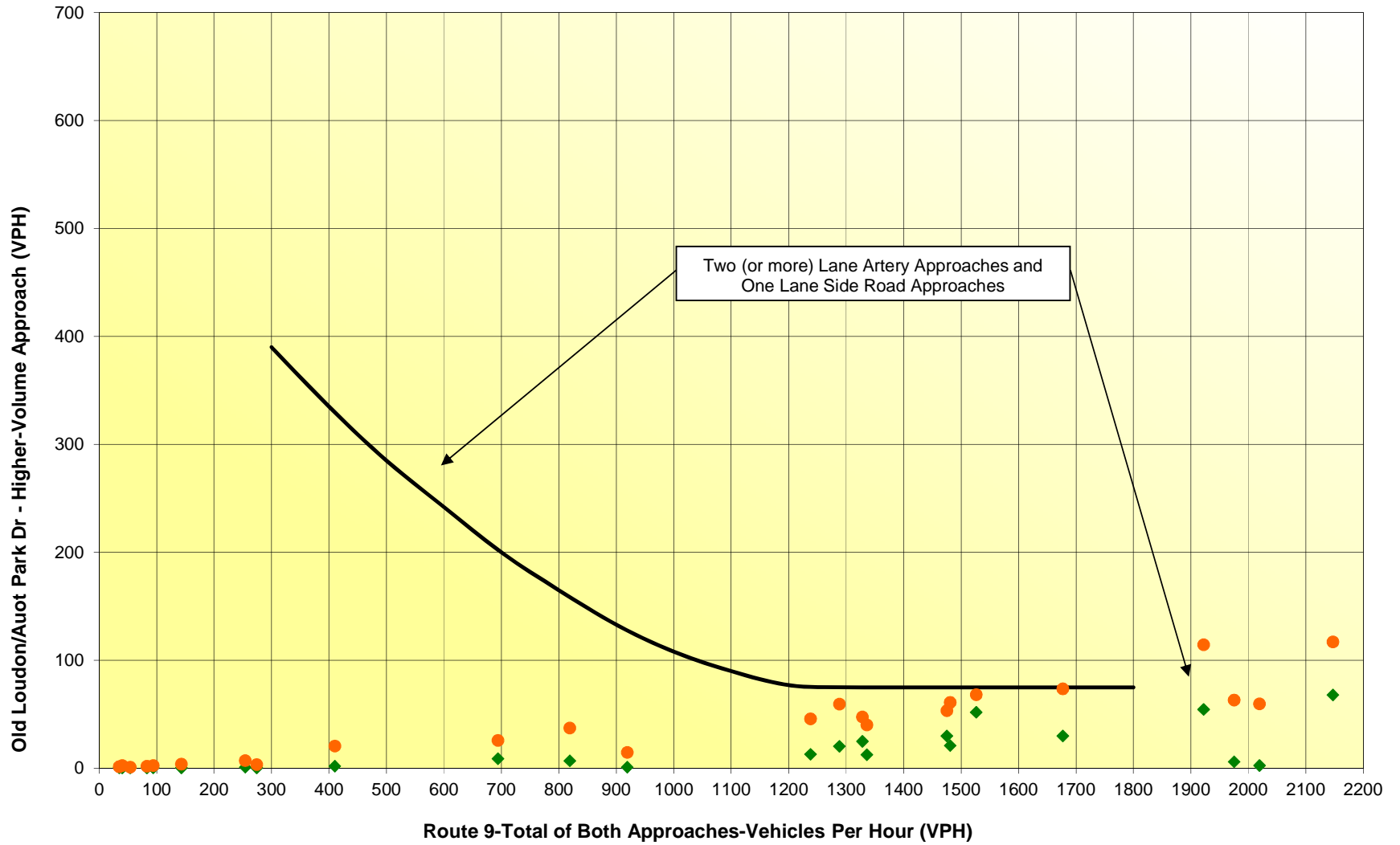























Figure 4C-4
Reduced Peak Hour Volume Warrant
Source: Federal MUTCD
Phase 1



Attachment D
Level of Service Analysis

HCM 6th Signalized Intersection Summary US Route 9 & Latham Autopark Drive/Connector Rd
 116-232; Starlite Connector Rd; Build 2020 SBR PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	127	0	18	377	11	1649	0	203	1028	2
Future Volume (veh/h)	13	0	127	0	18	377	11	1649	0	203	1028	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1976	1900	1900	1976	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	14	0	86	0	20	250	12	1792	0	221	1117	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	230	0	304	0	303	379	432	2342	0	262	2504	1117
Arrive On Green	0.16	0.00	0.16	0.00	0.16	0.16	0.02	0.65	0.00	0.13	1.00	1.00
Sat Flow, veh/h	1064	0	1675	0	1900	1675	1810	3705	0	1810	3610	1610
Grp Volume(v), veh/h	14	0	86	0	20	250	12	1792	0	221	1117	2
Grp Sat Flow(s),veh/h/ln	1064	0	1675	0	1900	1675	1810	1805	0	1810	1805	1610
Q Serve(g_s), s	1.3	0.0	5.3	0.0	1.1	16.3	0.3	41.5	0.0	4.8	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	5.3	0.0	1.1	16.3	0.3	41.5	0.0	4.8	0.0	0.0
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	0	304	0	303	379	432	2342	0	262	2504	1117
V/C Ratio(X)	0.06	0.00	0.28	0.00	0.07	0.66	0.03	0.77	0.00	0.84	0.45	0.00
Avail Cap(c_a), veh/h	322	0	441	0	459	516	512	2342	0	367	2504	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	0.52	0.52	0.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	43.8	0.0	42.4	0.0	42.8	42.2	6.5	14.7	0.0	22.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.5	0.0	0.1	2.0	0.0	1.3	0.0	10.4	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.3	0.0	0.5	6.9	0.1	15.3	0.0	4.6	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	0.0	42.9	0.0	42.9	44.2	6.6	16.0	0.0	33.0	0.5	0.0
LnGrp LOS	D	A	D	A	D	D	A	B	A	C	A	A
Approach Vol, veh/h		100			270			1804			1340	
Approach Delay, s/veh		43.0			44.1			15.9			5.9	
Approach LOS		D			D			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	82.9		24.1	7.6	88.2		24.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	61.0		29.0	8.0	68.0		29.0				
Max Q Clear Time (g_c+I1), s	6.8	43.5		7.3	2.3	2.0		18.3				
Green Ext Time (p_c), s	0.5	9.5		0.3	0.0	6.2		0.8				

