APPENDIX E

Traffic Analysis and Commentary

Dunn Engineering: February 11, 2011

Supplemental Traffic Analysis

Dunn Engineering Associates, P.C.
Consulting Engineers
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Westhampton Beach, N.Y. 11978
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February 21, 2011

Deputy Mayor Carl M. Juul-Nielsen &
Board of Trustees
Incorporated Village of Muttontown
One "Raz" Tafuro Way
Muttontown, NY 11791

Re: Comments on Draft FEIS
Proposed Jewish Congregation
of Brookville Synagogue
Muttontown, New York

Dear Mr. Juul-Nielsen and Trustees:

Dunn Engineering Associates, P.C. (DEA) has completed its review of the February 2011 Draft FEIS (DFEIS) prepared for the development of the above-referenced Synagogue on NYS Route 106. Specifically, DEA has been involved in the review of the traffic related portions of the review. As you are aware, DEA has been involved in the review of several versions of the DFEIS and has also performed its own independent Traffic Impact Study (TIS) of the proposed development of the Synagogue.

During the course of our efforts, we have offered numerous comments on the documents which were then given to the applicant's consultants for their consideration. Through the process we also met with the applicants consultants and had several other opportunities to exchange information on the topic. Many of the comments offered have resulted in changes to the document to provide more clarity and better illustrate the impacts of the development of the synagogue on the surrounding roadway system. However, at this point there are clear areas of disagreement regarding the performance of the impact analysis and the interpretation of the results.

It should be noted that the Traffic Impact Study performed by DEA, dated April 2009, reflects the analysis of conditions based on an operation of the synagogue that is different from the current evaluation. In the interim, the Village has required the analysis of the worse case potential operation of the synagogue, in following SEQRA. Therefore, the results of the analysis contained in the DEA TIS are no longer valid. The current review deals with higher levels of site activity and, as a result, site traffic volumes and impacts.

On November 4, 2010 members of the Village's project review team met with members of the applicants consultant team to discuss the remaining areas of contention in developing the FEIS. At that meeting, many of the problems relating to language in the main body of the DFEIS were resolved. This letter therefore deals mainly with the Traffic Study Supplement contained on Appendix E of the current DFEIS. The following sections present the results of our review of this section.

November 2009 Revised February 2011 Cameron Engineering & Associates, LLP Traffic Impact Study Supplement Memorandum

The applicant's traffic consultant has modified and corrected several of the technical errors in previous versions. The analysis results, presented in tabular form, clearly indicate areas and times where the development of the synagogue is shown to have a negative impact on traffic conditions in the periods studied.

The data and analysis presented in Appendix E indicates a traffic impact related to the development of the synagogue at the intersection of NYS RT 106 and Brookville Road during the weekday evening operation of the Hebrew School. Specifically during the weekday PM peak hour the overall intersection level of service (LOS) drops from LOS C to LOS D as a result of the introduction of site traffic. The eastbound approach on Brookville Road, operating at LOS F in the No-Build condition, has a significant increase in delay of 44 seconds per vehicle due to site traffic. There is clearly identifiable mitigation that would address and correct this degradation. However, the applicant's consultant contends that no mitigation is necessary and that there is actually no impact at all, contrary to the analysis presented.

While the analysis presented in Appendix E clearly indicates an impact, DEA has performed an additional set of analysis for this critical intersection utilizing a more accurate set of traffic volumes to better model traffic conditions, given the unique operating characteristics of the synagogue. These conditions are described below.

Additional Signalized Capacity Analysis

The operation of the synagogue differs from the operation of most land uses, from a traffic perspective. Each of the events at the synagogue has a distinct start and end time. Therefore, traffic patterns to and from the site are concentrated around these times, rather than spread out over time like they would be at a use such as a retail store. Specifically, the event that has been identified as most critical here is the operation of the Hebrew School. Traffic to and from the site during the operation of the school will be very concentrated around the start and end times of the various class periods with very little traffic occurring in between.

Signalized intersection capacity analysis is performed utilizing the procedures set forth in the Highway Capacity Manual, published by the Transportation Research Board. All software that

is used in the analysis of intersections, with some exceptions, utilizes and automates these procedures. One of the first steps in the analysis is the determination of the peak 15 minute volume. It is not the hourly volume that is utilized in the analysis but the peak *15 minute volume expanded to a peak 15 minute hourly flow rate.* This peak 15 minute hourly flow rate is then compared to a computed capacity and run through algorithms to compute delays. The peak 15 minute hourly flow rate can be developed one of two ways. A peak hour factor (PHF) can be developed and utilized. The PHF is a measure of the smoothness of the traffic flow over the course of an hour and is used in conjunction with the peak hour volume to back calculate the peak 15 minute volume and peak 15 minute hourly flow rate. In the second alternative, the peak 15 minute volume is utilized directly to arrive at the peak 15 minute hourly flow rate (simply multiply by 4) and no PHF is necessary.

What is important to understand about these procedures is that although the results are typically presented as "PM Peak Hour" or "Saturday Peak Hour" the procedures are actually only analyzing a 15 minute condition.

While the analysis presented in Appendix E contains a fairly good approximation of this 15 minute period, it is not as exact as it could be. While the PHF for the existing traffic conditions translate that component of the traffic correctly into the peak 15 minutes, the component of the traffic that is due to the synagogue has a different set of characteristics. The analysis in Appendix E used the PHF of the existing traffic for the combined condition. This underestimates the synagogue traffic during the critical peak 15 minutes. Discussions with the applicant's traffic consultant regarding this issue never led to an acknowledgement of this fact.

Given the disagreements with the applicant's traffic consultant over the meaning of the results of the analysis contained in Appendix E, DEA has performed another set of analysis to more accurately evaluate the proposal and remove any ambiguity in the results. Using the schedule of classes for the synagogue and other data contained in the FEIS we have developed peak 15 minute volumes and peak 15 minute hourly flow rates directly, eliminating the use of the PHF and establishing a more exact picture of critical 15 minute periods around the start and end of classes at the synagogue.

The additional analysis was performed only for the intersection of NYS RT 106 at Brookville Road and only for the weekday periods in the afternoon and evening when a Hebrew School session was starting or ending. Other locations and times were eliminated based on the results of analysis in Appendix E. Based on the schedule in the DFEIS, the time periods analyzed are the 15 minutes surrounding 4:00 PM and the 15 minutes surrounding 6:00 PM. The 15 minute background volumes were from the counts performed by the applicant's consultant for the original study and the same background growth rate was utilized to expand them to 2011 background traffic levels. This level of traffic represents the 2011 No Build Condition. Peak 15 minute site volumes corresponding to the 15 minutes around 4:00 PM and 6:00 PM were

developed using data in the DFEIS, including the assumptions related to car pooling and assigned to the intersection using the same distribution of traffic as the applicants consultant.

This analysis, as discussed above, uses the peak 15 minute volumes directly and eliminates any issues related to the peaking of the site traffic not being exactly modeled in the analysis in Appendix E.

The results of the analysis are summarized in Table A, presented on the next page.

15 Minutes Around	Movement	2011 No Build			2011 Build			2011 Build W/Timing Changes			2011 Build W/Road Widening		
		Delay	V/C	LOS	Delay	V/C	LOS	Delay	V.C	LOS	Delay	V/C	LOS
4:00 PM	EB Left	X	X	X	X	X	X	X	X	X	29.1	0.25	C
	EB Right	X	X	X	X	X	X	X	X	X	35.3	0.63	D
	EB Overall	40.8	0.76	D	63.5	0.94	E	42.3	0.82	D	33.4	00	C
	NB Left	7.9	0.48	A	11.4	0.59	B	14.7	0.64	B	11.4	0.59	B
	NB Thru	7.4	0.35	A	7.8	0.41	A	9.4	0.62	A	7.8	0.68	A
	NB Overall	7.5	--	A	8.4	--	A	10.3	--	B	8.4	--	A
	SB Overall	13.0	0.48	B	14.5	0.58	B	16.8	0.62	B	14.5	0.58	B
	Intersection	14.3	--	B	19.0	--	B	17.7	--	B	14.2	--	B
6:00 PM	EB Left	X	X	X	X	X	X						
	EB Right	X	X	X	X	X	X						
	EB Overall	30.6	0.47	C	34.6	0.64	C						
	NB Left	7.1	0.46	A	9.4	0.56	A						
	NB Thru	8.6	0.49	A	9.3	0.56	A						
	NB Overall	8.4	--	A	9.3	--	A						
	SB Overall	12.1	0.41	B	13.4	0.51	B						
	Intersection	11.4	--	B	13.2	--	B						

Table A
Brookville Road at NYS Rt. 106
Peak Period Analysis Results

As can be seen from Table A, the operation of the synagogue causes a degradation in level of service (LOS) on the Brookville Road approach to the intersection from LOS D to LOS E in the period around 4 PM (shown shaded). There is a corresponding increase in delay on this approach of 22 seconds per vehicle, or 55%. There is no slip in the level of service of the overall intersection as there was in Appendix E. In this revised analysis, it is noted that the volume of site traffic is *higher*, but the volume of background traffic is *lower* than that analyzed in Appendix E. This is due to the more exacting nature of the volumes used compared to Appendix E.

Details of this additional analysis in the form of Highway Capacity Software printouts are included as an attachment to this letter.

Methods to mitigate the impact on the Brookville Road approach were investigated. Two methods of restoring conditions on Brookville Road to No-Build levels have been identified. The results of the capacity analysis performed to evaluate each are presented in Table A.

The first, easiest and least costly is a reapportionment of the traffic signal timing to give the Brookville Road approach more green time. The results of this change are included in Table A under the column "2011 Build w/Timing Changes". Under this scenario a portion of the signal cycle (3 seconds) that is now used by the Route 106 thru movements is removed from that phase and added to the Brookville Road Phase, allowing for additional vehicles on Brookville Road to clear every cycle which reduces queues and delays. The LOS on that approach returns to No-Build conditions. Conditions on the Route 106 approaches receive less time and delays then go up, albeit only slightly.

It is noted that currently the Brookville Road approach receives 20 seconds of green time during the peak periods analyzed. This is already a significant portion of the 90 second cycle and the NYSDOT may resist proposals to increase the Brookville Road green beyond current levels at the expense of Route 106 thru traffic.

Given that NYSDOT may not allow the signal timing change above, an alternative mitigation was developed. This involves the widening of Brookville Road at its approach to Route 106 to provide a 2nd lane. The results of the evaluation of this mitigation are presented in Table A under the column entitled "2011 Build w/Road Widening". The results of this scenario indicate that with this improvement the LOS on Brookville Road is improved to levels even better than the No-Build condition.

The second mitigation scenario involves the expense of roadway widening and possible traffic signal reconstruction/modifications. It is recommended that the applicant first seek a signal timing change to achieve mitigation goals and only be required to widen Brookville Road should the timing change be denied.

Conclusions and Recommendations

The analysis contained in Appendix E of the current DFEIS presents a good approximation of the impacts on traffic of the operation of the proposed synagogue. Clearly, there is an impact on traffic conditions in the area. The applicant's consultant's analysis as well as the additional more accurate analysis provided here, shows a clear impact to the Brookville Road approach. This impact should be mitigated to return the operations to No Build Conditions.

Therefore it is recommended that the developers of the synagogue be required to improve the performance of the Brookville Road approach in one of the two ways described previous. First, the applicant should seek approval for a signal timing change to provide additional green time for Brookville Road. Should that be denied, the approach should be widened to provide two lanes. It is noted that all other work currently proposed in the public right-of–way is related to providing access to the site and is not mitigation. This would be the only mitigation proposed.

If there are any questions or you require any additional information, please do not hesitate to contact me.

