Bowman

July 18, 2022

VIA EMAIL

Ms. Sonia Santiago, Planning Board Secretary
Township of Morris
50 Woodland Avenue
Morristown, New Jersey 07961-7603

RE: Traffic Response #1
New York Red Bulls Training Complex
101 Columbia Road
Block 9101, Lots 4 & 5
Township of Morris
BCG File No. 081271-01-001

Dear Ms. Santiago:

We are in receipt of the technical review letter from Bright View Engineering, the Township's traffic consultant dated June 13, 2022. We have prepared this response to address the comments in this review letter related to the Traffic Impact Study. Our responses to the various comments are as follows:

Traffic Impact Study

6) Traffic counts for the project were conducted in February, 2022. This office has reviewed the traffic counts and finds them to be generally acceptable.
No Response necessary.

7) Additional justification for the employee distribution approaching the site eastbound on Columbia Road is required. This office has concerns that 8% underestimates vehicle traffic from that direction since this is the most direct route from points south on I-287 into and out of the site.
The distribution of employees was based upon zip code data for the New York Red Bulls (RBNY) provided by the applicant. The large majority of the employees would be approaching from I-80, I-287 (to the north) and Route 24/I-78. We concur that traffic oriented to and from the south on I-287 would approach from the west on Columbia Road, and that traffic has been assigned to that approach using the zip code data.

8) We recommend improvement options be explored at the intersection of Columbia Road & the West Service Drive to accommodate a westbound left turn lane into the site. While

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not required based strictly on Level of Service, this office has concerns that reopening the driveway without a dedicated left turn lane could result in an increase in crashes at the intersection.

The improvements to this intersection as part of the original GDP development program only included the replacement of the traffic signal and no geometric improvements, for a development with significantly more traffic. A constraint at this intersection is the limited right of way width to the west of the project site. This site driveway is within approximately 100 feet of the westerly boundary line which would be insufficient for an appropriate pavement taper.

9) We have noted a number of minor numerical discrepancies between the volume figures and Synchro reports, mostly 10 vehicles or less. While we do not believe these minor discrepancies alter the conclusions in the TIS, we recommend the applicant's traffic engineer review any discrepancies and confirm his conclusions in testimony. For instance, the applicant's traffic engineer should confirm via testimony that the 2022 existing evening peak hour westbound through movement of 1,737 is a typographical error as it is inconsistent with the remainder of the volumes on Madison Avenue.

   We have reviewed the minor discrepancies and they do not materially impact any of the capacity analyses nor our conclusions. The 2022 existing PM peak hour westbound through movement at Old Glen Road should have been 737, this has been corrected on Figure 2A.

10) The LOS summary table indicates that the southbound left turn at Columbia Turnpike & Normandy Parkway during PM build condition operates at a delay of 8,938 seconds. The applicant's traffic engineer should confirm if this is a typographical error and identify the correct delay for the board.

    Table 3A, Build Conditions, was revised with the correct value. The 8,938 seconds was revised to 86.8 seconds.

11) The overall levels of service at the intersection of Columbia Turnpike & Normandy Parkway indicate a slight reduction in overall delay with the addition of the site traffic. Testimony should be provided explaining how an increase in volume can result in a decrease in overall intersection delay.

    Please note that the levels of service did not change from the no-build to build condition. Similarly, the delays for the NB and SB approaches did not change from the no-build to build conditions. There was a slight change in delay (less than 1 second) from the no-build to build conditions as a result of the HCM calculation for averaging among lane groups. This condition is acknowledged in the HCM Manual in the following statement:

> ***"Intersection Delay: Volume-weighted averaging among lane groups for approach delay, and among approaches for intersection delay, can generate misleading delay and level-of-service results. For example, two approaches with***

LOS A and two approaches with LOS F could produce an intersection LOS of C – but that would not be representative of the operation. Also, adding traffic (like for a traffic impact analysis) to approaches with the least delay (previously undeveloped) could result in a reduction in the intersection delay – also quite misleading". [HCM Equations 19-28 and 19-29]

Since the levels of service do not change from no-build to build conditions and the difference in delay is less than 1 second, it is our professional opinion that the intersection is not expected to experience significant impacts as a result of the proposed development. We note that the volume change was on the main line through movement only.