Intersection Summary

HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary US Route 9 & Latham Autopark Drive/Connector Rd
 116-232; Starlite Connector Rd; Build 2020 Ph 2 w/o Betty Wmart SBR PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	27	0	20	427	11	1664	0	204	1033	2
Future Volume (veh/h)	13	0	27	0	20	427	11	1664	0	204	1033	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1976	1900	1900	1976	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	14	0	-23	0	22	304	12	1809	0	222	1123	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	251	0	352	0	357	434	413	2223	0	249	2401	1071
Arrive On Green	0.19	0.00	0.00	0.00	0.19	0.19	0.02	0.62	0.00	0.14	1.00	1.00
Sat Flow, veh/h	1016	0	1675	0	1900	1675	1810	3705	0	1810	3610	1610
Grp Volume(v), veh/h	14	0	-23	0	22	304	12	1809	0	222	1123	2
Grp Sat Flow(s),veh/h/ln	1016	0	1675	0	1900	1675	1810	1805	0	1810	1805	1610
Q Serve(g_s), s	1.3	0.0	0.0	0.0	1.1	19.7	0.3	46.3	0.0	6.1	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	0.0	1.1	19.7	0.3	46.3	0.0	6.1	0.0	0.0
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	0	352	0	357	434	413	2223	0	249	2401	1071
V/C Ratio(X)	0.06	0.00	-0.07	0.00	0.06	0.70	0.03	0.81	0.00	0.89	0.47	0.00
Avail Cap(c_a), veh/h	309	0	441	0	459	524	494	2223	0	347	2401	1071
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	1.00	0.47	0.47	0.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	41.0	0.0	0.0	0.0	40.0	40.2	7.9	17.8	0.0	25.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.0	0.1	3.2	0.0	1.6	0.0	16.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.0	0.5	8.5	0.1	17.7	0.0	4.7	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	0.0	0.0	0.0	40.1	43.5	7.9	19.4	0.0	42.0	0.6	0.0
LnGrp LOS	D	A	A	A	D	D	A	B	A	D	A	A
Approach Vol, veh/h		-9			326			1821			1347	
Approach Delay, s/veh		0.0			43.2			19.3			7.4	
Approach LOS		A			D			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	78.9		27.6	7.6	84.8		27.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	61.0		29.0	8.0	68.0		29.0				
Max Q Clear Time (g_c+I1), s	8.1	48.3		4.4	2.3	2.0		21.7				
Green Ext Time (p_c), s	0.4	7.8		0.0	0.0	6.3		0.9				

Intersection Summary

HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary US Route 9 & Latham Autopark Drive/Connector Rd
 116-232; Starlite Connector Rd; Build 2026 Phase 4 Imp SBR PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	100	554	0	80	463	389	1636	0	221	1050	137
Future Volume (veh/h)	185	100	554	0	80	463	389	1636	0	221	1050	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1976	1900	1900	1976	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	201	109	368	0	87	252	423	1778	0	240	1141	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	296	412	577	0	412	532	466	2029	0	269	1932	862
Arrive On Green	0.22	0.22	0.22	0.00	0.22	0.22	0.09	0.38	0.00	0.13	0.71	0.71
Sat Flow, veh/h	1331	1900	1675	0	1900	1675	1810	3705	0	1810	3610	1610
Grp Volume(v), veh/h	201	109	368	0	87	252	423	1778	0	240	1141	75
Grp Sat Flow(s),veh/h/ln	1331	1900	1675	0	1900	1675	1810	1805	0	1810	1805	1610
Q Serve(g_s), s	18.3	6.0	23.1	0.0	4.7	15.1	12.5	57.3	0.0	10.2	19.6	1.8
Cycle Q Clear(g_c), s	23.0	6.0	23.1	0.0	4.7	15.1	12.5	57.3	0.0	10.2	19.6	1.8
Prop In Lane	1.00		1.00	0.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	296	412	577	0	412	532	466	2029	0	269	1932	862
V/C Ratio(X)	0.68	0.26	0.64	0.00	0.21	0.47	0.91	0.88	0.00	0.89	0.59	0.09
Avail Cap(c_a), veh/h	359	502	657	0	502	612	668	2029	0	361	1932	862
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	0.40	0.40	0.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	49.6	40.7	34.4	0.0	40.2	34.2	19.1	34.9	0.0	34.2	11.2	8.6
Incr Delay (d2), s/veh	3.9	0.3	1.7	0.0	0.3	0.7	5.7	2.4	0.0	15.4	1.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	2.9	9.6	0.0	2.2	6.3	7.5	26.5	0.0	8.0	5.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	41.0	36.1	0.0	40.5	34.9	24.8	37.3	0.0	49.6	12.2	8.8
LnGrp LOS	D	D	D	A	D	C	C	D	A	D	B	A
Approach Vol, veh/h		678			339			2201			1456	
Approach Delay, s/veh		42.0			36.3			34.9			18.2	
Approach LOS		D			D			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.7	75.3		32.1	21.0	71.9		32.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	19.0	47.0		33.0	30.0	47.0		33.0				
Max Q Clear Time (g_c+I1), s	12.2	59.3		25.1	14.5	21.6		17.1				
Green Ext Time (p_c), s	0.5	0.0		2.0	1.5	6.3		1.3				