Sincerely,

Patrick Lenihan, P.E.
Associate Engineer

PL:AY:lam
L2010233Rev
P28150

ATTACHMENT

2011 No-Build

SHORT REPORT

General Information		Site Information	
Analyst	AY	Intersection	NYS Route 106 at Brookville Rd
Agency or Co.	DEA	Area Type	All other areas
Date Performed	10/19/2010	Jurisdiction	Village of Muttontown, Nassau
Time Period	Peak15-Min Hourly Flows @ 4 PM	Analysis Year	2011 No-Build Condition

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0		0				1	2			2	0
Lane Group		LR					L	T			TR	
Volume (vph)	21		277				182	791			903	17
% Heavy Vehicles	2		2				2	5			5	2
PHF	1.00		1.00				1.00	1.00			1.00	1.00
Pretimed/Actuated (P/A)	A		A				A	P			P	P
Startup Lost Time		2.0					2.0	2.0			2.0	
Extension of Effective Green		3.0					3.0	3.0			3.0	
Arrival Type		3					3	3			3	
Unit Extension		3.0					3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0		0	0	0
Lane Width		13.0					12.0	12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0					0	0			0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = 20.0	G =	G =	G =	G = 5.0	G = 49.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 4	Y = 6	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB	
Adjusted Flow Rate		298					182	791			920
Lane Group Capacity		391					378	2258			1910
v/c Ratio		0.76					0.48	0.35			0.48
Green Ratio		0.23					0.68	0.66			0.56
Uniform Delay d_1		32.2					7.0	6.9			12.1
Delay Factor k		0.31					0.11	0.50			0.50
Incremental Delay d_2		8.6					1.0	0.4			0.9
PF Factor		1.000					1.000	1.000			1.000
Control Delay		40.8					7.9	7.4			13.0
Lane Group LOS		D					A	A			B
Approach Delay	40.8						7.5			13.0	
Approach LOS	D						A			B	
Intersection Delay	14.3			Intersection LOS						B	

SHORT REPORT

General Information		Site Information	
Analyst	AY	Intersection	NYS Route 106 at Brookville Rd
Agency or Co.	DEA	Area Type	All other areas
Date Performed	10/19/2010	Jurisdiction	Village of Muttontown, Nassau
Time Period	Peak15-Min Hourly Flows @ 6 PM	Analysis Year	2011 No-Build Condition

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0		0				1	2			2	0
Lane Group		LR					L	T			TR	
Volume (vph)	12		170				203	1106			758	17
% Heavy Vehicles	2		2				2	5			5	2
PHF	1.00		1.00				1.00	1.00			1.00	1.00
Pretimed/Actuated (P/A)	A		A				A	P			P	P
Startup Lost Time		2.0					2.0	2.0			2.0	
Extension of Effective Green		3.0					3.0	3.0			3.0	
Arrival Type		3					3	3			3	
Unit Extension		3.0					3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0		0	0	0
Lane Width		13.0					12.0	12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0					0	0			0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = 20.0	G =	G =	G =	G = 5.0	G = 49.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 4	Y = 6	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB
Adjusted Flow Rate		182					203	1106		775
Lane Group Capacity		391					439	2258		1909
v/c Ratio		0.47					0.46	0.49		0.41
Green Ratio		0.23					0.68	0.66		0.56
Uniform Delay d_1		29.7					6.4	7.9		11.5
Delay Factor k		0.11					0.11	0.50		0.50
Incremental Delay d_2		0.9					0.8	0.8		0.6
PF Factor		1.000					1.000	1.000		1.000
Control Delay		30.6					7.1	8.6		12.1
Lane Group LOS		C					A	A		B
Approach Delay		30.6						8.4		12.1
Approach LOS		C						A		B
Intersection Delay		11.4			Intersection LOS					B

2011 Build

SHORT REPORT

General Information		Site Information	
Analyst	AY	Intersection	NYS Route 106 at Brookville Rd
Agency or Co.	DEA	Area Type	All other areas
Date Performed	10/19/2010	Jurisdiction	Village of Muttontown, Nassau
Time Period	Peak15-Min Hourly Flows @ 4 PM	Analysis Year	2011 Build Condition

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0		0				1	2			2	0
Lane Group		LR					L	T			TR	
Volume (vph)	97		277				182	923			1035	73
% Heavy Vehicles	2		2				2	5			5	2
PHF	1.00		1.00				1.00	1.00			1.00	1.00
Pretimed/Actuated (P/A)	A		A				A	P			P	P
Startup Lost Time		2.0					2.0	2.0			2.0	
Extension of Effective Green		3.0					3.0	3.0			3.0	
Arrival Type		3					3	3			3	
Unit Extension		3.0					3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0		0	0	0
Lane Width		13.0					12.0	12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0					0	0			0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = 20.0	G =	G =	G =	G = 5.0	G = 49.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 4	Y = 6	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB	
Adjusted Flow Rate		374					182	923			1108
Lane Group Capacity		399					310	2258			1899
v/c Ratio		0.94					0.59	0.41			0.58
Green Ratio		0.23					0.68	0.66			0.56
Uniform Delay d_1		33.9					8.5	7.3			13.2
Delay Factor k		0.45					0.18	0.50			0.50
Incremental Delay d_2		29.7					2.9	0.6			1.3
PF Factor		1.000					1.000	1.000			1.000
Control Delay		63.5					11.4	7.8			14.5
Lane Group LOS		E					B	A			B
Approach Delay		63.5						8.4			14.5
Approach LOS		E						A			B
Intersection Delay		19.0			Intersection LOS						B

SHORT REPORT

General Information

Analyst	*AY*
Agency or Co.	*DEA*
Date Performed	*10/19/2010*
Time Period	*Peak15-Min Hourly Flows @ 6 PM*

Site Information

Intersection	*NYS Route 106 at Brookville Rd*
Area Type	*All other areas*
Jurisdiction	*Village of Muttontown, Nassau*
Analysis Year	*2011 Build Condition*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	*0*		*0*				*1*	*2*			*2*	*0*
Lane Group		*LR*					*L*	*T*			*TR*	
Volume (vph)	*88*		*170*				*203*	*1238*			*890*	*73*
% Heavy Vehicles	*2*		*2*				*2*	*5*			*5*	*2*
PHF	*1.00*		*1.00*				*1.00*	*1.00*			*1.00*	*1.00*
Pretimed/Actuated (P/A)	*A*		*A*				*A*	*P*			*P*	*P*
Startup Lost Time		*2.0*					*2.0*	*2.0*			*2.0*	
Extension of Effective Green		*3.0*					*3.0*	*3.0*			*3.0*	
Arrival Type		*3*					*3*	*3*			*3*	
Unit Extension		*3.0*					*3.0*	*3.0*			*3.0*	
Ped/Bike/RTOR Volume	*0*	*0*	*0*	*0*	*0*		*0*	*0*		*0*	*0*	*0*
Lane Width		*13.0*					*12.0*	*12.0*			*12.0*	
Parking/Grade/Parking	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*	*N*	*0*	*N*
Parking/Hour												
Bus Stops/Hour		*0*					*0*	*0*			*0*	
Minimum Pedestrian Time		*3.2*			*3.2*			*3.2*			*3.2*	

Phasing	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = *20.0*	G =	G =	G =	G = *5.0*	G = *49.0*	G =	G =
	Y = *6*	Y =	Y =	Y =	Y = *4*	Y = *6*	Y =	Y =

Duration of Analysis (hrs) = *0.25*

Cycle Length C = *90.0*

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB	
Adjusted Flow Rate		*258*					*203*	*1238*			*963*
Lane Group Capacity		*402*					*361*	*2258*			*1897*
v/c Ratio		*0.64*					*0.56*	*0.55*			*0.51*
Green Ratio		*0.23*					*0.68*	*0.66*			*0.56*
Uniform Delay d_1		*31.1*					*7.4*	*8.3*			*12.4*
Delay Factor k		*0.22*					*0.16*	*0.50*			*0.50*
Incremental Delay d_2		*3.5*					*2.0*	*1.0*			*1.0*
PF Factor		*1.000*					*1.000*	*1.000*			*1.000*
Control Delay		*34.6*					*9.4*	*9.3*			*13.4*
Lane Group LOS		*C*					*A*	*A*			*B*
Approach Delay		*34.6*						*9.3*			*13.4*
Approach LOS		*C*						*A*			*B*
Intersection Delay		*13.2*			Intersection LOS						*B*

2011 Build with Timing Changes

SHORT REPORT

General Information

Analyst	AY
Agency or Co.	DEA
Date Performed	10/19/2010
Time Period	Peak15-Min Hourly Flows @ 4 PM

Site Information

Intersection	NYS Route 106 at Brookville Rd
Area Type	All other areas
Jurisdiction	Village of Muttontown, Nassau
Analysis Year	2011 Build W Timing Mods

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0		0				1	2			2	0
Lane Group		LR					L	T			TR	
Volume (vph)	97		277				182	923			1035	73
% Heavy Vehicles	2		2				2	5			5	2
PHF	1.00		1.00				1.00	1.00			1.00	1.00
Pretimed/Actuated (P/A)	A		A				A	P			P	P
Startup Lost Time		2.0					2.0	2.0			2.0	
Extension of Effective Green		3.0					3.0	3.0			3.0	
Arrival Type		3					3	3			3	
Unit Extension		3.0					3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0		0	0	0
Lane Width		13.0					12.0	12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0					0	0			0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = 23.0	G =	G =	G =	G = 5.0	G = 46.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 4	Y = 6	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		374					182	923			1108	
Lane Group Capacity		456					286	2144			1785	
v/c Ratio		0.82					0.64	0.43			0.62	
Green Ratio		0.27					0.64	0.62			0.52	
Uniform Delay d_1		31.0					10.1	8.8			15.2	
Delay Factor k		0.36					0.22	0.50			0.50	
Incremental Delay d_2		11.4					4.6	0.6			1.6	
PF Factor		1.000					1.000	1.000			1.000	
Control Delay		42.3					14.7	9.4			16.8	
Lane Group LOS		D					B	A			B	
Approach Delay	42.3						10.3			16.8		
Approach LOS	D						B			B		
Intersection Delay	17.7			Intersection LOS						B		

2011 Build with Road Widening

SHORT REPORT

General Information		Site Information	
Analyst	AY	Intersection	NYS Route 106 at Brookville Rd
Agency or Co.	DEA	Area Type	All other areas
Date Performed	10/19/2010	Jurisdiction	Village of Muttontown, Nassau
Time Period	Peak15-Min Hourly Flows @ 4 PM	Analysis Year	2011 Build W Mods Condition

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1		1				1	2			2	0
Lane Group	L		R				L	T			TR	
Volume (vph)	97		277				182	923			1035	73
% Heavy Vehicles	2		2				2	5			5	2
PHF	1.00		1.00				1.00	1.00			1.00	1.00
Pretimed/Actuated (P/A)	A		A				A	P			P	P
Startup Lost Time	2.0		2.0				2.0	2.0			2.0	
Extension of Effective Green	2.0		2.0				3.0	3.0			3.0	
Arrival Type	3		3				3	3			3	
Unit Extension	3.0		3.0				3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	55	0	0		0	0		0	0	0
Lane Width	12.0		12.0				12.0	12.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour	0		0				0	0			0	
Minimum Pedestrian Time		3.2			3.2			3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = 20.0	G =	G =	G =	G = 5.0	G = 49.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 4	Y = 6	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	97		222				182	923			1108	
Lane Group Capacity	393		352				310	2258			1899	
v/c Ratio	0.25		0.63				0.59	0.41			0.58	
Green Ratio	0.22		0.22				0.68	0.66			0.56	
Uniform Delay d_1	28.8		31.7				8.5	7.3			13.2	
Delay Factor k	0.11		0.21				0.18	0.50			0.50	
Incremental Delay d_2	0.3		3.6				2.9	0.6			1.3	
PF Factor	1.000		1.000				1.000	1.000			1.000	
Control Delay	29.1		35.3				11.4	7.8			14.5	
Lane Group LOS	C		D				B	A			B	
Approach Delay	33.4						8.4			14.5		
Approach LOS	C						A			B		
Intersection Delay	14.2			Intersection LOS						B		

SUPPLEMENTAL TRAFFIC ANALYSIS

PREPARED FOR

VILLAGE OF MUTTONTOWN

FOR

JEWISH CONGREGATION OF BROOKVILLE
VILLAGE OF MUTTONTOWN
NASSAU COUNTY, NEW YORK

PREPARED AT THE DIRECTION OF
THE VILLAGE OF MUTTONTOWN BY

CAMERON ENGINEERING & ASSOCIATES, LLP

FEBRUARY 2011

TABLE OF CONTENTS

TABLE OF TABLES

1. Executive Summary

1. This is a Supplemental Traffic Analysis to the June 2008 Draft Environmental Impact Statement (DEIS) Traffic Impact Study prepared for the Jewish Congregation of Brookville.
2. The New York State Department of Transportation (NYSDOT) has jurisdiction over all intersections on NYS Route 106. The NYSDOT has issued a Bond Letter dated November 15, 2010 (see Appendix B) stating that the site plans are acceptable. The applicant has requested signal retiming from the NYSDOT.
3. This analysis also addresses post-DEIS changes to the proposed Site Plan, and expounds upon FEIS Comment 29 that relates to a traffic signal warrant study.