12) This office is in general agreement with the timing changes proposed to mitigate both existing delays and the traffic from the proposed development.
No Response necessary.

We trust that these responses to these comments are thorough and complete. We look forward to presenting our Traffic Assessment Study to the Morris Township Planning Board and the public at our upcoming public meeting. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
BOWMAN CONSULTING GROUP, LTD.

Eric L. Keller, P.E., P.P., LEED AP
Vice President
ekeller@bowman.com

Attachment

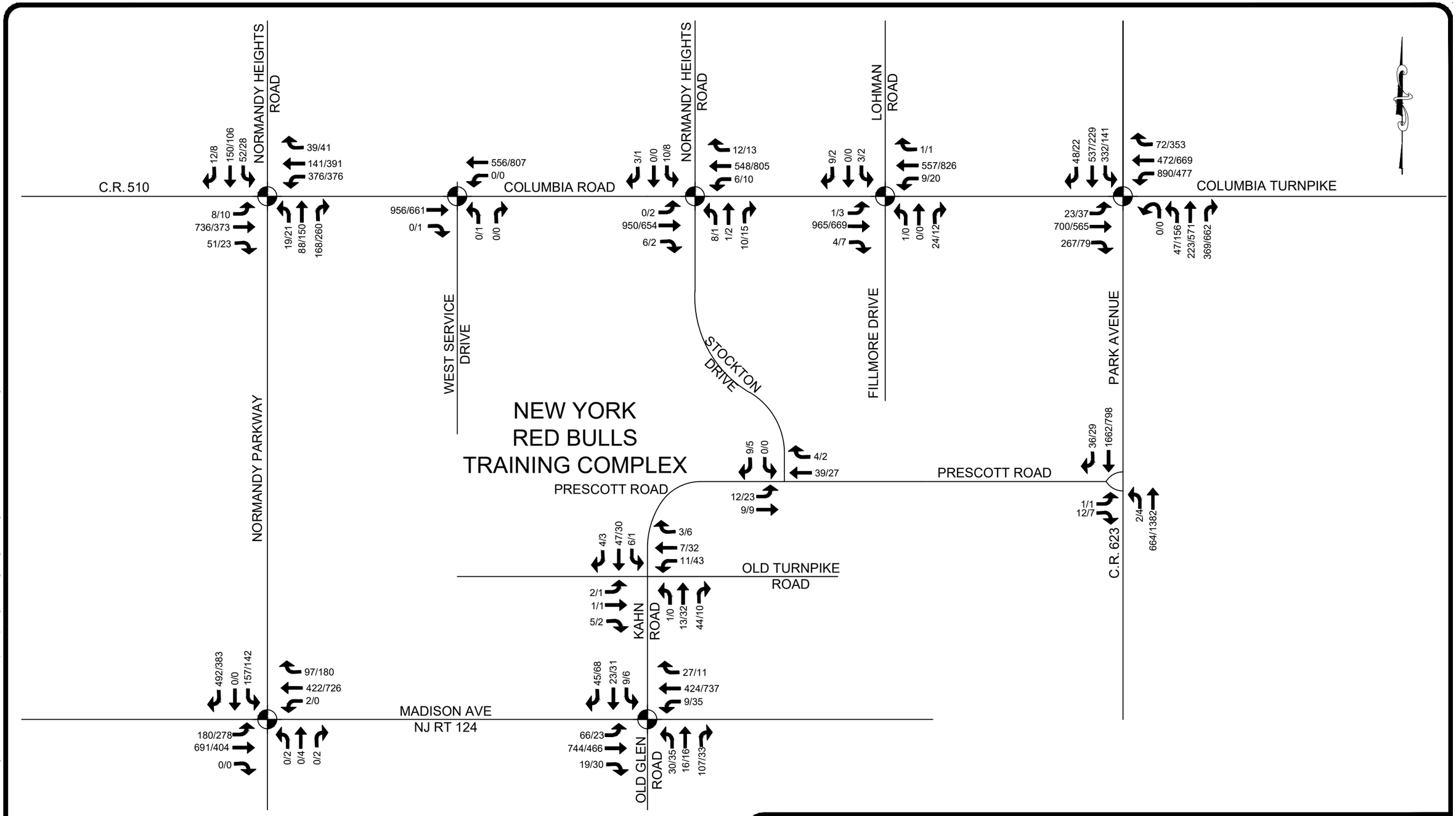
cc: John Amorosa, Cape Island Construction Management
Kari Cohen, New York Red Bulls
Nicholas Racioppi, Esq., Riker Danzig
Linda Herlihy, Esq., Riker Danzig
Richard Barrington, P.E., WSP
Carlos Garcia, P.E., Bowman