Intersection Summary

HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary
116-232; Starlite

4: US Route 9 & I-87 Ramp/NY Route 9R
Connector Rd; Build 2020 SBR PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	545	159	216	282	392	5	146	1111	1009	14	608	493
Future Volume (veh/h)	545	159	216	282	392	5	146	1111	1009	14	608	493
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1885	1885	1961	1961	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	568	166	225	294	408	4	152	1157	0	15	633	514
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	666	592	1130	408	461	5	230	1258		156	1246	861
Arrive On Green	0.19	0.31	0.31	0.12	0.24	0.22	0.15	0.59	0.00	0.17	0.70	0.70
Sat Flow, veh/h	3483	1900	2812	3483	1938	19	2549	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	568	166	225	294	0	412	152	1157	0	15	633	514
Grp Sat Flow(s),veh/h/ln	1742	1900	1406	1742	0	1957	1275	1791	1598	1795	1791	1598
Q Serve(g_s), s	18.9	7.9	6.2	9.8	0.0	24.4	6.8	34.8	0.0	0.8	10.0	5.4
Cycle Q Clear(g_c), s	18.9	7.9	6.2	9.8	0.0	24.4	6.8	34.8	0.0	0.8	10.0	5.4
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	666	592	1130	408	0	465	230	1258		156	1246	861
V/C Ratio(X)	0.85	0.28	0.20	0.72	0.00	0.89	0.66	0.92		0.10	0.51	0.60
Avail Cap(c_a), veh/h	668	592	1130	464	0	473	276	1373		156	1246	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.00	0.91	0.93	0.93	0.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	46.9	31.1	23.3	51.1	0.0	44.2	49.3	23.3	0.0	45.7	13.4	2.6
Incr Delay (d2), s/veh	10.4	0.3	0.1	4.3	0.0	16.5	4.1	11.5	0.0	0.2	1.4	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	3.6	2.1	4.5	0.0	13.8	2.2	12.3	0.0	0.4	3.2	2.2
Unsig. Movement Delay, s/veh									0.00			
LnGrp Delay(d),s/veh	57.3	31.4	23.4	55.3	0.0	60.7	53.4	34.8	0.0	45.9	14.8	5.4
LnGrp LOS	E	C	C	E	A	E	D	C	A	D	B	A
Approach Vol, veh/h		959			706			2360	A		1162	
Approach Delay, s/veh		44.9			58.5			20.5			11.0	
Approach LOS		D			E			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.4	46.1	18.1	41.4	14.8	45.7	26.9	32.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	4.0	44.0	14.0	34.0	11.0	37.0	21.0	27.0				
Max Q Clear Time (g_c+1), s	2.8	36.8	11.8	9.9	8.8	12.0	20.9	26.4				
Green Ext Time (p_c), s	0.0	3.4	0.3	1.7	0.1	5.8	0.0	0.1				

Intersection Summary
























HCM 6th Ctrl Delay	28.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
116-232; Starlite

4: US Route 9 & I-87 Ramp/NY Route 9R
Connector Rd; Build 2020 Ph 2 w/o Betty Wmart SBR PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	552	160	216	321	422	5	146	1119	1010	14	611	495
Future Volume (veh/h)	552	160	216	321	422	5	146	1119	1010	14	611	495
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1885	1885	1961	1961	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	575	167	225	334	440	4	152	1166	0	15	636	516
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	668	582	1114	443	469	4	230	1265		144	1230	855
Arrive On Green	0.19	0.31	0.31	0.13	0.24	0.22	0.15	0.59	0.00	0.16	0.69	0.69
Sat Flow, veh/h	3483	1900	2812	3483	1940	18	2549	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	575	167	225	334	0	444	152	1166	0	15	636	516
Grp Sat Flow(s),veh/h/ln	1742	1900	1406	1742	0	1957	1275	1791	1598	1795	1791	1598
Q Serve(g_s), s	19.2	8.0	6.3	11.1	0.0	26.7	6.8	35.1	0.0	0.9	10.4	5.6
Cycle Q Clear(g_c), s	19.2	8.0	6.3	11.1	0.0	26.7	6.8	35.1	0.0	0.9	10.4	5.6
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	668	582	1114	443	0	473	230	1265		144	1230	855
V/C Ratio(X)	0.86	0.29	0.20	0.75	0.00	0.94	0.66	0.92		0.10	0.52	0.60
Avail Cap(c_a), veh/h	668	582	1114	464	0	473	276	1373		144	1230	855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.88	0.00	0.88	0.93	0.93	0.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	47.0	31.7	23.8	50.6	0.0	44.6	49.3	23.1	0.0	46.7	14.0	2.7
Incr Delay (d2), s/veh	11.1	0.3	0.1	5.8	0.0	24.5	4.1	11.7	0.0	0.3	1.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	3.7	2.1	5.2	0.0	16.0	2.2	12.4	0.0	0.4	3.3	2.3
Unsig. Movement Delay, s/veh									0.00			
LnGrp Delay(d),s/veh	58.1	31.9	23.9	56.4	0.0	69.1	53.4	34.8	0.0	47.0	15.4	5.7
LnGrp LOS	E	C	C	E	A	E	D	C	A	D	B	A
Approach Vol, veh/h		967			778			2370	A		1167	
Approach Delay, s/veh		45.6			63.7			20.5			11.5	
Approach LOS		D			E			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	46.4	19.3	40.7	14.8	45.2	27.0	33.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	4.0	44.0	14.0	34.0	11.0	37.0	21.0	27.0				
Max Q Clear Time (g_c+I1), s	2.9	37.1	13.1	10.0	8.8	12.4	21.2	28.7				
Green Ext Time (p_c), s	0.0	3.3	0.1	1.7	0.1	5.8	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	29.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
116-232; Starlite