2. Background

2.1 Purpose of Supplemental Traffic Analysis

This Supplemental Traffic Analysis was prepared to provide and explain the various traffic engineering analyses performed since the DEIS Traffic Study was completed in 2008, when the DEIS was deemed complete by the Village of Muttontown. It evaluates the potential traffic impacts of the "maximum case" operation of the proposed synagogue.

It addresses the same intersections as the DEIS Traffic Study:

- Route 106 at Brookville Road
- Route 106 at Muttontown Road
- Route 106 at Titus Path
- Route 106 at Proposed Site Driveway

3. FEIS Traffic Analyses

3.1 "Maximum Case"

Table 3-1: Maximum Case Assumptions

Issue	Village (Maximum Case)
Hebrew School Enrollment	320: 160 in two consecutive sessions
Hebrew School trips	374 in the busiest hour; 187 in two 15-minute intervals
High Holiday Attendance (2 days a year)	1,053 (Use of Sanctuary and balcony and tent simultaneously)
High Holiday trips	Up to 185 trips in and out, consolidated into 30 minutes
High Holiday Trip Pattern	Item 1: 105 people arrive at the end of the service Item 2: 105 congregants arrive and 1,053 people leave in a single 30-minute period at the end of the service

3.2 "Maximum Case" Descriptions

3.2.1 PM Peak Hour "Maximum Case"

- Eight classrooms, completely full
- Two completely full Hebrew School sessions – 160 students per session x 2 equals 320 students – separated by 30 minutes, where the first session students leave at the beginning of the hour, and the second session students arrive at the end of the hour (see FEIS Response 16)
- 80 students per Hebrew School class (grade).
- All drop-off and pick-up trips occur within 15 minutes.

3.2.1.1 PM Peak Hour "Maximum Case" Trips

Trips consist of Hebrew School drop-off and pickup. Logistically, the earlier session students will clear out before the later session students arrive. During the peak hour – the 60-minute period that includes the pick up of the first session and the drop off of the second session – the teachers and support staff remain in the building, so there are no trips associatedwith teachers and staff.

Peak Hour trips – between 5:00 and 6:00 PM – were calculated as follows:

- Both sessions could have up to 160 students, plus teachers and support staff. The trips consist entirely of early session departures and later session arrivals. Since the "peak hour" consists of the end of the first session and the start of the second session, this yields

320 students that would arrive and leave during this "maximum case."

- The Applicant has projected that 75% of students carpool (25% with 3 students per vehicle, 50% with 2 students per vehicle) and 25% arrive alone (1 student per vehicle). This yields the following numbers of PM peak hour trips:
  - 80 students arrive/leave alone, in 80 vehicles
  - 160 students arrive/leave in groups of two, in 80 vehicles
  - 80 students arrive/leave in groups of three, in 27 vehicles
  - Total = 187 vehicles

Therefore, the PM peak hour "maximum case scenario" trips equal:

- Enter: 187 vehicles per hour
- Exit: 187 vehicles per hour
- Total: 374 vehicles per hour

3.2.2 Saturday Peak Hour "Maximum Case"

The Saturday Peak Hour maximum case scenario is unchanged from the peak hour analyzed in the DEIS Traffic Impact Study: it consists of trips associated with a fully attended Bar or Bat Mitzvah that can have up to 249 guests. There is no further analysis of a Saturday maximum case.

3.2.3 High Holiday Peak Hour "Maximum Case":

Although the High Holidays are not typical events (they only involve four calendar days each year), the Applicant has prepared separate traffic analyses of the High Holidays (see FEIS Response 7).

Based on Cameron Engineering observations of the Jewish Congregation of Brookville's 2006 High Holiday services at C.W. Post, two services have the peak attendance: the morning services on Rosh Hashanah and Yom Kippur.

The Maximum Case therefore accounts for 1,053 people based on maximum building occupancy (if the balcony is built and an outdoor tent is utilized: see FEIS Response 24) during these peak services.

- Use of both of these spaces at the same time is not anticipated. Perhaps the balcony or the outside tent could be used in conjunction with the Sanctuary and temporary seats, but not all three spaces at once.

As discussed in the DEIS Traffic Impact Study, these services begin around 8:00 a.m. and end around 12:00 or 1:00 pm. The entering and exiting traffic does not occur at the same time, or even during the same hour. During our observations, the highest entering volume (75%) was observed between 10:00 and 11:00 a.m., approximately a quarter or halfway into the 4-5 hour service. The peak exiting volume (100%) occurred after service ended, from 12:00 Noon on, and no one entered at the end of the service.

The Site Plan now includes 120 on-site parking spaces. During the High Holidays, these spaces will be prioritized so that handicapped congregants and those with special needs would be accommodated first (perhaps with assigned passes). Remaining tickets would be distributed at the discretion of the

synagogue.

Only 110 (not all 120) spaces will be used on the High Holidays. This means that 110 drivers would receive parking passes, and everyone else would park off-site at LIU and be shuttled to and from the synagogue in 25-passenger buses.

3.2.3.1 High Holiday Peak Hour "Maximum Case" Trips

The peak parking demand (and traffic volume) occurred on Rosh Hashanah, when the average occupancy in a random sampling was 2.27 persons per vehicle, so this occupancy was used to analyze trips.

As discussed above, High Holiday peak entering and exiting trips do not and will not occur at the same time:

- The highest entering volume (75%) was observed between 10:00 and 11:00 am
- The peak exiting volume (100%) occurred after service ended, from 12:00 pm on

1. The numbers of people parking on-site vs. off-site are:
   - 110 vehicles on-site x 2.27 people/vehicle = 250 people accommodated on-site
   - 1,053 people – 250 people on-site = 803 people off-site, to use shuttles
   - 803 people off-site / 2.27 people per vehicle = 354 off-site vehicles

2. Entering Period Trips are:
   - On-site: 110 vehicles x 75% = 83 trips in
   - Shuttles to off-site lot: 803 people x 75% / 25 people per shuttle = 24 shuttles in and out

3. Exiting Period Trips are:
   - On-site: 110 vehicles = 110 trips out
   - Shuttles to off-site lot: 803 people / 25 people per shuttle = 32 shuttles in and out
     Since this "maximum case" accounts for the building's maximum possible occupancy, there is no need to adjust the calculation for additional staff.

     With all shuttles making back-and-forth trips, the total trip numbers are not expected to exceed 131 trips (107 in, 24 out) during the morning and 174 trips (32 in, 142 out) during the early afternoon. The busier hour is the exiting hour with 174 trips.

     This calculation has been adjusted to account for a nominal number of entering trips during the peak existing hour.

     This yields the following result:

- On-site: 110 vehicles = 110 trips out
- 10% Entering component x 110 trips = 11 trips in
- Shuttles to off-site lot: 803 people / 25 people per shuttle = 32 shuttles in and out
  Total trip numbers are not expected to exceed 185 trips (43 in, 142 out) during the early afternoon.

3.2.3.2 High Holiday Peak Hour Background Conditions

Saturday peak hour traffic counts were used to project High Holiday traffic volumes. Traffic volumes traveling through the intersections studied in the DEIS Traffic Study are similar to, or smaller than, typical Saturday peak hour volumes, since all public schools are closed. Historic traffic data has often demonstrated that Saturday midday traffic characteristics are often similar to weekday midday conditions.

The NYSDOT has 24-hour traffic counts on the closest segment of Route 106 for which there is 7-day data, including Saturday and multiple weekdays (between Muttontown Road and Route 25A). The State data indicates that for the period between 11:00 am and 1:00 pm (the typical "midday peak period"), Saturday traffic volume was the highest midday volume out of the entire week, with up to 29-34% higher counts than weekdays.

Therefore, High Holiday analyses are based on the typical Saturday peak hour volumes that were analyzed in the DEIS traffic study.

The drivers using on-site parking would follow the same distribution as the typical PM and Saturday peak hour distributions from the DEIS Traffic Study. The remaining trips (i.e., shuttles between the synagogue and LIU) would be routed as follows: they would all leave the synagogue to head north on Route 106 and go up to Route 25A to turn left; the return trip would travel from Route 25A south on Route 106 and into the site driveway. This is based on the lowest travel time route. There would be no shuttle bus trips at the Route 106-Brookville Road intersection.

4. Maximum Case Analysis Results

4.1 Route 106 at Brookville Road

The overall analysis results indicate a drop in LOS during the weekday PM peak hour period from LOS C to LOS D and a corresponding increase in overall delay of over 10 seconds. Most individual movements will not have any change in Level of Service.

The largest change in delay is evident on the eastbound approach. Delay on this approach increases by 44 seconds per vehicle on average, with the introduction of synagogue traffic. The LOS on this approach is an F in the No Build condition and as that is the worst LOS category, a LOS F with the higher delays in the Build condition. The analysis of High Holiday conditions indicates no changes in LOS and only small increases in delay.

Table 4-1: Route 106 at Brookville Road Level of Service

PM Peak Hour

	2011 No Build Volumes			2011 Build Volumes		
Movement	**Delay**	**v/c Ratio**	**LOS**	**Delay**	**v/c Ratio**	**LOS**
Eastbound LR	81.9	1.01	F	126.0	1.15	F
Northbound Left	17.0	0.47	B	18.0	0.47	B
Through	8.8	0.56	A	9.2	0.60	A
Southbound LTR	29.8	0.86	C	40.1	0.96	D
INTERSECTION	*27.0*	*0.89*	*C*	*37.9*	*0.98*	*D*

High Holiday Peak Hour

Movement	**Delay**	**v/c Ratio**	**LOS**	**Delay**	**v/c Ratio**	**LOS**
Eastbound LR	30.9	0.49	C	31.0	0.50	C
Northbound Left	6.2	0.17	A	6.6	0.18	A
Through	7.5	0.43	A	7.5	0.43	A
Southbound LTR	22.4	0.65	C	22.4	0.65	C
INTERSECTION	*15.8*	*0.54*	*B*	*16.1*	*0.55*	*B*

4.2 Route 106 at Muttontown Road

The only LOS change is a technical increase from LOS A to B for the High Holiday peak hour southbound through-right movement, with a 0.2 second delay change. This is minimal and does not indicate a genuine impact on traffic. The only reason the LOS changes is because the No Build delay is within 0.2 seconds of the next LOS grade. The largest delay change to any movement will be less than 4 seconds, which is minimal and of no real significance. No mitigation is needed.

