




Engineers  
Planners  
Surveyors  
Landscape Architects  
Environmental Scientists

11 Bradhurst Avenue  
Hawthorne, NY 10532  
T: 914.347.7500  
F: 914.347.7266  
www.maserconsulting.com

## MEMORANDUM

**To:** David Shepler

**Copy:** Barry Medenbach, P.E.

**From:** Philip J. Grealy, Ph.D., P.E. 

**Date:** March 28, 2017

**Re:** Zero Place  
Route 32 Traffic Data  
New Paltz, Ulster County, New York  
MC Project No. 15002584A

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As a result of comments at the July 2016 and August 2, 2016 Planning Board discussions, there was a comment raised that our study did not account for seasonality of traffic data. Therefore, on August 9, 2016, we conducted an additional traffic, bicyclist and pedestrian count at the intersection of Mulberry Street and Route 32, between the hours of 3:30pm and 6:30pm.

The attached Table T-1, is a summary of the bicyclist and pedestrian observations as well as a comparison of the approach volumes for those time periods. As can be seen from this table, the December traffic volume counts for the total intersection were slightly higher than the August counts, however, there was increased pedestrian and bicycle activity noted at the August count and additional traffic on the Mulberry Street including the east leg of the intersection, probably as a result of the pool generated traffic.

Based on the volumes and the level of pedestrian/bicycle activity, this would still be classified as low bicycle and pedestrian activity which is accounted for in the capacity analysis. Therefore, while Summer Season has increased bicycle and pedestrian activity, the total volumes on Route 32 and through the intersection were found to be lower than the December counts and account for the peak traffic conditions. The attached capacity analysis for the Existing, No-Build and Build conditions with the August data for this location indicates similar levels of service to the original study.

# TABLE T-1

## TRAFFIC COUNT COMPARISONS (WEEKDAY PM CONDITIONS)

JOB # 15002584A  
 LOCATION: NEW PALTZ, NY  
 DAY: TUESDAY  
 DATE: 12/15/2015 & 8/9/16  
 TIME: PM PEAK HOURS













TIME	Tuesday, December 15, 2015			Tuesday, August 09, 2016		
	BICYCLIST	PEDESTRAINS	TOTAL	BICYCLIST	PEDESTRAINS	TOTAL
3:30 PM 4:30 PM	0	9	9	0	16	16
4:30 PM 5:30 PM	1	9	10	7	5	12
5:30 PM 6:30 PM	0	6	6	7	13	20

Tuesday, December 15, 2015 PM PEAK HOUR VOLUMES	
MULBERRY STREET APPROACHES	N. CHESTNUT STREET (NYS ROUTE 32)
27	1009
TOTAL	
1036	

Tuesday, August 09, 2016 PM PEAK HOUR VOLUMES	
MULBERRY STREET APPROACHES	N. CHESTNUT STREET (NYS ROUTE 32)
80	926
TOTAL	
1006	

2016 Existing Traffic Volumes  
2: NYS Route 32 & Mulberry Street

Peak PM Hour  
8/10/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	14	1	26	10	5	24	17	448	23	14	415	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit		0.915			0.918			0.994			0.997	
Fit Protected		0.983			0.987			0.998			0.998	
Satd. Flow (prot)	0	1519	0	0	1602	0	0	1830	0	0	1772	0
Fit Permitted		0.983			0.987			0.998			0.998	
Satd. Flow (perm)	0	1519	0	0	1602	0	0	1830	0	0	1772	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		298			509			296			274	
Travel Time (s)		6.8			11.6			6.7			6.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	50%	17%	2%	2%	11%	8%	4%	2%	20%	5%	40%
Adj. Flow (vph)	15	1	27	11	5	25	18	472	24	15	437	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	41	0	0	514	0	0	461	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2016 Existing Traffic Volumes  
2: NYS Route 32 & Mulberry Street

Peak PM Hour  
8/10/2016

Intersection												
Int Delay, s/veh	1.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	1	26	10	5	24	17	448	23	14	415	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-2	-	-	1	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	50	17	2	2	11	8	4	2	20	5	40
Mvmt Flow	15	1	27	11	5	25	18	472	24	15	437	9













Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1006	1003	442	1004	995	484	446	0	0	496	0	0
Stage 1	471	471	-	519	519	-	-	-	-	-	-	-
Stage 2	535	532	-	485	476	-	-	-	-	-	-	-
Critical Hdwy	7.12	7	6.37	7.12	6.52	6.31	4.18	-	-	4.3	-	-
Critical Hdwy Stg 1	6.12	6	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.45	3.453	3.518	4.018	3.399	2.272	-	-	2.38	-	-
Pot Cap-1 Maneuver	220	201	585	220	245	565	1083	-	-	981	-	-
Stage 1	573	487	-	540	533	-	-	-	-	-	-	-
Stage 2	529	455	-	563	557	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	200	192	585	202	235	565	1083	-	-	981	-	-
Mov Cap-2 Maneuver	200	192	-	202	235	-	-	-	-	-	-	-
Stage 1	560	477	-	528	521	-	-	-	-	-	-	-
Stage 2	489	445	-	525	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17	16.9	0.3	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1083	-	-	343	344	981	-	-
HCM Lane V/C Ratio	0.017	-	-	0.126	0.119	0.015	-	-
HCM Control Delay (s)	8.4	0	-	17	16.9	8.7	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.4	0	-	-