4: US Route 9 & I-87 Ramp/NY Route 9R
Connector Rd; Build 2026 Phase 4 SBR PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	574	172	227	335	432	12	146	1381	1024	21	925	618
Future Volume (veh/h)	574	172	227	335	432	12	146	1381	1024	21	925	618
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1885	1885	1961	1961	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	598	179	236	349	450	11	152	1439	0	22	964	644
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1	1	1	1	1	1	1		1	1
Cap, veh/h	641	537	1043	464	442	11	224	1461		86	1318	882
Arrive On Green	0.18	0.28	0.28	0.13	0.23	0.22	0.09	0.41	0.00	0.02	0.12	0.12
Sat Flow, veh/h	3483	1900	2812	3483	1906	47	2549	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	598	179	236	349	0	461	152	1439	0	22	964	644
Grp Sat Flow(s),veh/h/ln	1742	1900	1406	1742	0	1952	1275	1791	1598	1795	1791	1598
Q Serve(g_s), s	21.1	9.3	7.2	12.1	0.0	29.0	7.2	49.7	0.0	1.5	32.4	16.8
Cycle Q Clear(g_c), s	21.1	9.3	7.2	12.1	0.0	29.0	7.2	49.7	0.0	1.5	32.4	16.8
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	641	537	1043	464	0	453	224	1461		86	1318	882
V/C Ratio(X)	0.93	0.33	0.23	0.75	0.00	1.02	0.68	0.98		0.26	0.73	0.73
Avail Cap(c_a), veh/h	641	537	1043	557	0	453	224	1461		86	1318	882
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.00	0.84	0.93	0.93	0.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	50.2	35.5	27.0	52.2	0.0	48.0	55.3	36.6	0.0	59.3	49.0	16.2
Incr Delay (d2), s/veh	20.8	0.4	0.1	4.0	0.0	43.3	7.4	19.3	0.0	1.0	2.4	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	4.4	2.4	5.5	0.0	19.3	2.5	24.6	0.0	0.7	16.0	7.5
Unsig. Movement Delay, s/veh									0.00			
LnGrp Delay(d),s/veh	71.0	35.9	27.1	56.1	0.0	91.4	62.7	56.0	0.0	60.3	51.3	19.7
LnGrp LOS	E	D	C	E	A	F	E	E	A	E	D	B
Approach Vol, veh/h		1013			810			2658	A		1630	
Approach Delay, s/veh		54.6			76.2			33.9			38.9	
Approach LOS		D			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	55.0	20.6	39.4	15.0	50.0	27.0	33.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	4.0	49.0	18.0	30.0	9.0	44.0	21.0	27.0				
Max Q Clear Time (g_c+I1), s	3.5	51.7	14.1	11.3	9.2	34.4	23.1	31.0				
Green Ext Time (p_c), s	0.0	0.0	0.6	1.7	0.0	5.4	0.0	0.0				

Intersection Summary

























HCM 6th Ctrl Delay	44.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
116-232; Starlite

4: US Route 9 & I-87 Ramp/NY Route 9R
Connector Rd; Build 2026 Phase 4 Imp SBR PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	574	172	227	335	432	12	146	1381	1024	21	925	618
Future Volume (veh/h)	574	172	227	335	432	12	146	1381	1024	21	925	618
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1900	1885	1885	1961	1961	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	598	179	236	349	450	11	152	1439	0	22	964	644
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	641	398	837	464	590	14	224	1461		218	1581	999
Arrive On Green	0.18	0.21	0.21	0.13	0.16	0.14	0.09	0.41	0.00	0.04	0.15	0.15
Sat Flow, veh/h	3483	1900	2812	3483	3716	91	2549	3582	1598	1795	3582	1598
Grp Volume(v), veh/h	598	179	236	349	225	236	152	1439	0	22	964	644
Grp Sat Flow(s),veh/h/ln	1742	1900	1406	1742	1863	1944	1275	1791	1598	1795	1791	1598
Q Serve(g_s), s	21.1	10.3	8.0	12.1	14.5	14.5	7.2	49.7	0.0	1.5	31.5	14.6
Cycle Q Clear(g_c), s	21.1	10.3	8.0	12.1	14.5	14.5	7.2	49.7	0.0	1.5	31.5	14.6
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	641	398	837	464	296	309	224	1461		218	1581	999
V/C Ratio(X)	0.93	0.45	0.28	0.75	0.76	0.76	0.68	0.98		0.10	0.61	0.64
Avail Cap(c_a), veh/h	641	486	967	557	432	451	224	1461		218	1581	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	0.93	0.93	0.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	50.2	43.1	33.7	52.2	50.3	50.4	55.3	36.6	0.0	53.4	43.3	11.1
Incr Delay (d2), s/veh	20.8	0.8	0.2	4.0	3.9	3.8	7.4	19.3	0.0	0.1	1.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	4.9	2.8	5.5	7.0	7.3	2.5	24.6	0.0	0.7	15.4	8.1
Unsig. Movement Delay, s/veh									0.00			
LnGrp Delay(d),s/veh	71.0	43.9	33.9	56.1	54.3	54.2	62.7	56.0	0.0	53.6	44.5	13.2
LnGrp LOS	E	D	C	E	D	D	E	E	A	D	D	B
Approach Vol, veh/h		1013			810			2658	A		1630	
Approach Delay, s/veh		57.6			55.1			33.9			32.2	
Approach LOS		E			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	55.0	20.6	30.2	15.0	59.2	27.0	23.8				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	4.0	49.0	18.0	30.0	9.0	44.0	21.0	27.0				
Max Q Clear Time (g_c+I1), s	3.5	51.7	14.1	12.3	9.2	33.5	23.1	16.5				
Green Ext Time (p_c), s	0.0	0.0	0.6	1.7	0.0	5.8	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is included in calculations of the approach delay and intersection delay.