Table 4-2: Route 106 at Muttontown Road Level of Service

PM Peak Hour	2011 No Build Volumes			2011 Build Volumes		
Movement	**Delay**	**v/c Ratio**	**LOS**	**Delay**	**v/c Ratio**	**LOS**
Eastbound LTR	25.1	0.22	C	25.9	0.32	C
Westbound LTR	38.1	0.76	D	41.6	0.80	D
Northbound Left	7.4	0.10	A	10.0	0.27	A
Through	10.2	0.53	B	10.5	0.56	B
Right	7.7	0.22	A	7.8	0.23	A
Southbound Left	16.4	0.50	B	18.9	0.55	B
Through-Right	9.3	0.45	A	9.6	0.48	A
INTERSECTION	*13.0*	*0.59*	*B*	*13.8*	*0.63*	B

High Holiday Peak Hour						
Movement	**Delay**	**v/c Ratio**	**LOS**	**Delay**	**v/c Ratio**	**LOS**
Eastbound LTR	24.3	0.13	C	24.4	0.13	C
Westbound LTR	30.6	0.61	C	30.8	0.62	C
Northbound Left	7.2	0.08	A	8.8	0.19	A
Through	9.3	0.45	A	9.6	0.48	A
Right	7.0	0.11	A	7.0	0.12	A
Southbound Left	11.1	0.35	B	12.1	0.38	B
Through-Right	9.8	0.50	A	10.0	0.52	B
INTERSECTION	*11.6*	*0.53*	*B*	*11.8*	*0.55*	B

4.3 Route 106 at Titus Path

The PM peak hour analysis indicates LOS changes: the eastbound approach will change from LOS B to D and the northbound U-turn will increase from LOS B to D. Please note that the eastbound change affects 5 vehicles. The High Holiday analysis shows a change to the northbound U-turn from LOS C to D with a 9-second delay increase. For both peak hours, the highest U-turn delay is under 30 seconds, a common occurrence for minor movements on Route 106 and a reasonable condition for a peak hour period. Also for both peak hours, the 95th percentile queue length for the northbound U-turn is 4 vehicles. There is room for 7 vehicles, so there will be no spillover onto Route 106. There are adequate gaps in southbound Route 106 traffic to accommodate the U-turn movement.

It is of note that the U-turn PHF was reduced from the observed 0.89 and 0.95 (high numbers) to 0.50 to reflect a maximum case condition of all synagogue vehicles leaving the site within 30 minutes.

Also of note, the PM analysis accounts for all synagogue traffic arriving and leaving during the PM peak hour that runs from 5:00-6:00 pm, whereas much or all of the synagogue traffic will occur later in the day, when Route 106 volumes will be lower (per NYSDOT 24-hour traffic counts on Route 106), and therefore the genuinely anticipated condition will yield lower delays than what the analyses indicate.

The Build delays themselves are thus considered conservative and correspond to acceptable level

of service grades (LOS D). Synagogue traffic will not have an adverse effect on traffic conditions at this intersection, and mitigation is not needed.

Table 4-3: Route 106 at Titus Path Level of Service

Hourly Maximum Case Analysis

PM Peak Hour	2011 No Build Volumes			2011 Build Volumes		
Movement	**Delay**	**v/c Ratio**	**LOS**	**Delay**	**v/c Ratio**	**LOS**
Eastbound LR	13.8	0.03	B	29.0	0.27	D
Northbound Left	14.1	0.03	B	29.9	0.61	D
Southbound LT	11.4	0.00	B	12.0	0.00	B
High Holiday Peak Hour						
Eastbound LR	11.5	0.01	B	11.6	0.01	B
Northbound Left	16.6	0.03	C	25.8	0.43	D
Southbound LT	10.6	0.00	B	11.1	0.00	B

4.4 Route 106 at Site Driveway

Note: The analysis includes a 350-foot northbound right turn deceleration lane.

The analyses were done with all site traffic entering and leaving within two 15-minute periods, not spread out over the whole hour; this corresponds to a Peak Hour Factor of 0.50 for site movements.

The entering and exiting site volumes will operate at LOS C and LOS D. These are acceptable operations during peak hours. The driveway will operate well, and the highest LOS D delay (32.5 seconds) will be retained on-site.

Table 4-4: Route 106 at Site Driveway Level of Service

Hourly Maximum Case Analysis

	PM Build			High Holiday Build		
Movement	**Delay**	**v/c Ratio**	**LOS**	**Delay**	**v/c Ratio**	**LOS**
Southbound Left	17.0	0.36	C	25.0	0.29	D
Westbound Right	32.5	0.76	D	24.4	0.61	C

4.5 Summary of "Maximum Case" Assumptions

- Utilize 2% heavy vehicles on all intersection approaches at every intersection, except for northbound and southbound through traffic on Route 106, which should utilize 5% heavy vehicles.
- Utilize a 10 percent entering component for the High Holiday peak hour.
- Utilize a longer (6.8 seconds) U-turn gap for northbound Route 106 at Titus Path.
- Utilize a smaller (0.50) PHF for the Build northbound U-turn at Titus Path.
- Retain observed PHFs for the No Build and Build conditions, except at the Titus Path U-turn and at the site driveway's site-related movements which should utilize 0.5.

5. Post-DEIS Site Plan Changes

To make the site more maneuverable, the median in front of the building has been changed to a flush mountable curb.

In addition, the site plan was changed in November 2009 to add 30 additional overflow parking spaces, and a total of 120 parking spaces (see FEIS Section 2 and Figure 2-1). These additional spaces, denoted with painted curb stops, will provide a greater assurance of parking availability during peak periods (such as Bar or Bat Mitzvahs or other high-attendance events). While the synagogue can certainly offer the use of valet parking, since the applicant does not anticipate non-High Holiday events with more than 250 people, the applicant does not expect to require the use of valet parking, given the expanded parking area.

6. Full Response to FEIS Comment 29

Comment 29 in the FEIS reflects a question as to whether the proposed driveway will need to be signalized. It will not, because typical traffic volumes will not meet the criteria of a traffic signal warrant study. The NYSDOT requires analysis of typical traffic volumes – the intersection volumes and patterns in the DEIS Traffic Impact Study – to determine if any of nine "signal warrants" (features which could justify the installation of a traffic signal) apply. Since none of these warrants relate to the synagogue, the proposed driveway can not have a traffic signal.

1. Eight Hour Vehicular Volume: This warrant applies where traffic volumes will meet certain minimums for 8 hours on an average day. This site will not generate traffic 8 hours a day.
2. Four Hour Vehicular Volume: Like Warrant 1, except traffic volumes must be met 4 hours a day. The synagogue will not generate peak traffic for 4 hours a day, so this warrant can not be met.
3. Peak Hour Delay: This warrant would apply if the proposed driveway's traffic delay would be exceedingly high for at least one hour a day. The traffic analyses in the DEIS Traffic Study and the Dunn Engineering Traffic Study indicate excellent traffic flow quality at the driveway.
4. Pedestrian Volume: This warrant requires at least 100 – 190 pedestrians per hour for 1 to 4 hours per day. With zero observed and zero projected crossing pedestrians, this warrant can not be met.
5. School Crossing: This warrant applies only to established school crossings, not to this synagogue.
6. Coordinated Signal System: This warrant applies if a new traffic signal would group traffic vehicles on Route 106 and where existing signals are too far apart. A signal at the proposed driveway would not help group traffic, and based on the corresponding calculation, the proposed driveway is too close to other signals for a new signal here to meet this warrant: the driveway is less than 2,500 feet from the nearest traffic signal, and would have to be 4,159 feet away to meet this warrant.
7. Collision Experience: This warrant requires high rates of right angle or opposing left turn accidents. This condition is not met.
8. Roadway Network: This warrant applies to the intersection of two "major routes." The proposed driveway is not a major route, and thus, this warrant can not be met.
9. Railroad Crossing: This warrant applies with a nearby at-grade railroad crossing, which is not the case.

LEVEL OF SERVICE/CAPACITY WORKSHEETS

1. NYS Route 106 and Brookville Road
2. NYS Route 106 and Muttontown Road
3. NYS Route 106 and Titus Path
4. NYS Route 106 and Site Driveway

1. NYS Route 106 and Brookville Road

FULL REPORT

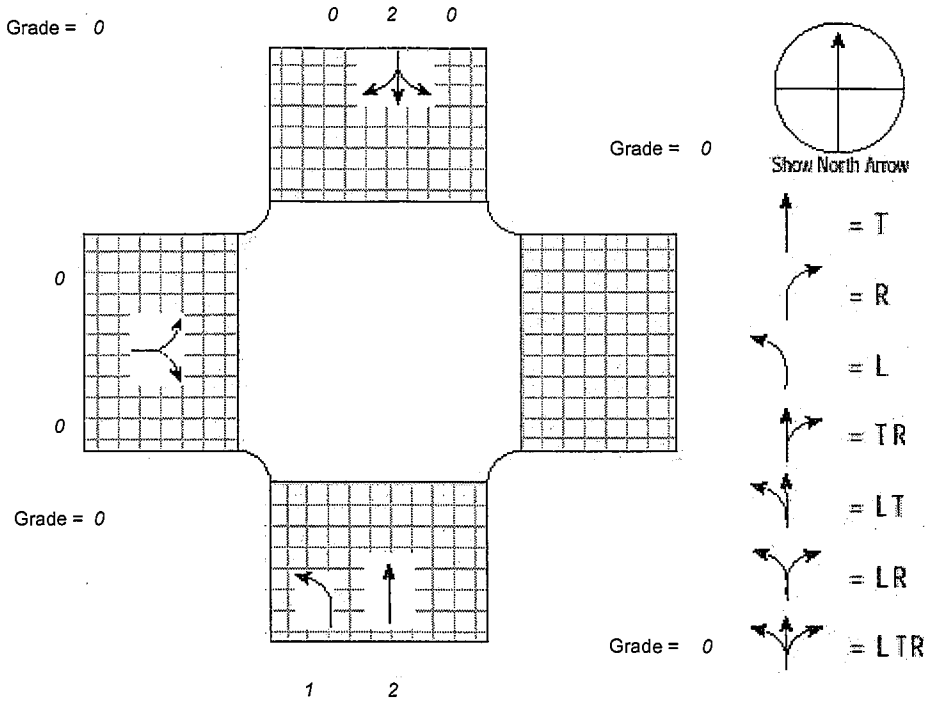
General Information

Analyst *RG*
Agency or Co. *Cameron Engineering*
Date Performed *9/14/10*
Time Period *PM NO BUILD*

Site Information

Intersection *NY 106 @ BROOKVILLE ROAD*
Area Type *All other areas*
Jurisdiction *CE 1064E*
Analysis Year *2011 NO BUILD*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	15		233				186	1011		0	862	11
% Heavy Veh	2		2				2	5		2	5	2
PHF	0.63		0.63				0.80	0.80		0.68	0.68	0.68
Actuated (P/A)	A		A				A	A		P	P	P
Startup Lost Time		2.0					2.0	2.0			2.0	
Extension of Effective Green		3.0					3.0	3.0			3.0	
Arrival Type		3					3	3			3	
Unit Extension		3.0					3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0	0	0		0	0		0	0	0
Lane Width		13.0					12.0	12.0			12.0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/Hour												
Bus Stops/Hour		0					0	0			0	
Pedestrian Timing	3.2			3.2			3.2			3.2		

	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = 20.0	G =	G =	G =	G = 20.0	G = 38.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 0	Y = 6	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 90.0

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	15		233				186	1011		0	862	11
PHF	0.63		0.63				0.80	0.80		0.68	0.68	0.68
Adjusted Flow Rate	24		370				232	1264		0	1268	16
Lane Group		LR					L	T			LTR	
Adjusted Flow Rate		394					232	1264			1284	
Proportion of LT or RT		--			--		1.000	--	0.000	0.000	--	0.012

Saturation Flow Rate

Base Satflow		1900					1900	1900			1900	
Number of Lanes	0		0				1	2		0	2	0
f_W		1.033					1.000	1.000			1.000	
f_{HV}		0.980					0.980	0.952			0.953	
f_g		1.000					1.000	1.000			1.000	
f_p		1.000					1.000	1.000			1.000	
f_{bb}		1.000					1.000	1.000			1.000	
f_a		1.000					1.000	1.000			1.000	
f_{LU}		1.000					1.000	0.952			0.952	
f_{LT}		0.997	--			--	0.950	1.000	--		1.000	--
Secondary f_{LT}			--			--	0.091	0.091	--			--
f_{RT}	--	0.873		--			--	1.000		--	0.998	
f_{Lpb}		1.000	--			--	1.000	1.000	--		1.000	--
f_{Rpb}	--	1.000		--			--	1.000		--	1.000	
Adjusted Satflow		1676					1770	3445			3440	
Secondary Adjusted Satflow			--			--	169	313	--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Capacity Analysis