RBNY EMPLOYEE ZIP CODE/DISTRIBUTION

CITY	STATE	ZIPCODE	Approach Route	I287/Rt 24	I78/Rt 24	I287/Columbia	Kahn	Columbia/ S. Orange	Park Ave
Old Tappan	NJ	07675			1				
Wayne	NJ	07470			1				
Rockaway	NJ	07866			1				
Belmar	NJ	07719				1			
Berkeley Heights	NJ	07922						1	
Fort Lee	NJ	07024			1				
Hazlet	NJ	07730				1			
West Orange	NJ	07052			1				
Hoboken	NJ	07030				1			
West Orange	NJ	07052			1				
Hoboken	NJ	07030				1			
Berkeley Heights	NJ	07922						1	
Hoboken	NJ	07030				1			
West Orange	NJ	07052			1				
Roseland	NJ	07068			1				
Mt. Arlington	NJ	07856			1				
Jersey City	NJ	07306				1			
Sparta	NJ	07871			1				
Jersey City	NJ	07302				1			
Hackettstown	NJ	07840			1				
Boonton Twp	NJ	07005			1				
Succasunna	NJ	07876			1				
Rockaway	NJ	07866			1				
Jersey City	NJ	07302				1			
Wayne	NJ	07470			1				
Tenafly	NJ	07670			1				
Lincoln Park	NJ	07035			1				
East Hanover	NJ	07936							1
Budd Lake	NJ	07828			1				
Scotch Plains	NJ	07076				1			
Springfield	NJ	07081				1			
Whippany	NJ	07981							1
Brooklyn	NY	11249				1			
Morristown	NJ	07960					1		
Union	NJ	07083				1			
Asbury Park	NJ	07712				1			
New York	NY	10034				1			
Millington	NJ	07946					1		
Jersey City	NJ	07302				1			
Elizabeth	NJ	07201				1			
Montville	NJ	07045			1				
Montville	NJ	07045			1				
Roselle	NJ	07203				1			
Hazlet	NJ	07730				1			
South Orange	NJ	07079							1
Bayonne	NJ	07002				1			
Hillsborough	NJ	08844					1		
Sparta	NJ	07871			1				
Belleville	NJ	07109				1			
Northport	NY	11768				1			
Nutley	NJ	07110				1			
Brewster	NY	10509			1				
Saddle River	NJ	07458			1				
Cedar Knolls	NJ	07927							1
Raritan	NJ	08869					1		
Paterson	NJ	07501			1				
Nutley	NJ	07110				1			
Woodbridge	NJ	07095				1			
Oradell	NJ	07649			1				
Jersey City	NJ	07302				1			
Summit	NJ	07901				1			
Rockaway	NJ	07866			1				
Stewartsville	NJ	08886					1		
Garwood	NJ	07027				1			
Weehawken	NJ	07086				1			
Bloomfield	NJ	07003				1			