Intersection

Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	753	404	2	0	60
Future Vol, veh/h	0	753	404	2	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	818	439	2	0	65

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	618
HCM Lane V/C Ratio	-	-	0.106
HCM Control Delay (s)	-	-	11.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

Intersection

Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	817	450	3	0	95
Future Vol, veh/h	0	817	450	3	0	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	888	489	3	0	103

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	579
HCM Lane V/C Ratio	-	-	0.178
HCM Control Delay (s)	-	-	12.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6

Intersection

Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	824	462	2	0	93
Future Vol, veh/h	0	824	462	2	0	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	896	502	2	0	101























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.318
Pot Cap-1 Maneuver	0	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	569
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	569
HCM Lane V/C Ratio	-	-	0.178
HCM Control Delay (s)	-	-	12.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6























HCM 6th Signalized Intersection Summary
116-232; Starlite

6: Johnson Road/Connector Rd & NY Route 9R
Connector Rd; Build 2020 SBR PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	611	388	6	418	40	292	78	6	136	213	86
Future Volume (veh/h)	39	611	388	6	418	40	292	78	6	136	213	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1885	1885	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	40	630	400	6	431	41	301	80	6	140	220	89
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	1	1	0	0	0	0	0
Cap, veh/h	366	879	1043	211	790	75	511	737	55	346	350	274
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.45	0.18	0.42	0.41	0.18	0.18	0.17
Sat Flow, veh/h	936	1885	1610	556	1695	161	1795	1746	131	1332	1900	1610
Grp Volume(v), veh/h	40	630	400	6	0	472	301	0	86	140	220	89
Grp Sat Flow(s),veh/h/ln	936	1885	1610	556	0	1856	1795	0	1876	1332	1900	1610
Q Serve(g_s), s	2.3	19.2	8.3	0.6	0.0	13.0	8.7	0.0	2.0	6.8	7.6	3.5
Cycle Q Clear(g_c), s	15.3	19.2	8.3	19.8	0.0	13.0	8.7	0.0	2.0	6.8	7.6	3.5
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	366	879	1043	211	0	865	511	0	792	346	350	274
V/C Ratio(X)	0.11	0.72	0.38	0.03	0.00	0.55	0.59	0.00	0.11	0.40	0.63	0.32
Avail Cap(c_a), veh/h	676	1503	1576	395	0	1480	762	0	1443	622	744	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	15.3	5.9	23.2	0.0	13.7	16.7	0.0	12.5	26.6	26.9	26.0
Incr Delay (d2), s/veh	0.2	1.9	0.4	0.1	0.0	0.9	1.5	0.0	0.1	1.1	2.6	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	7.6	2.0	0.1	0.0	4.7	3.4	0.0	0.8	2.2	3.6	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	17.2	6.3	23.3	0.0	14.6	18.2	0.0	12.6	27.7	29.5	27.0
LnGrp LOS	B	B	A	C	A	B	B	A	B	C	C	C
Approach Vol, veh/h		1070			478			387			449	
Approach Delay, s/veh		13.2			14.7			17.0			28.4	
Approach LOS		B			B			B			C	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		37.3	17.0	17.2		37.3		34.2				
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0				
Max Green Setting (Gmax), s		56.0	22.0	27.0		56.0		54.0				
Max Q Clear Time (g_c+I1), s		21.2	10.7	9.6		21.8		4.0				
Green Ext Time (p_c), s		11.2	1.3	2.5		4.0		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									























HCM 6th Signalized Intersection Summary
116-232; Starlite

6: Johnson Road/Connector Rd & NY Route 9R
Connector Rd; Build 2026 Phase 2 SBR PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	611	388	6	453	86	292	93	6	200	299	127
Future Volume (veh/h)	42	611	388	6	453	86	292	93	6	200	299	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1885	1885	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	630	400	6	467	89	301	96	6	206	308	131
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	1	1	0	0	0	0	0
Cap, veh/h	269	845	991	184	690	131	474	802	50	399	448	360
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.44	0.17	0.45	0.44	0.24	0.24	0.22
Sat Flow, veh/h	866	1885	1610	556	1539	293	1795	1769	111	1313	1900	1610
Grp Volume(v), veh/h	43	630	400	6	0	556	301	0	102	206	308	131
Grp Sat Flow(s),veh/h/ln	866	1885	1610	556	0	1832	1795	0	1880	1313	1900	1610
Q Serve(g_s), s	3.3	22.4	10.3	0.7	0.0	19.5	9.3	0.0	2.5	11.5	12.0	5.6
Cycle Q Clear(g_c), s	22.8	22.4	10.3	23.1	0.0	19.5	9.3	0.0	2.5	11.5	12.0	5.6
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.06	1.00		1.00
Vane Grp Cap(c), veh/h	269	845	991	184	0	821	474	0	852	399	448	360
L/C Ratio(X)	0.16	0.75	0.40	0.03	0.00	0.68	0.63	0.00	0.12	0.52	0.69	0.36
Avail Cap(c_a), veh/h	458	1258	1344	306	0	1223	684	0	1464	673	845	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	18.5	7.9	28.1	0.0	17.8	17.6	0.0	12.8	28.0	28.2	26.5
Incr Delay (d2), s/veh	0.5	2.3	0.5	0.1	0.0	1.7	2.0	0.0	0.1	1.5	2.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	9.3	2.9	0.1	0.0	7.5	3.7	0.0	1.0	3.7	5.6	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	20.8	8.4	28.2	0.0	19.4	19.7	0.0	12.9	29.5	30.8	27.4
LnGrp LOS	C	C	A	C	A	B	B	A	B	C	C	C
Approach Vol, veh/h		1073			562			403			645	
Approach Delay, s/veh		16.4			19.5			17.9			29.7	
Approach LOS		B			B			B			C	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		40.3	17.6	23.1		40.3		40.7				
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0				
Max Green Setting (Gmax), s		53.0	22.0	35.0		53.0		62.0				
Max Q Clear Time (g_c+l1), s		24.8	11.3	14.0		25.1		4.5				
Green Ext Time (p_c), s		10.4	1.3	4.1		4.8		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				20.5								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary
116-232; Starlite