	EB	WB	NB		SB
Lane Group	*LR*		*L*	*T*	*LTR*
Adjusted Flow Rate	*394*		*232*	*1264*	*1284*
Satflow Rate	*1676*		*1770*	*3445*	*3440*
Lost Time	*2.0*		*2.0*	*2.0*	*2.0*
Green Ratio	*0.23*		*0.72*	*0.66*	*0.43*
Lane Group Capacity	*391*		*496*	*2258*	*1491*
v/c Ratio	*1.01*		*0.47*	*0.56*	*0.86*
Flow Ratio	*0.24*		*0.13*	*0.37*	*0.37*
Critical Lane Group	*Y*		*Y*	*N*	*Y*
Sum Flow Ratios	*0.74*				
Lost Time/Cycle	*15.00*				
Critical v/c Ratio	*0.89*				

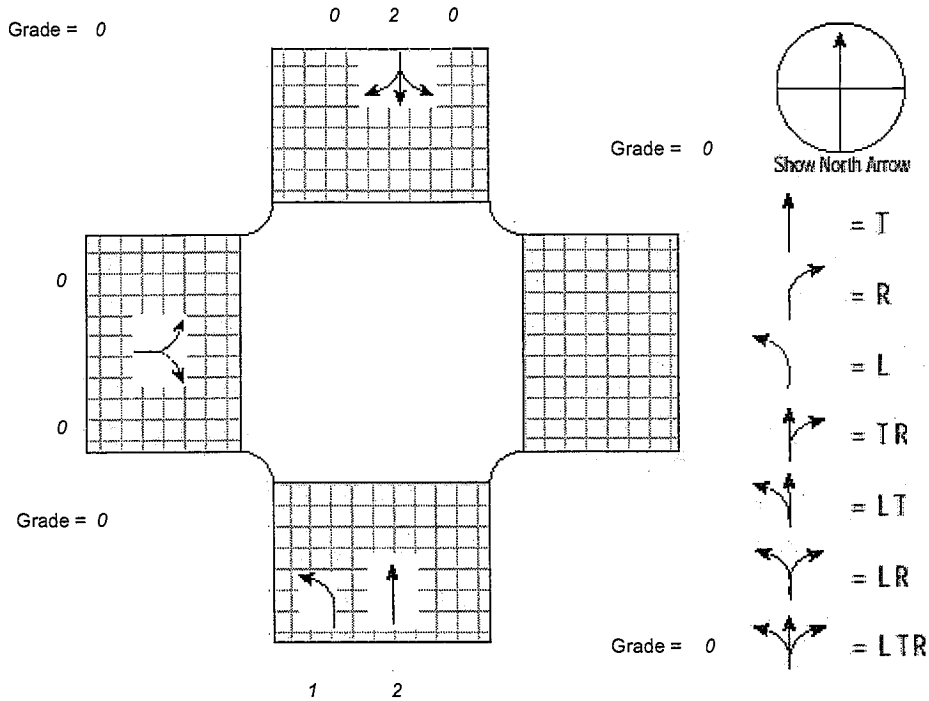
Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB		SB
Lane Group	*LR*		*L*	*T*	*LTR*
Adjusted Flow Rate	*394*		*232*	*1264*	*1284*
Lane Group Capacity	*391*		*496*	*2258*	*1491*
v/c Ratio	*1.01*		*0.47*	*0.56*	*0.86*
Green Ratio	*0.23*		*0.72*	*0.66*	*0.43*
Uniform Delay d_1	*34.5*		*16.3*	*8.4*	*23.1*
Delay Factor k	*0.50*		*0.11*	*0.16*	*0.50*
Incremental Delay d_2	*47.4*		*0.7*	*0.3*	*6.8*
PF Factor	*1.000*		*1.000*	*1.000*	*1.000*
Control Delay	*81.9*		*17.0*	*8.8*	*29.8*
Lane Group LOS	*F*		*B*	*A*	*C*
Approach Delay	*81.9*		*10.0*		*29.8*
Approach LOS	*F*		*B*		*C*
Intersection Delay	*27.0*	Intersection LOS			*C*

FULL REPORT

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ BROOKVILLE ROAD*
Agency or Co.	*Cameron Engineering*	Area Type	*All other areas*
Date Performed	*9/14/10*	Jurisdiction	*CE 1064E*
Time Period	*PM BUILD*	Analysis Year	*2011 BUILD*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*53*		*233*				*186*	*1077*		*0*	*928*	*40*
% Heavy Veh	*2*		*2*				*2*	*5*		*2*	*5*	*2*
PHF	*0.63*		*0.63*				*0.80*	*0.80*		*0.68*	*0.68*	*0.68*
Actuated (P/A)	*A*		*A*				*A*	*A*		*P*	*P*	*P*
Startup Lost Time		*2.0*					*2.0*	*2.0*			*2.0*	
Extension of Effective Green		*3.0*					*3.0*	*3.0*			*3.0*	
Arrival Type		*3*					*3*	*3*			*3*	
Unit Extension		*3.0*					*3.0*	*3.0*			*3.0*	
Ped/Bike/RTOR Volume	*0*	*0*	*0*	*0*	*0*		*0*	*0*		*0*	*0*	*0*
Lane Width		*13.0*					*12.0*	*12.0*			*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/Hour												
Bus Stops/Hour		*0*					*0*	*0*			*0*	
Pedestrian Timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = *20.0*	G =	G =	G =	G = *20.0*	G = *38.0*	G =	G =
	Y = *6*	Y =	Y =	Y =	Y = *0*	Y = *6*	Y =	Y =

Duration of Analysis (hrs) = *0.25* | Cycle Length C = *90.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	53		233				186	1077		0	928	40
PHF	0.63		0.63				0.80	0.80		0.68	0.68	0.68
Adjusted Flow Rate	84		370				232	1346		0	1365	59
Lane Group		LR					L	T			LTR	
Adjusted Flow Rate		454					232	1346			1424	
Proportion of LT or RT		--			--		1.000	--	0.000	0.000	--	0.041

Saturation Flow Rate

Base Satflow		1900					1900	1900			1900	
Number of Lanes	0		0				1	2		0	2	0
f_W		1.033					1.000	1.000			1.000	
f_{HV}		0.980					0.980	0.952			0.954	
f_g		1.000					1.000	1.000			1.000	
f_p		1.000					1.000	1.000			1.000	
f_{bb}		1.000					1.000	1.000			1.000	
f_a		1.000					1.000	1.000			1.000	
f_{LU}		1.000					1.000	0.952			0.952	
f_{LT}		0.991	--			--	0.950	1.000	--		1.000	--
Secondary f_{LT}			--			--	0.091	0.091	--			--
f_{RT}	--	0.890		--			--	1.000		--	0.994	
f_{Lpb}		1.000	--			--	1.000	1.000	--		1.000	--
f_{Rpb}	--	1.000		--			--	1.000		--	1.000	
Adjusted Satflow		1697					1770	3445			3428	
Secondary Adjusted Satflow			--			--	169	313	--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Capacity Analysis

	EB	WB	NB		SB
Lane Group	*LR*		*L*	*T*	*LTR*
Adjusted Flow Rate	*454*		*232*	*1346*	*1424*
Satflow Rate	*1697*		*1770*	*3445*	*3428*
Lost Time	*2.0*		*2.0*	*2.0*	*2.0*
Green Ratio	*0.23*		*0.72*	*0.66*	*0.43*
Lane Group Capacity	*396*		*496*	*2258*	*1485*
v/c Ratio	*1.15*		*0.47*	*0.60*	*0.96*
Flow Ratio	*0.27*		*0.13*	*0.39*	*0.42*
Critical Lane Group	*Y*		*Y*	*N*	*Y*
Sum Flow Ratios	*0.81*				
Lost Time/Cycle	*15.00*				
Critical v/c Ratio	*0.98*				

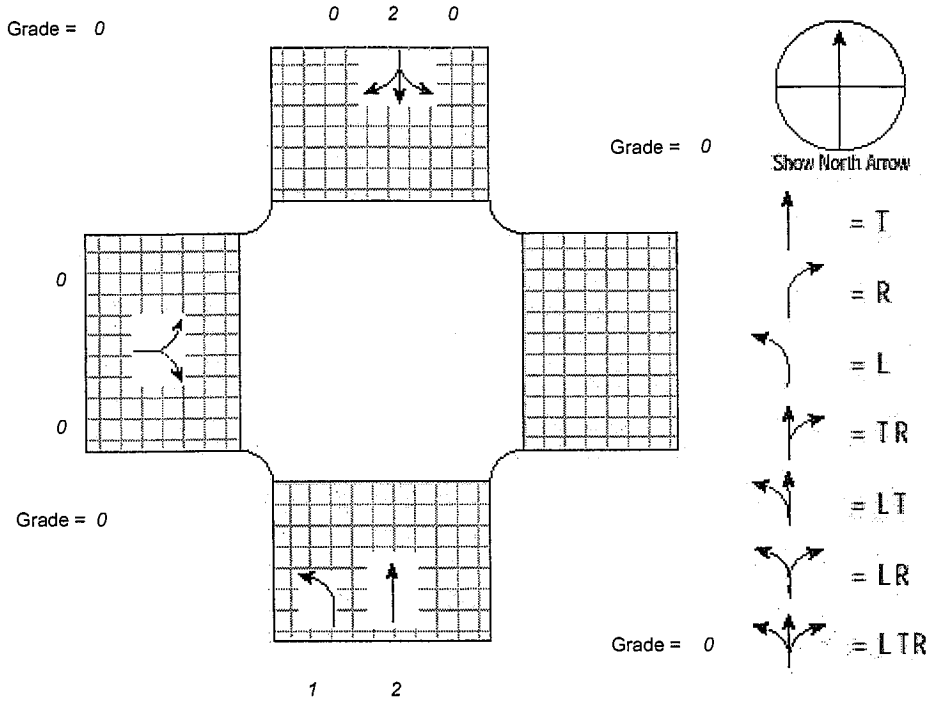
Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB		SB
Lane Group	*LR*		*L*	*T*	*LTR*
Adjusted Flow Rate	*454*		*232*	*1346*	*1424*
Lane Group Capacity	*396*		*496*	*2258*	*1485*
v/c Ratio	*1.15*		*0.47*	*0.60*	*0.96*
Green Ratio	*0.23*		*0.72*	*0.66*	*0.43*
Uniform Delay d_1	*34.5*		*17.3*	*8.8*	*24.7*
Delay Factor k	*0.50*		*0.11*	*0.18*	*0.50*
Incremental Delay d_2	*91.5*		*0.7*	*0.4*	*15.4*
PF Factor	*1.000*		*1.000*	*1.000*	*1.000*
Control Delay	*126.0*		*18.0*	*9.2*	*40.1*
Lane Group LOS	*F*		*B*	*A*	*D*
Approach Delay	*126.0*		*10.5*		*40.1*
Approach LOS	*F*		*B*		*D*
Intersection Delay	*37.9*	Intersection LOS			*D*

FULL REPORT

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ BROOKVILLE ROAD*
Agency or Co.	*Cameron Engineering*	Area Type	*All other areas*
Date Performed	*9/14/10*	Jurisdiction	*CE 1064E*
Time Period	*HIGH HOLIDAY NO BUILD*	Analysis Year	*2011 NO BUILD*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*28*		*121*				*95*	*913*		*3*	*876*	*21*
% Heavy Veh	*2*		*2*				*2*	*5*		*2*	*5*	*2*
PHF	*0.76*		*0.76*				*0.95*	*0.95*		*0.98*	*0.98*	*0.98*
Actuated (P/A)	*A*		*A*				*A*	*A*		*P*	*P*	*P*
Startup Lost Time		*2.0*					*2.0*	*2.0*			*2.0*	
Extension of Effective Green		*3.0*					*3.0*	*3.0*			*3.0*	
Arrival Type		*3*					*3*	*3*			*3*	
Unit Extension		*3.0*					*3.0*	*3.0*			*3.0*	
Ped/Bike/RTOR Volume	*0*	*0*	*0*	*0*	*0*		*0*	*0*		*0*	*0*	*0*
Lane Width		*13.0*					*12.0*	*12.0*			*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/Hour												
Bus Stops/Hour		*0*					*0*	*0*			*0*	
Pedestrian Timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = *20.0*	G =	G =	G =	G = *20.0*	G = *38.0*	G =	G =
	Y = *6*	Y =	Y =	Y =	Y = *0*	Y = *6*	Y =	Y =