New Brunswick	NJ	08901		1					
Brooklyn	NY	11211		1					
Old Bridge	NJ	08857		1					
Parsuppany	NJ	07054	1						
Atlanta	GA	30315							
Paterson	NJ	07502	1						
Lansdale	PA	19446	1						
Wayne	NJ	07470	1						
Kearny	NJ	07032		1					
Bernardsville	NJ	07924			1				
Jersey City	NJ	07302		1					
Morristown	NJ	07960			1				
Union	NJ	07083		1					
Brooklyn	NY	11231		1					
New Brunswick	NJ	08901		1					
North Brunswick	NJ	08902	1						
Easton	PA	18045			1				
New York	NY	10075		1					
Robbinsville	NJ	08691		1					
Haledon	NJ	07508	1						
Morristown	NJ	07960			1				
Morristown	NJ	07960			1				
Morristown	NJ	07960				1			
Morristown	NJ	07960				1			
Lincoln Park	NJ	07035	1						
Brooklyn	NY	11211		1					
Jersey City	NJ	07302		1					
Morristown	NJ	07960			1				
Morris Plains	NJ	07950							1
Delran	NJ	08075		1					
Hopewell Junction	NY	12533	1						
New York	NY	10028		1					
Morristown	NJ	07960				1			
Stanhope	NJ	07874	1						
Morris Plains	NJ	07950							1
East Northport	NY	11731		1					
Weehawken	NJ	07786		1					
Lumberton	NJ	08048		1					
Oak Ridge	NJ	07438	1						
Matawan	NJ	07747		1					
Morristown	NJ	07960			1				
Bloomfield	NJ	07003		1					
New Brunswick	NJ	08901		1					
Garnerville	NY	10923	1						
Staten Island	NY	10304		1					
New York	NY	10128		1					
Belleville	NJ	07109		1					
Morris Plains	NJ	07950							1
Oakland	NJ	07436	1						
Sewell	NJ	08080		1					
East Hanover	NJ	07936					1		
Escondido	CA	92025							
Jersey City	NJ	07302		1					
Easton	CT	06612			1				
Plainsboro	NJ	08536		1					
Pompton Plains	NJ	07444	1						
Jersey City	NJ	07302		1					
Ridgefield	NJ	07657		1					
Madison	NJ	07940				1			
Elmwood Park	NJ	07407	1						
Toms River	NJ	08755		1					
Jersey City	NJ	07304		1					
Lincoln Park	NJ	07035	1						
Holmdel	NJ	07733		1					
Randolph	NJ	07869	1						
Berkeley Heights	NJ	07922				1			
Florham Park	NJ	07932					1		
Whippany	NJ	07981							1
Wharton	NJ	07885	1						
East Hanover	NJ	07936					1		

Jersey City	NJ	07302		1						
Parsippany	NJ	07054	1							
Elizabeth	NJ	07208		1						
Jersey City	NJ	07306		1						
Little Silver	NJ	07739		1						
Seattle	WA	98146								
Danbury	CT	06810	1							
Chaska	MN	55318								
Scotch Plains	NJ	07076		1						
Whippany	NJ	07981							1	
Orange	CA	92867								
East Hanover	NJ	07936						1		
Morris Plains	NJ	07950							1	
Toms River	NJ	08757		1						
Bayonne	NJ	07002		1						
Spring Lake Hts	NJ	07762		1						
New Providence	NJ	07974					1			
Union	NJ	07083		1						
Lake Hopatcong	NJ	07849	1							
Basking Ridge	NJ	07920				1				
Belleville	NJ	07109		1						
Staten Island	NY	10302		1						
Jersey City	NJ	07302		1						
Nutley	NJ	07110		1						
Lincoln Park	NJ	07035	1							
Livingston	NJ	07039						1		
Jersey City	NJ	07305		1						
Denville	NJ	07834	1							
Jersey City	NJ	07307		1						
Wallington	NJ	07057	1							
Berkeley Heights	NJ	07922					1			
Kearny	NJ	07032		1						
Jersey City	NJ	07307		1						
West Caldwell	NJ	07006	1							
Morganville	NJ	07751		1						
Belleville	NJ	07109		1						
Astoria	NY	11105		1						
Middletown	NJ	07748		1						
North Haledon	NJ	07508	1							
Wayne	NJ	07470	1							
Belleville	NJ	07109		1						
Fairfield	NJ	07004	1							
Upper Saddle River	NJ	07458	1							
South Orange	NJ	07079						1		
Freehold	NJ	07728		1						
Newark	NJ	07105		1						
TOTAL			54	84	14	9	8	8	177	
PERCENTAGE			30.5%	47.5%	7.9%	5.1%	4.5%	4.5%		