6: Johnson Road/Connector Rd & NY Route 9R
Connector Rd; Build 2026 Phase 4 Imp SBR PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	612	390	6	454	95	296	99	6	206	307	143
Future Volume (veh/h)	53	612	390	6	454	95	296	99	6	206	307	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1900	1900	1885	1885	1885	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	55	631	402	6	468	98	305	102	6	212	316	147
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	1	0	0	1	1	1	0	0	0	0	0
Cap, veh/h	264	857	1000	184	687	144	464	802	47	395	452	364
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.44	0.17	0.45	0.44	0.24	0.24	0.23
Sat Flow, veh/h	858	1885	1610	555	1512	317	1795	1777	105	1306	1900	1610
Grp Volume(v), veh/h	55	631	402	6	0	566	305	0	108	212	316	147
Grp Sat Flow(s),veh/h/ln	858	1885	1610	555	0	1828	1795	0	1881	1306	1900	1610
Q Serve(g_s), s	4.6	23.3	10.7	0.8	0.0	20.8	10.0	0.0	2.8	12.6	12.9	6.6
Cycle Q Clear(g_c), s	25.5	23.3	10.7	24.1	0.0	20.8	10.0	0.0	2.8	12.6	12.9	6.6
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	264	857	1000	184	0	831	464	0	849	395	452	364
V/C Ratio(X)	0.21	0.74	0.40	0.03	0.00	0.68	0.66	0.00	0.13	0.54	0.70	0.40
Avail Cap(c_a), veh/h	419	1197	1290	285	0	1161	650	0	1393	637	804	662
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	19.0	8.1	28.9	0.0	18.4	18.7	0.0	13.6	29.5	29.6	28.0
Incr Delay (d2), s/veh	0.7	2.3	0.4	0.1	0.0	1.7	2.3	0.0	0.1	1.6	2.8	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	9.8	3.1	0.1	0.0	8.1	4.0	0.0	1.1	4.0	6.1	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	21.4	8.6	29.0	0.0	20.1	21.0	0.0	13.7	31.1	32.4	29.1
LnGrp LOS	C	C	A	C	A	C	C	A	B	C	C	C
Approach Vol, veh/h		1088			572			413			675	
Approach Delay, s/veh		17.0			20.2			19.1			31.3	
Approach LOS		B			C			B			C	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		42.7	18.2	24.2		42.7		42.4				
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0		5.0				
Max Green Setting (Gmax), s		53.0	22.0	35.0		53.0		62.0				
Max Q Clear Time (g_c+1), s		27.5	12.0	14.9		26.1		4.8				
Green Ext Time (p_c), s		10.2	1.2	4.3		4.8		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			21.5									
HCM 6th LOS			C									

Intersection

Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘		↗		↘	↗
Traffic Vol, veh/h	19	8	152	5	1	416
Future Vol, veh/h	19	8	152	5	1	416
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	9	165	5	1	452

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	622	168	0	0	170
Stage 1	168	-	-	-	-
Stage 2	454	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	450	876	-	-	1407
Stage 1	862	-	-	-	-
Stage 2	640	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	450	876	-	-	1407
Mov Cap-2 Maneuver	450	-	-	-	-
Stage 1	861	-	-	-	-
Stage 2	640	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	526	1407
HCM Lane V/C Ratio	-	-	0.056	0.001
HCM Control Delay (s)	-	-	12.2	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection

Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	19	8	216	5	1	607
Future Vol, veh/h	19	8	216	5	1	607
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	9	235	5	1	660

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	900	238	0	0	240
Stage 1	238	-	-	-	-
Stage 2	662	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	309	801	-	-	1327
Stage 1	802	-	-	-	-
Stage 2	513	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	309	801	-	-	1327
Mov Cap-2 Maneuver	309	-	-	-	-
Stage 1	801	-	-	-	-
Stage 2	513	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	378	1327
HCM Lane V/C Ratio	-	-	0.078	0.001
HCM Control Delay (s)	-	-	15.3	7.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection

Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	19	8	242	5	1	637
Future Vol, veh/h	19	8	242	5	1	637
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	9	263	5	1	692

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	960	266	0	0	268
Stage 1	266	-	-	-	-
Stage 2	694	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	285	773	-	-	1296
Stage 1	779	-	-	-	-
Stage 2	496	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	285	773	-	-	1296
Mov Cap-2 Maneuver	285	-	-	-	-
Stage 1	778	-	-	-	-
Stage 2	496	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	351	1296
HCM Lane V/C Ratio	-	-	0.084	0.001
HCM Control Delay (s)	-	-	16.2	7.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection

Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↗		↘	↗
Traffic Vol, veh/h	151	86	153	7	2	266
Future Vol, veh/h	151	86	153	7	2	266
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	150	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	93	166	8	2	289

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	463	170	0	0	174
Stage 1	170	-	-	-	-
Stage 2	293	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	557	874	-	-	1403
Stage 1	860	-	-	-	-
Stage 2	757	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	556	874	-	-	1403
Mov Cap-2 Maneuver	617	-	-	-	-
Stage 1	859	-	-	-	-
Stage 2	757	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	617	874	1403	-
HCM Lane V/C Ratio	-	-	0.266	0.107	0.002	-
HCM Control Delay (s)	-	-	12.9	9.6	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.4	0	-

Intersection

Int Delay, s/veh	6.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↗		↘	↗
Traffic Vol, veh/h	242	138	213	11	3	366
Future Vol, veh/h	242	138	213	11	3	366
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	150	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	150	232	12	3	398

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	642	238	0	0	244
Stage 1	238	-	-	-	-
Stage 2	404	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	438	801	-	-	1322
Stage 1	802	-	-	-	-
Stage 2	674	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	437	801	-	-	1322
Mov Cap-2 Maneuver	529	-	-	-	-
Stage 1	800	-	-	-	-
Stage 2	674	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	529	801	1322
HCM Lane V/C Ratio	-	-	0.497	0.187	0.002
HCM Control Delay (s)	-	-	18.3	10.5	7.7
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	2.7	0.7	0

Intersection

Int Delay, s/veh 7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔		↔	↔	
Traffic Vol, veh/h	10	0	25	238	0	135	20	221	9	2	375	5
Future Vol, veh/h	10	0	25	238	0	135	20	221	9	2	375	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	150	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	27	259	0	147	22	240	10	2	408	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	778	709	411	717	706	245	413	0	0	250	0	0
Stage 1	415	415	-	289	289	-	-	-	-	-	-	-
Stage 2	363	294	-	428	417	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	314	359	641	345	361	794	1146	-	-	1316	-	-
Stage 1	615	592	-	719	673	-	-	-	-	-	-	-
Stage 2	656	670	-	605	591	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	252	350	641	324	352	794	1146	-	-	1316	-	-
Mov Cap-2 Maneuver	369	442	-	427	437	-	-	-	-	-	-	-
Stage 1	601	591	-	703	658	-	-	-	-	-	-	-
Stage 2	523	655	-	578	590	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	20.2	0.7	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1146	-	-	529	427	794	1316	-	-
HCM Lane V/C Ratio	0.019	-	-	0.072	0.606	0.185	0.002	-	-
HCM Control Delay (s)	8.2	-	-	12.3	25.6	10.6	7.7	-	-
HCM Lane LOS	A	-	-	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	3.9	0.7	0	-	-

Attachment E
Turning Movement Count

Project No.: 116-232
 Counted By: AC & MDV
 Location: Colonie, NY
 Comments:

File Name : TM116232PM
 Site Code : 16-232-1
 Start Date : 1/30/2018
 Page No : 1

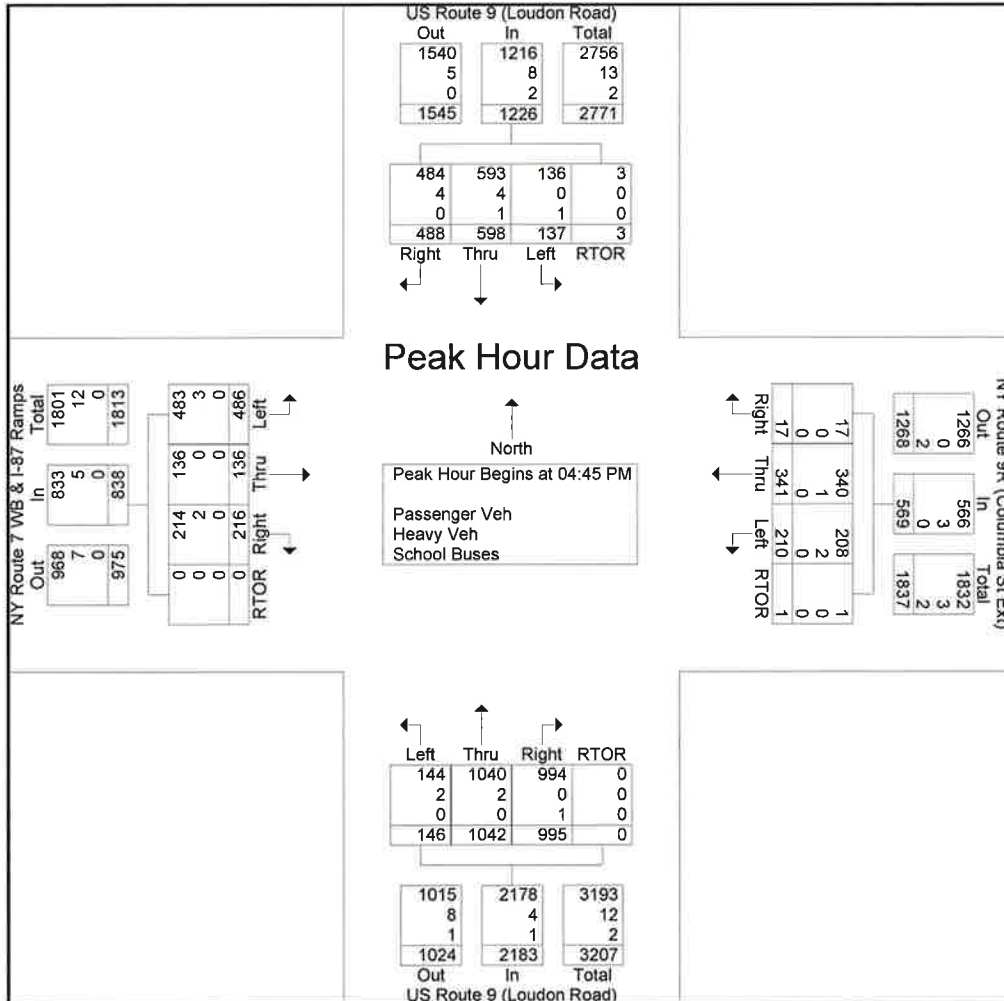
Groups Printed- Passenger Veh - Heavy Veh - School Buses