Duration of Analysis (hrs) = *0.25* Cycle Length C = *90.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	28		121				95	913		3	876	21
PHF	0.76		0.76				0.95	0.95		0.98	0.98	0.98
Adjusted Flow Rate	37		159				100	961		3	894	21
Lane Group		LR					L	T			LTR	
Adjusted Flow Rate		196					100	961			918	
Proportion of LT or RT		--			--		1.000	--	0.000	0.003	--	0.023

Saturation Flow Rate

Base Satflow		1900					1900	1900			1900	
Number of Lanes	0		0				1	2		0	2	0
f_W		1.033					1.000	1.000			1.000	
f_{HV}		0.980					0.980	0.952			0.953	
f_g		1.000					1.000	1.000			1.000	
f_p		1.000					1.000	1.000			1.000	
f_{bb}		1.000					1.000	1.000			1.000	
f_a		1.000					1.000	1.000			1.000	
f_{LU}		1.000					1.000	0.952			0.952	
f_{LT}		0.991	--			--	0.950	1.000	--		0.952	--
Secondary f_{LT}			--			--	0.179	0.179	--			--
f_{RT}	--	0.890		--			--	1.000		--	0.997	
f_{Lpb}		1.000	--			--	1.000	1.000	--		1.000	--
f_{Rpb}	--	1.000		--			--	1.000		--	1.000	
Adjusted Satflow		1698					1770	3445			3272	
Secondary Adjusted Satflow			--			--	334	618	--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Capacity Analysis

	EB	WB	NB		SB
Lane Group	*LR*		*L*	*T*	*LTR*
Adjusted Flow Rate	*196*		*100*	*961*	*918*
Satflow Rate	*1698*		*1770*	*3445*	*3272*
Lost Time	*2.0*		*2.0*	*2.0*	*2.0*
Green Ratio	*0.23*		*0.72*	*0.66*	*0.43*
Lane Group Capacity	*396*		*576*	*2258*	*1418*
v/c Ratio	*0.49*		*0.17*	*0.43*	*0.65*
Flow Ratio	*0.12*		*0.06*	*0.28*	*0.28*
Critical Lane Group	*Y*		*Y*	*N*	*Y*
Sum Flow Ratios	*0.45*				
Lost Time/Cycle	*15.00*				
Critical v/c Ratio	*0.54*				

Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB		SB
Lane Group	*LR*		*L*	*T*	*LTR*
Adjusted Flow Rate	*196*		*100*	*961*	*918*
Lane Group Capacity	*396*		*576*	*2258*	*1418*
v/c Ratio	*0.49*		*0.17*	*0.43*	*0.65*
Green Ratio	*0.23*		*0.72*	*0.66*	*0.43*
Uniform Delay d_1	*29.9*		*6.0*	*7.4*	*20.1*
Delay Factor k	*0.11*		*0.11*	*0.11*	*0.50*
Incremental Delay d_2	*1.0*		*0.1*	*0.1*	*2.3*
PF Factor	*1.000*		*1.000*	*1.000*	*1.000*
Control Delay	*30.9*		*6.2*	*7.5*	*22.4*
Lane Group LOS	*C*		*A*	*A*	*C*
Approach Delay	*30.9*		*7.4*		*22.4*
Approach LOS	*C*		*A*		*C*
Intersection Delay	*15.8*	Intersection LOS			*B*

FULL REPORT

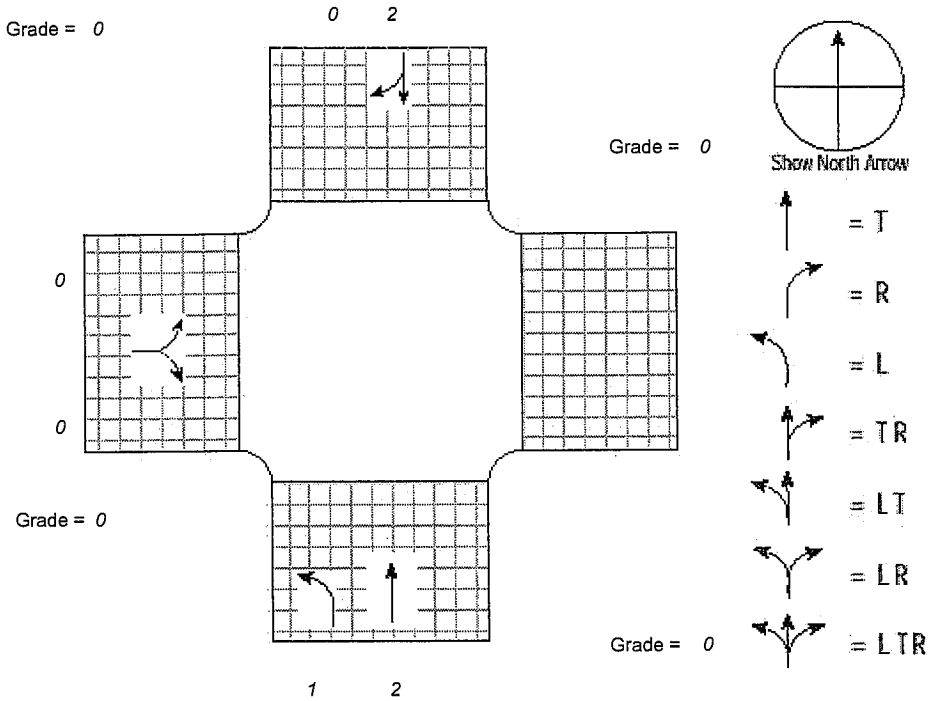
General Information

Analyst	*RG*
Agency or Co.	*Cameron Engineering*
Date Performed	*9/21/10*
Time Period	*HIGH HOLIDAY BUILD*

Site Information

Intersection	*NY 106 @ BROOKVILLE ROAD*
Area Type	*All other areas*
Jurisdiction	*CE 1064E*
Analysis Year	*2011*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*31*		*121*				*95*	*917*			*915*	*38*
% Heavy Veh	*2*		*2*				*2*	*5*			*5*	*2*
PHF	*0.76*		*0.76*				*0.95*	*0.95*			*0.98*	*0.98*
Actuated (P/A)	*A*		*A*				*A*	*A*			*P*	*P*
Startup Lost Time		*2.0*					*2.0*	*2.0*			*2.0*	
Extension of Effective Green		*3.0*					*3.0*	*3.0*			*3.0*	
Arrival Type		*3*					*3*	*3*			*3*	
Unit Extension		*3.0*					*3.0*	*3.0*			*3.0*	
Ped/Bike/RTOR Volume	*0*	*0*	*0*	*0*	*0*		*0*	*0*		*0*	*0*	*0*
Lane Width		*13.0*					*12.0*	*12.0*			*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/Hour												
Bus Stops/Hour		*0*					*0*	*0*			*0*	
Pedestrian Timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EB Only	02	03	04	NB Only	NS Perm	07	08
Timing	G = *20.0*	G =	G =	G =	G = *20.0*	G = *38.0*	G =	G =
	Y = *6*	Y =	Y =	Y =	Y = *0*	Y = *6*	Y =	Y =

Duration of Analysis (hrs) = *0.25* Cycle Length C = *90.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE CE1064D (106-BR 07 PB)*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	31		121				95	917			915	38
PHF	0.76		0.76				0.95	0.95			0.98	0.98
Adjusted Flow Rate	41		159				100	965			934	39
Lane Group		LR					L	T			TR	
Adjusted Flow Rate		200					100	965			973	
Proportion of LT or RT		--			--		1.000	--	0.000		--	0.040

Saturation Flow Rate

Base Satflow		1900					1900	1900			1900	
Number of Lanes	0		0				1	2			2	0
f_W		1.033					1.000	1.000			1.000	
f_{HV}		0.980					0.980	0.952			0.953	
f_g		1.000					1.000	1.000			1.000	
f_p		1.000					1.000	1.000			1.000	
f_{bb}		1.000					1.000	1.000			1.000	
f_a		1.000					1.000	1.000			1.000	
f_{LU}		1.000					1.000	0.952			0.952	
f_{LT}		0.990	--			--	0.950	1.000	--		1.000	--
Secondary f_{LT}			--			--	0.159	0.159	--			--
f_{RT}	--	0.893		--			--	1.000		--	0.994	
f_{Lpb}		1.000	--			--	1.000	1.000	--		1.000	--
f_{Rpb}	--	1.000		--			--	1.000		--	1.000	
Adjusted Satflow		1701					1770	3445			3429	
Secondary Adjusted Satflow			--			--	297	549	--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE CE1064D (106-BR 07 PB)*

Capacity Analysis

	EB	WB	NB		SB
Lane Group	*LR*		*L*	*T*	*TR*
Adjusted Flow Rate	*200*		*100*	*965*	*973*
Satflow Rate	*1701*		*1770*	*3445*	*3429*
Lost Time	*2.0*		*2.0*	*2.0*	*2.0*
Green Ratio	*0.23*		*0.72*	*0.66*	*0.43*
Lane Group Capacity	*397*		*558*	*2258*	*1486*
v/c Ratio	*0.50*		*0.18*	*0.43*	*0.65*
Flow Ratio	*0.12*		*0.06*	*0.28*	*0.28*
Critical Lane Group	*Y*		*Y*	*N*	*Y*
Sum Flow Ratios	*0.46*				
Lost Time/Cycle	*15.00*				
Critical v/c Ratio	*0.55*				

Lane Group Capacity, Control Delay, and LOS Determination

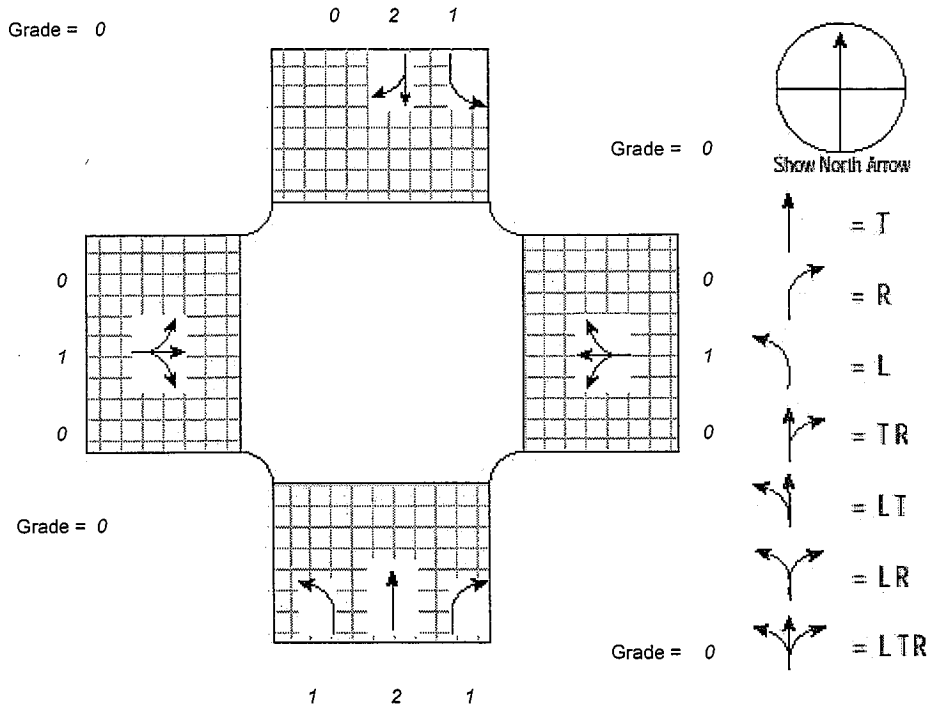
	EB	WB	NB		SB
Lane Group	*LR*		*L*	*T*	*TR*
Adjusted Flow Rate	*200*		*100*	*965*	*973*
Lane Group Capacity	*397*		*558*	*2258*	*1486*
v/c Ratio	*0.50*		*0.18*	*0.43*	*0.65*
Green Ratio	*0.23*		*0.72*	*0.66*	*0.43*
Uniform Delay d_1	*30.0*		*6.5*	*7.4*	*20.2*
Delay Factor k	*0.11*		*0.11*	*0.11*	*0.50*
Incremental Delay d_2	*1.0*		*0.2*	*0.1*	*2.3*
PF Factor	*1.000*		*1.000*	*1.000*	*1.000*
Control Delay	*31.0*		*6.6*	*7.5*	*22.4*
Lane Group LOS	*C*		*A*	*A*	*C*
Approach Delay	*31.0*		*7.5*		*22.4*
Approach LOS	*C*		*A*		*C*
Intersection Delay	*16.1*	Intersection LOS			*B*