KEY

← 00/00 - AM PEAK/PM PEAK HOUR VOLUMES

⌖ -TRAFFIC SIGNAL

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DATE: 05/31/22
REV: 07/15/22
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CHKD.:

FIGURE 2A
NEW YORK RED BULLS TRAINING COMPLEX
EXISTING 2022 TRAFFIC VOLUMES-AM/PM

TOWNSHIP OF MORRIS, MORRIS COUNTY, NEW JERSEY

RED BULLS TRAINING COMPLEX 5/31/2022
Block 9101, Lots 4 & 5 Township of Morris
TABLE 3A 2025 NO-BUILD & BUILD LEVEL OF SERVICE SUMMARY -
WEEKDAY AM & PM PEAK HOURS

INTERSECTION			AM Peak		AM Peak		PM Peak		PM Peak	
			No-Build Conditions		Build Conditions		No-Build Conditions		Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Columbia Turnpike and Park Avenue (2025 Conditions)	EB	L	65.9	E	66.0	E	68.6	E	71.2	E
		T	65.5	E	81.6	F	35.8	D	36.9	D
		R	43.9	D	45.9	D	20.8	C	19.5	B
		Approach	59.6	E	71.7	E	35.8	D	36.9	D
	WB	L	79.6	F	74.0	F	55.2	E	57.0	E
		T	17.4	B	18.2	B	22.0	C	21.8	C
		R								
		Approach	58.3	E	52.8	D	36.7	D	36.5	D
	NB	L	66.1	E	66.1	E	65.1	E	69.6	E
		T	46.0	D	46.0	D	45.8	D	50.7	D
		R	21.6	C	20.9	C	27.4	C	29.5	C
		Approach	33.6	C	33.2	C	39.3	D	42.8	D
	SB	L	100.8	F	100.8	F	57.5	E	57.5	E
		TR	51.8	E	51.7	D	42.8	D	45.2	D
		Approach	69.6	C	69.8	E	47.9	D	49.4	D
	OVERALL		**56.6**	**E**	**57.6**	**E**	**38.8**	**D**	**40.1**	**D**

INTERSECTION			AM Peak		AM Peak		PM Peak		PM Peak	
			No-Build Conditions		Build Conditions		No-Build Conditions		Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Columbia Turnpike and Fillmore Dr./Lohman Rd. (2025 Conditions)	NB	R	12.9	B	13.0	B	10.9	B	11.7	B
	EB	L	8.7	A	9.1	A	9.9	A	10.4	B
	WB	L	10.7	B	10.8	B	9.3	A	10.0	B
	SB	LTR	16.2	C	18.2	C	26.0	D	33.9	D