Start Time	NY Route 7 WB & I-87 Ramps Eastbound					NY Route 9R (Columbia St Ext) Westbound					US Route 9 (Loudon Road) Northbound					US Route 9 (Loudon Road) Southbound					Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	
04:30 PM	105	29	60	1	195	60	86	4	0	150	32	219	192	0	443	26	122	75	1	224	1012
04:45 PM	116	34	73	0	223	64	60	5	0	129	31	276	282	0	589	32	140	80	3	255	1196
Total	221	63	133	1	418	124	146	9	0	279	63	495	474	0	1032	58	262	155	4	479	2208
05:00 PM	94	35	44	0	173	48	100	3	1	152	30	220	226	0	476	46	184	174	0	404	1205
05:15 PM	161	41	48	0	250	48	76	2	0	126	56	285	243	0	584	33	143	124	0	300	1260
05:30 PM	115	26	51	0	192	50	105	7	0	162	29	261	244	0	534	26	131	110	0	267	1155
05:45 PM	87	25	47	0	159	40	74	7	0	121	30	238	236	0	504	29	127	94	0	250	1034
Total	457	127	190	0	774	186	355	19	1	561	145	1004	949	0	2098	134	585	502	0	1221	4654
Grand Total	678	190	323	1	1192	310	501	28	1	840	208	1499	1423	0	3130	192	847	657	4	1700	6862
Apprch %	56.9	15.9	27.1	0.1		36.9	59.6	3.3	0.1		6.6	47.9	45.5	0		11.3	49.8	38.6	0.2		
Total %	9.9	2.8	4.7	0	17.4	4.5	7.3	0.4	0	12.2	3	21.8	20.7	0	45.6	2.8	12.3	9.6	0.1	24.8	
Passenger Veh	673	190	321	1	1185	308	499	28	1	836	206	1496	1421	0	3123	190	838	653	4	1685	6829
% Passenger Veh	99.3	100	99.4	100	99.4	99.4	99.6	100	100	99.5	99	99.8	99.9	0	99.8	99	98.9	99.4	100	99.1	99.5
Heavy Veh	5	0	2	0	7	2	2	0	0	4	2	2	1	0	5	1	7	4	0	12	28
% Heavy Veh	0.7	0	0.6	0	0.6	0.6	0.4	0	0	0.5	1	0.1	0.1	0	0.2	0.5	0.8	0.6	0	0.7	0.4
School Buses	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	2	0	0	3	5
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0.1	0.5	0.2	0	0	0.2	0.1

Project No.: 116-232
 Counted By: AC & MDV
 Location: Colonie, NY
 Comments:

File Name : TM116232PM
 Site Code : 16-232-1
 Start Date : 1/30/2018
 Page No : 2

Start Time	NY Route 7 WB & I-87 Ramps Eastbound					NY Route 9R (Columbia St Ext) Westbound					US Route 9 (Loudon Road) Northbound					US Route 9 (Loudon Road) Southbound					Int. Total
	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	
Peak Hour Analysis From 4:30:00 PM to 5:45:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 4:45:00 PM																					
4:45:00 PM	116	34	73	0	223	64	60	5	0	129	31	276	282	0	589	32	140	80	3	255	1196
5:00:00 PM	94	35	44	0	173	48	100	3	1	152	30	220	226	0	476	46	184	174	0	404	1205
5:15:00 PM	161	41	48	0	250	48	76	2	0	126	56	285	243	0	584	33	143	124	0	300	1260
5:30:00 PM	115	26	51	0	192	50	105	7	0	162	29	261	244	0	534	26	131	110	0	267	1155
Total Volume	486	136	216	0	838	210	341	17	1	569	146	1042	995	0	2183	137	598	488	3	1226	4816
% App. Total	58	16.2	25.8	0		36.9	59.9	3	0.2		6.7	47.7	45.6	0		11.2	48.8	39.8	0.2		
PHF	.755	.829	.740	.000	.838	.820	.812	.607	.250	.878	.652	.914	.882	.000	.927	.745	.813	.701	.250	.759	.956
Passenger Veh	483	136	214	0	833	208	340	17	1	566	144	1040	994	0	2178	136	593	484	3	1216	4793
% Passenger Veh	99.4	100	99.1	0	99.4	99.0	99.7	100	100	99.5	98.6	99.8	99.9	0	99.8	99.3	99.2	99.2	100	99.2	99.5
Heavy Veh	3	0	2	0	5	2	1	0	0	3	2	2	0	0	4	0	4	4	0	0	8
% Heavy Veh	0.6	0	0.9	0	0.6	1.0	0.3	0	0	0.5	1.4	0.2	0	0	0.2	0	0.7	0.8	0	0.7	0.4
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	3
% School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.0	0.7	0.2	0	0	0.2	0.1



Attachment F
Site Plan