2021 No-Build Traffic Volumes  
2: NYS Route 32 & Mulberry Street

Peak PM Hour  
8/10/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	15	1	27	11	5	25	18	483	24	15	447	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.916			0.918			0.994			0.998	
Flt Protected		0.983			0.986			0.998			0.998	
Satd. Flow (prot)	0	1522	0	0	1601	0	0	1830	0	0	1774	0
Flt Permitted		0.983			0.986			0.998			0.998	
Satd. Flow (perm)	0	1522	0	0	1601	0	0	1830	0	0	1774	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		298			509			296			274	
Travel Time (s)		6.8			11.6			6.7			6.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	50%	17%	2%	2%	11%	8%	4%	2%	20%	5%	40%
Adj. Flow (vph)	16	1	28	12	5	26	19	508	25	16	471	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	43	0	0	552	0	0	496	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2021 No-Build Traffic Volumes  
2: NYS Route 32 & Mulberry Street

Peak PM Hour  
8/10/2016

Intersection												
Int Delay, s/veh	1.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	1	27	11	5	25	18	483	24	15	447	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-2	-	-	1	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	50	17	2	2	11	8	4	2	20	5	40
Mvmt Flow	16	1	28	12	5	26	19	508	25	16	471	9













Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1082	1079	475	1081	1071	521	480	0	0	534	0	0
Stage 1	507	507	-	559	559	-	-	-	-	-	-	-
Stage 2	575	572	-	522	512	-	-	-	-	-	-	-
Critical Hdwy	7.12	7	6.37	7.12	6.52	6.31	4.18	-	-	4.3	-	-
Critical Hdwy Stg 1	6.12	6	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.45	3.453	3.518	4.018	3.399	2.272	-	-	2.38	-	-
Pot Cap-1 Maneuver	195	180	560	195	221	538	1052	-	-	949	-	-
Stage 1	548	468	-	513	511	-	-	-	-	-	-	-
Stage 2	503	435	-	538	536	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	175	171	560	177	210	538	1052	-	-	949	-	-
Mov Cap-2 Maneuver	175	171	-	177	210	-	-	-	-	-	-	-
Stage 1	534	457	-	500	498	-	-	-	-	-	-	-
Stage 2	461	424	-	498	524	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.7	18.5	0.3	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1052	-	-	308	310	949	-	-
HCM Lane V/C Ratio	0.018	-	-	0.147	0.139	0.017	-	-
HCM Control Delay (s)	8.5	0	-	18.7	18.5	8.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.5	0.1	-	-

2021 Build Traffic Volumes  
2: NYS Route 32 & Mulberry Street

Peak PM Hour  
8/10/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (vph)	15	1	27	11	5	25	18	550	24	15	504	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt		0.916			0.918			0.995			0.998	
Flt Protected		0.983			0.986			0.998			0.999	
Satd. Flow (prot)	0	1522	0	0	1601	0	0	1832	0	0	1778	0
Flt Permitted		0.983			0.986			0.998			0.999	
Satd. Flow (perm)	0	1522	0	0	1601	0	0	1832	0	0	1778	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		298			509			296			274	
Travel Time (s)		6.8			11.6			6.7			6.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	50%	17%	2%	2%	11%	8%	4%	2%	20%	5%	40%
Adj. Flow (vph)	16	1	28	12	5	26	19	579	25	16	531	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	43	0	0	623	0	0	556	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

2021 Build Traffic Volumes  
2: NYS Route 32 & Mulberry Street

Peak PM Hour  
8/10/2016

Intersection												
Int Delay, s/veh	1.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	1	27	11	5	25	18	550	24	15	504	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-2	-	-	1	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	50	17	2	2	11	8	4	2	20	5	40
Mvmt Flow	16	1	28	12	5	26	19	579	25	16	531	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1212	1209	535	1211	1201	592	540	0	0	604	0	0
Stage 1	567	567	-	629	629	-	-	-	-	-	-	-
Stage 2	645	642	-	582	572	-	-	-	-	-	-	-
Critical Hdwy	7.12	7	6.37	7.12	6.52	6.31	4.18	-	-	4.3	-	-
Critical Hdwy Stg 1	6.12	6	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	6	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.45	3.453	3.518	4.018	3.399	2.272	-	-	2.38	-	-
Pot Cap-1 Maneuver	159	149	517	159	185	490	999	-	-	892	-	-
Stage 1	508	437	-	470	475	-	-	-	-	-	-	-
Stage 2	461	402	-	499	504	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	141	141	517	143	175	490	999	-	-	892	-	-
Mov Cap-2 Maneuver	141	141	-	143	175	-	-	-	-	-	-	-
Stage 1	493	426	-	456	461	-	-	-	-	-	-	-
Stage 2	419	390	-	458	491	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.7	21.4	0.3	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	999	-	-	260	262	892	-	-
HCM Lane V/C Ratio	0.019	-	-	0.174	0.165	0.018	-	-
HCM Control Delay (s)	8.7	0	-	21.7	21.4	9.1	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.6	0.1	-	-