INTERSECTION			AM Peak		AM Peak		PM Peak		PM Peak	
			No-Build Conditions		Build Conditions		No-Build Conditions		Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Columbia Turnpike and Stockton Drive/Normandy Heights Rd. (2025 Conditions)	EB	L	0.0	A	0.0	A	71.4	E	71.4	E
		T	0.8	A	0.9	A	0.5	A	0.7	A
		R	0.7	A	0.9	A	0.4	A	0.7	A
		Approach	0.7	A	0.9	A	0.7	A	0.9	A
	WB	L	57.0	E	56.3	E	54.3	D	55.1	E
		T	2.3	A	2.3	A	4.3	A	5.9	A
		R	2.3	A	2.3	A	4.3	A	5.9	A
		Approach	2.9	A	9.0	A	4.9	A	10.8	B
	NB	L	43.6	D	43.7	D	43.4	D	39.6	D
		T	0.0	A	0.0	A	0.0	A	0.0	A
		R	43.9	D	45.0	D	44.2	D	51.3	D
		Approach	43.8	D	44.6	D	44.1	D	50.7	D
	SB	L	43.8	D	43.8	D	43.7	D	39.8	D
		T	0.0	A	0.0	A	0.0	A	0.0	A
		R	0.0	A	0.0	A	0.0	A	0.0	A
		Approach	43.8	D	43.8	D	43.7	D	39.8	D
	OVERALL		**2.4**	**A**	**5.3**	**A**	**3.7**	**A**	**10.3**	**B**

INTERSECTION			AM Peak No-Build Conditions		AM Peak Build Conditions		PM Peak No-Build Conditions		PM Peak Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Columbia Turnpike and West Service Dr. (2025 Conditions)	EB	T	0.5	A	0.5	A	0.3	A	0.3	A
		R	0.0	A	0.0	A	0.0	A	0.0	A
		Approach	0.5	A	0.5		0.3	A	0.3	A
	WB	L	0.0	A	0.6	A	0.0	A	0.8	A
		T	0.2	A	0.6	A	0.4	A	1.0	A
		Approach	0.2	A	0.6		0.4	A	0.9	A
	NB	L	0.0	A	0.0	A	32.1	C	34.2	C
		R	32.1	C	32.2	C	0.0	A	0.0	A
		Approach	32.1	A	32.2	C	32.1	A	34.2	A
	OVERALL		**0.4**	**A**	**0.6**	**A**	**0.4**	**A**	**1.7**	**A**

INTERSECTION			AM Peak No-Build Conditions		AM Peak Build Conditions		PM Peak No-Build Conditions		PM Peak Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Columbia Turnpike and Normandy Parkway/Normandy Heights Rd. (2025 Conditions)	EB	L	11.2	B	11.2	B	10.7	B	10.9	B
		TR	16.8	B	16.9	B	13.6	B	14.1	B
		Approach	16.7	B	16.8	B	13.6	B	14.0	B
	WB	L	14.3	B	14.7	B	7.5	A	7.2	A
		TR	0.2	A	0.2	A	0.8	A	0.9	A
		Approach	10.4	B	10.6	B	4.1	A	3.9	A
	NB	L	45.1	D	45.1	D	113.9	F	113.9	F
		T	0.0	A	0.0	A	0.0	F	0.0	F
		R	44.1	D	44.1	D	90.8	F	90.8	F
		Approach	44.5	D	44.5	D	100.0	F	100.0	F
	SB	L	614.9	F	614.9	F	86.8	F	86.8	F
		T	0.0	F	0.0	F	0.0	A	0.0	A
		R	34.0	C	34.0	C	33.8	C	33.8	C
		Approach	583.7	F	583.7	F	84.1	F	84.1	F
	OVERALL		**88.2**	**F**	**87.8**	**F**	**36.6**	**D**	**36.0**	**D**

INTERSECTION			AM Peak No-Build Conditions		AM Peak Build Conditions		PM Peak No-Build Conditions		PM Peak Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Madison Avenue and Normandy Parkway (2025 Conditions)	EB	L	46.2	D	46.2	D	89.2	F	89.2	F
		T	28.0	C	28.2	C	13.2	B	13.3	B
		R	0.0	A	0.0	A	0.0	A	0.0	A
		Approach	31.5	C	31.7	C	42.2	D	42.1	D
	WB	L	46.0	D	46.0	D	0.0	A	0.0	A
		T	28.1	C	28.1	C	48.9	D	49.7	D
		R								
		Approach	28.1	C	28.1	C	48.9	D	49.7	D
	NB	L	0.0	A	0.0	A	33.9	C	33.9	C
		T	0.0	A	0.0	A	0.0	A	0.0	A
		R	0.0	A	0.0	A	0.0	A	0.0	A
		Approach	0.0	A	0.0	A	33.9	C	33.9	C
	SB	L	36.7	D	36.7	D	42.7	D	42.7	D
		T	0.0	A	0.0	A	0.0	A	0.0	A
		R								
		Approach	36.7	D	36.7	D	42.7	D	42.7	D
	OVERALL		**31.1**	**C**	**31.2**	**C**	**45.4**	**D**	**45.7**	**D**

INTERSECTION			AM Peak No-Build Conditions		AM Peak Build Conditions		PM Peak No-Build Conditions		PM Peak Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Madison Avenue and Old Glen Rd./Kahn Rd. (2025 Conditions)	EB	L	5.9	A	6.1	A	10.2	B	10.6	B
		T	0.0	A	0.0	A	0.0	A	0.0	A
		R	7.6	A	7.8	A	4.6	A	4.6	A
		Approach	7.5	A	7.7	A	4.8	A	4.9	A
	WB	L	10.7	B	11.0	B	5.9	A	6.0	A
		T	0.0	A	0.0	A	0.0	A	0.0	A
		R	4.4	A	4.5	A	7.1	A	7.2	A
		Approach	4.5	A	4.6	A	7.0	A	7.2	A
	NB	L	40.1	D	38.8	D	42.5	D	42.5	D
		T	0.0	A	0.0	A	0.0	A	0.0	A
		R	44.0	D	43.7	D	37.5	D	37.3	D
		Approach	43.2	D	42.9	D	39.6	D	39.5	D
	SB	L	42.8	D	42.8	D	38.2	D	38.2	D
		T	0.0	A	0.0	A	0.0	A	0.0	A
		R	38.2	D	37.7	D	40.5	D	40.4	D
		Approach	38.8	D	38.5	D	40.4	D	40.2	D
	OVERALL		**11.4**	**B**	**11.6**	**B**	**10.0**	**B**	**10.0**	**B**

INTERSECTION			AM Peak No-Build Conditions		AM Peak Build Conditions		PM Peak No-Build Conditions		PM Peak Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Old Turnpike and Kahn Rd/ Prescott Rd. (2025 Conditions)	NE		7.4	A	7.3	A	0.0	A	0.0	A
	NW		9.5	A	9.6	A	9.8	A	9.9	A
	SE		9.0	A	9.0	A	9.0	A	9.1	A
	SW		7.3	A	7.3	A	7.3	A	7.3	A

INTERSECTION			AM Peak No-Build Conditions		AM Peak Build Conditions		PM Peak No-Build Conditions		PM Peak Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Stockon Dr. and Prescott Rd. (2025 Conditions)	EB		7.3	A	7.4	A	7.3	A	7.3	A
	SE		8.6	A	8.9	A	8.5	A	8.6	A

INTERSECTION			AM Peak No-Build Conditions		AM Peak Build Conditions		PM Peak No-Build Conditions		PM Peak Build Conditions	
	Approach	Movement	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS	DELAY (S)	LOS
Park Avenue and Prescott Rd. (2025 Conditions)	NB		16.5	C	16.8	C	10.1	B	10.1	B
	EB		19.4	C	19.7	C	12.0	B	12.0	B
	WB		11.5	B	11.5	B	17.2	C	17.2	C
	SB		9.3	A	9.3	A	14.6	B	14.6	B