2. NYS Route 106 and Muttontown Road

FULL REPORT

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ MUTTONTOWN RD*
Agency or Co.	*Muttontown*	Area Type	*All other areas*
Date Performed	*9/21/10*	Jurisdiction	*CE 1064E*
Time Period	*NO BUILD PM PEAK HOUR*	Analysis Year	*2011*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*14*	*28*	*27*	*123*	*30*	*72*	*26*	*949*	*177*	*91*	*722*	*10*
% Heavy Veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*5*	*2*	*2*	*5*	*2*
PHF	*0.79*	*0.79*	*0.79*	*0.87*	*0.87*	*0.87*	*0.85*	*0.85*	*0.85*	*0.77*	*0.77*	*0.77*
Actuated (P/A)	*A*	*A*	*A*	*A*	*A*	*A*	*P*	*P*	*P*	*P*	*P*	*P*
Startup Lost Time		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Extension of Effective Green		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Arrival Type		*3*			*3*		*3*	*3*	*3*	*3*	*3*	
Unit Extension		*3.0*			*3.0*		*3.0*	*3.0*	*3.0*	*3.0*	*3.0*	
Ped/Bike/RTOR Volume	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Lane Width		*12.0*			*12.0*		*12.0*	*12.0*	*12.0*	*12.0*	*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/Hour												
Bus Stops/Hour		*0*			*0*		*0*	*0*	*0*	*0*	*0*	
Pedestrian Timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = *20.0*	G =	G =	G =	G = *50.0*	G =	G =	G =
	Y = *6*	Y =	Y =	Y =	Y = *6*	Y =	Y =	Y =

Duration of Analysis (hrs) = *0.25* Cycle Length C = *82.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE CE1064D*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	14	28	27	123	30	72	26	949	177	91	722	10
PHF	0.79	0.79	0.79	0.87	0.87	0.87	0.85	0.85	0.85	0.77	0.77	0.77
Adjusted Flow Rate	18	35	34	141	34	83	31	1116	208	118	938	13
Lane Group		LTR			LTR		L	T	R	L	TR	
Adjusted Flow Rate		87			258		31	1116	208	118	951	
Proportion of LT or RT	0.207	--	0.391	0.547	--	0.322	1.000	--	1.000	1.000	--	0.014

Saturation Flow Rate

Base Satflow		1900			1900		1900	1900	1900	1900	1900	
Number of Lanes	0	1	0	0	1	0	1	2	1	1	2	0
f_W		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{HV}		0.980			0.980		0.980	0.952	0.980	0.980	0.953	
f_g		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_p		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{bb}		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_a		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{LU}		1.000			1.000		1.000	0.952	1.000	1.000	0.952	
f_{LT}		0.916	--		0.784	--	0.264	1.000	--	0.208	1.000	--
Secondary f_{LT}			--			--			--			--
f_{RT}	--	0.947		--	0.957		--	1.000	0.850	--	0.998	
f_{Lpb}		1.000	--		1.000	--	1.000	1.000	--	1.000	1.000	--
f_{Rpb}	--	1.000		--	1.000		--	1.000	1.000	--	1.000	
Adjusted Satflow		1616			1398		491	3445	1583	387	3440	
Secondary Adjusted Satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE CE1064D*

Capacity Analysis

	EB		WB		NB			SB	
Lane Group	LTR		LTR		L	T	R	L	TR
Adjusted Flow Rate	87		258		31	1116	208	118	951
Satflow Rate	1616		1398		491	3445	1583	387	3440
Lost Time	2.0		2.0		2.0	2.0	2.0	2.0	2.0
Green Ratio	0.24		0.24		0.61	0.61	0.61	0.61	0.61
Lane Group Capacity	394		341		299	2101	965	236	2098
v/c Ratio	0.22		0.76		0.10	0.53	0.22	0.50	0.45
Flow Ratio	0.05		0.18		0.06	0.32	0.13	0.30	0.28
Critical Lane Group	N		Y		N	Y	N	N	N
Sum Flow Ratios	0.51								
Lost Time/Cycle	12.00								
Critical v/c Ratio	0.60								

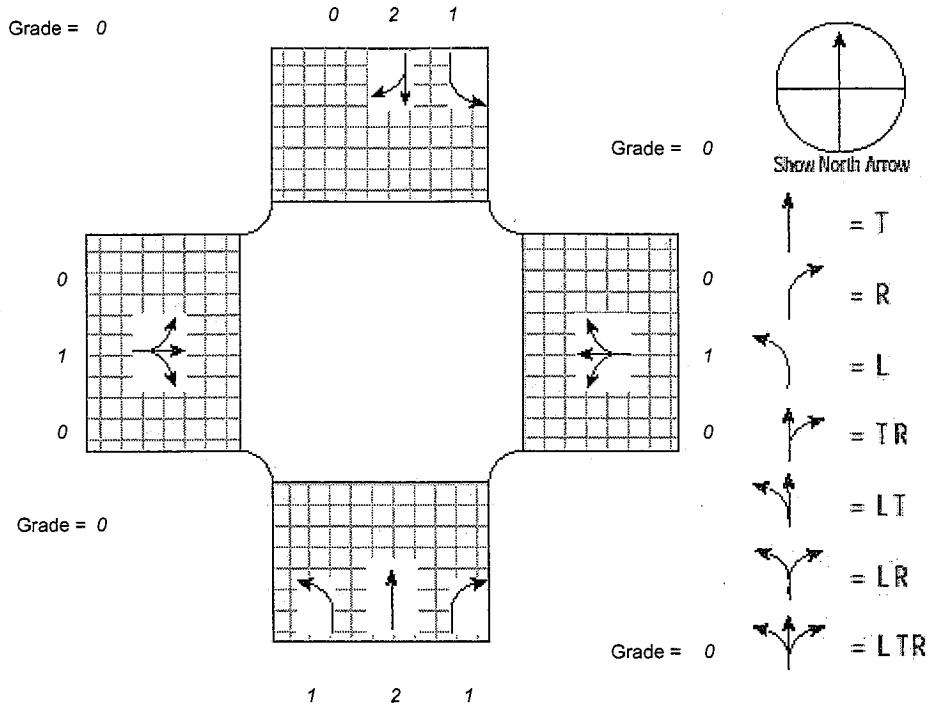
Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB			SB	
Lane Group	LTR		LTR		L	T	R	L	TR
Adjusted Flow Rate	87		258		31	1116	208	118	951
Lane Group Capacity	394		341		299	2101	965	236	2098
v/c Ratio	0.22		0.76		0.10	0.53	0.22	0.50	0.45
Green Ratio	0.24		0.24		0.61	0.61	0.61	0.61	0.61
Uniform Delay d_1	24.8		28.7		6.7	9.2	7.2	9.0	8.6
Delay Factor k	0.11		0.31		0.50	0.50	0.50	0.50	0.50
Incremental Delay d_2	0.3		9.4		0.7	1.0	0.5	7.4	0.7
PF Factor	1.000		1.000		1.000	1.000	1.000	1.000	1.000
Control Delay	25.1		38.1		7.4	10.2	7.7	16.4	9.3
Lane Group LOS	C		D		A	B	A	B	A
Approach Delay	25.1		38.1		9.8			10.1	
Approach LOS	C		D		A			B	
Intersection Delay	13.0		Intersection LOS					B	

FULL REPORT

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ MUTTONTOWN RD*
Agency or Co.	*Muttontown*	Area Type	*All other areas*
Date Performed	*9/14/10*	Jurisdiction	*CE 1064E*
Time Period	*BUILD PM PEAK HOUR*	Analysis Year	*2011*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*14*	*28*	*56*	*133*	*30*	*72*	*64*	*996*	*187*	*91*	*769*	*10*
% Heavy Veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*5*	*2*	*2*	*5*	*2*
PHF	*0.79*	*0.79*	*0.79*	*0.87*	*0.87*	*0.87*	*0.85*	*0.85*	*0.85*	*0.77*	*0.77*	*0.77*
Actuated (P/A)	*A*	*A*	*A*	*A*	*A*	*A*	*P*	*P*	*P*	*P*	*P*	*P*
Startup Lost Time		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Extension of Effective Green		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Arrival Type		*3*			*3*		*3*	*3*	*3*	*3*	*3*	
Unit Extension		*3.0*			*3.0*		*3.0*	*3.0*	*3.0*	*3.0*	*3.0*	
Ped/Bike/RTOR Volume	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Lane Width		*12.0*			*12.0*		*12.0*	*12.0*	*12.0*	*12.0*	*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/Hour												
Bus Stops/Hour		*0*			*0*		*0*	*0*	*0*	*0*	*0*	
Pedestrian Timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = *20.0*	G =	G =	G =	G = *50.0*	G =	G =	G =
	Y = *6*	Y =	Y =	Y =	Y = *6*	Y =	Y =	Y =

Duration of Analysis (hrs) = *0.25* Cycle Length C = *82.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE CE1064D (106@MR07PB)*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	14	28	56	133	30	72	64	996	187	91	769	10
PHF	0.79	0.79	0.79	0.87	0.87	0.87	0.85	0.85	0.85	0.77	0.77	0.77
Adjusted Flow Rate	18	35	71	153	34	83	75	1172	220	118	999	13
Lane Group		LTR			LTR		L	T	R	L	TR	
Adjusted Flow Rate		124			270		75	1172	220	118	1012	
Proportion of LT or RT	0.145	--	0.573	0.567	--	0.307	1.000	--	1.000	1.000	--	0.013

Saturation Flow Rate

Base Satflow		1900			1900		1900	1900	1900	1900	1900	
Number of Lanes	0	1	0	0	1	0	1	2	1	1	2	0
f_W		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{HV}		0.980			0.980		0.980	0.952	0.980	0.980	0.953	
f_g		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_p		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{bb}		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_a		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{LU}		1.000			1.000		1.000	0.952	1.000	1.000	0.952	
f_{LT}		0.937	--		0.779	--	0.242	1.000	--	0.191	1.000	--
Secondary f_{LT}			--			--			--			--
f_{RT}	--	0.923		--	0.959		--	1.000	0.850	--	0.998	
f_{Lpb}		1.000	--		1.000	--	1.000	1.000	--	1.000	1.000	--
f_{Rpb}	--	1.000		--	1.000		--	1.000	1.000	--	1.000	
Adjusted Satflow		1611			1391		450	3445	1583	355	3440	
Secondary Adjusted Satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE CE1064D (106@MR07PB)*

Capacity Analysis

	EB	WB	NB			SB		
Lane Group	LTR	LTR	L	T	R	L	TR	
Adjusted Flow Rate	124	270	75	1172	220	118	1012	
Satflow Rate	1611	1391	450	3445	1583	355	3440	
Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Green Ratio	0.24	0.24	0.61	0.61	0.61	0.61	0.61	
Lane Group Capacity	393	339	274	2101	965	216	2098	
v/c Ratio	0.32	0.80	0.27	0.56	0.23	0.55	0.48	
Flow Ratio	0.08	0.19	0.17	0.34	0.14	0.33	0.29	
Critical Lane Group	N	Y	N	Y	N	N	N	
Sum Flow Ratios	0.53							
Lost Time/Cycle	12.00							
Critical v/c Ratio	0.63							

Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB			SB		
Lane Group	LTR	LTR	L	T	R	L	TR	
Adjusted Flow Rate	124	270	75	1172	220	118	1012	
Lane Group Capacity	393	339	274	2101	965	216	2098	
v/c Ratio	0.32	0.80	0.27	0.56	0.23	0.55	0.48	
Green Ratio	0.24	0.24	0.61	0.61	0.61	0.61	0.61	
Uniform Delay d_1	25.4	29.1	7.5	9.5	7.3	9.4	8.8	
Delay Factor k	0.11	0.34	0.50	0.50	0.50	0.50	0.50	
Incremental Delay d_2	0.5	12.5	2.5	1.1	0.5	9.6	0.8	
PF Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Control Delay	25.9	41.6	10.0	10.5	7.8	18.9	9.6	
Lane Group LOS	C	D	A	B	A	B	A	
Approach Delay	25.9	41.6	10.1			10.6		
Approach LOS	C	D	B			B		
Intersection Delay	13.8	Intersection LOS				B		

FULL REPORT

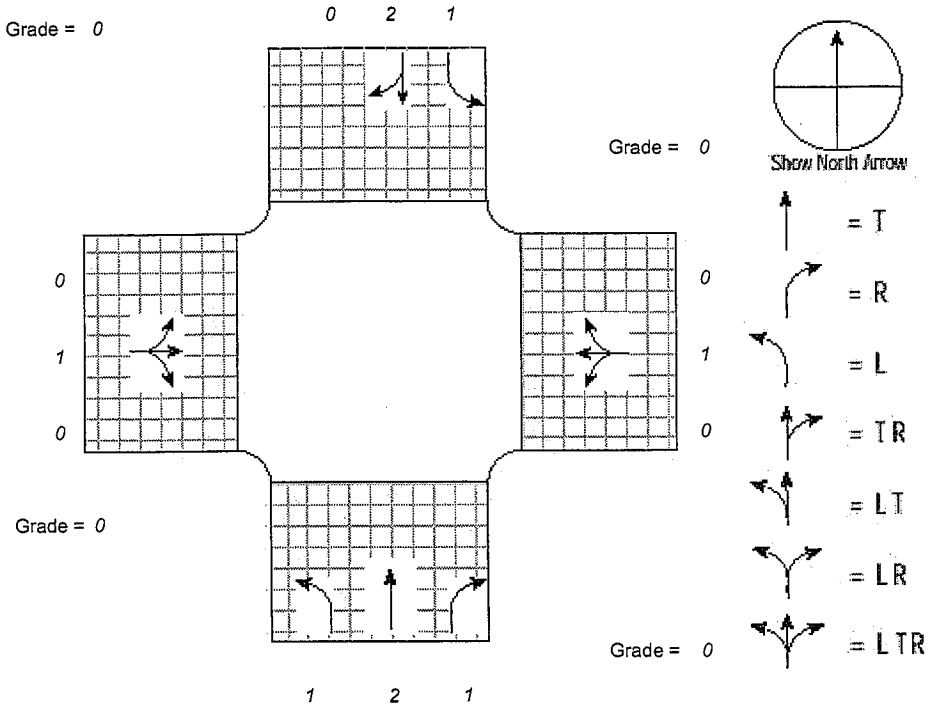
General Information

Analyst	*RG*
Agency or Co.	*Muttontown*
Date Performed	*9/14/10*
Time Period	*HIGH HOLIDAY NO BUILD*

Site Information

Intersection	*NY 106 @ MUTTONTOWN RD*
Area Type	*All other areas*
Jurisdiction	*CE 1064E*
Analysis Year	*2011*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*9*	*25*	*10*	*87*	*25*	*75*	*20*	*839*	*98*	*83*	*807*	*14*
% Heavy Veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*5*	*2*	*2*	*5*	*2*
PHF	*0.85*	*0.85*	*0.85*	*0.86*	*0.86*	*0.86*	*0.89*	*0.89*	*0.89*	*0.79*	*0.79*	*0.79*
Actuated (P/A)	*A*	*A*	*A*	*A*	*A*	*A*	*P*	*P*	*P*	*P*	*P*	*P*
Startup Lost Time		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Extension of Effective Green		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Arrival Type		*3*			*3*		*3*	*3*	*3*	*3*	*3*	
Unit Extension		*3.0*			*3.0*		*3.0*	*3.0*	*3.0*	*3.0*	*3.0*	
Ped/Bike/RTOR Volume	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Lane Width		*12.0*			*12.0*		*12.0*	*12.0*	*12.0*	*12.0*	*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/Hour												
Bus Stops/Hour		*0*			*0*		*0*	*0*	*0*	*0*	*0*	
Pedestrian Timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = *20.0*	G =	G =	G =	G = *50.0*	G =	G =	G =
	Y = *6*	Y =	Y =	Y =	Y = *6*	Y =	Y =	Y =

Duration of Analysis (hrs) = *0.25* | Cycle Length C = *82.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	9	25	10	87	25	75	20	839	98	83	807	14
PHF	0.85	0.85	0.85	0.86	0.86	0.86	0.89	0.89	0.89	0.79	0.79	0.79
Adjusted Flow Rate	11	29	12	101	29	87	22	943	110	105	1022	18
Lane Group		LTR			LTR		L	T	R	L	TR	
Adjusted Flow Rate		52			217		22	943	110	105	1040	
Proportion of LT or RT	0.212	--	0.231	0.465	--	0.401	1.000	--	1.000	1.000	--	0.017

Saturation Flow Rate

Base Satflow		1900			1900		1900	1900	1900	1900	1900	
Number of Lanes	0	1	0	0	1	0	1	2	1	1	2	0
f_W		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{HV}		0.980			0.980		0.980	0.952	0.980	0.980	0.953	
f_g		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_p		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{bb}		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_a		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{LU}		1.000			1.000		1.000	0.952	1.000	1.000	0.952	
f_{LT}		0.920	--		0.826	--	0.232	1.000	--	0.267	1.000	--
Secondary f_{LT}			--			--			--			--
f_{RT}	--	0.969		--	0.946		--	1.000	0.850	--	0.997	
f_{Lpb}		1.000	--		1.000	--	1.000	1.000	--	1.000	1.000	--
f_{Rpb}	--	1.000		--	1.000		--	1.000	1.000	--	1.000	
Adjusted Satflow		1660			1455		432	3445	1583	496	3438	
Secondary Adjusted Satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Capacity Analysis

	EB			WB			NB			SB		
Lane Group		*LTR*			*LTR*		*L*	*T*	*R*	*L*	*TR*	
Adjusted Flow Rate		*52*			*217*		*22*	*943*	*110*	*105*	*1040*	
Satflow Rate		*1660*			*1455*		*432*	*3445*	*1583*	*496*	*3438*	
Lost Time		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Green Ratio		*0.24*			*0.24*		*0.61*	*0.61*	*0.61*	*0.61*	*0.61*	
Lane Group Capacity		*405*			*355*		*263*	*2101*	*965*	*302*	*2096*	
v/c Ratio		*0.13*			*0.61*		*0.08*	*0.45*	*0.11*	*0.35*	*0.50*	
Flow Ratio		*0.03*			*0.15*		*0.05*	*0.27*	*0.07*	*0.21*	*0.30*	
Critical Lane Group		*N*			*Y*		*N*	*N*	*N*	*N*	*Y*	
Sum Flow Ratios	*0.45*											
Lost Time/Cycle	*12.00*											
Critical v/c Ratio	*0.53*											

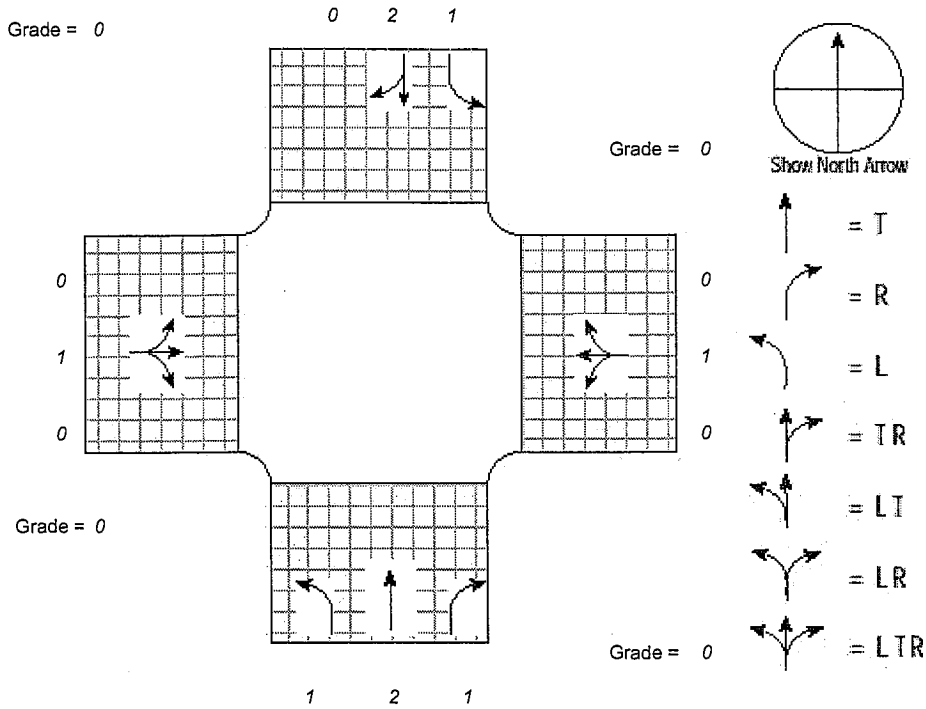
Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane Group		*LTR*			*LTR*		*L*	*T*	*R*	*L*	*TR*	
Adjusted Flow Rate		*52*			*217*		*22*	*943*	*110*	*105*	*1040*	
Lane Group Capacity		*405*			*355*		*263*	*2101*	*965*	*302*	*2096*	
v/c Ratio		*0.13*			*0.61*		*0.08*	*0.45*	*0.11*	*0.35*	*0.50*	
Green Ratio		*0.24*			*0.24*		*0.61*	*0.61*	*0.61*	*0.61*	*0.61*	
Uniform Delay d_1		*24.2*			*27.5*		*6.6*	*8.6*	*6.7*	*7.9*	*9.0*	
Delay Factor k		*0.11*			*0.20*		*0.50*	*0.50*	*0.50*	*0.50*	*0.50*	
Incremental Delay d_2		*0.1*			*3.1*		*0.6*	*0.7*	*0.2*	*3.1*	*0.8*	
PF Factor		*1.000*			*1.000*		*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	
Control Delay		*24.3*			*30.6*		*7.2*	*9.3*	*7.0*	*11.1*	*9.8*	
Lane Group LOS		*C*			*C*		*A*	*A*	*A*	*B*	*A*	
Approach Delay	*24.3*			*30.6*			*9.0*			*9.9*		
Approach LOS	*C*			*C*			*A*			*A*		
Intersection Delay	*11.6*			Intersection LOS						*B*		

FULL REPORT

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ MUTTONTOWN RD*
Agency or Co.	*Muttontown*	Area Type	*All other areas*
Date Performed	*9/21/10*	Jurisdiction	*CE 1064E*
Time Period	*HIGH HOLIDAY BUILD*	Analysis Year	*2011*

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	*9*	*25*	*12*	*88*	*25*	*75*	*42*	*899*	*104*	*83*	*842*	*14*
% Heavy Veh	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*5*	*2*	*2*	*5*	*2*
PHF	*0.85*	*0.85*	*0.85*	*0.86*	*0.86*	*0.86*	*0.89*	*0.89*	*0.89*	*0.79*	*0.79*	*0.79*
Actuated (P/A)	*A*	*A*	*A*	*A*	*A*	*A*	*P*	*P*	*P*	*P*	*P*	*P*
Startup Lost Time		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Extension of Effective Green		*2.0*			*2.0*		*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Arrival Type		*3*			*3*		*3*	*3*	*3*	*3*	*3*	
Unit Extension		*3.0*			*3.0*		*3.0*	*3.0*	*3.0*	*3.0*	*3.0*	
Ped/Bike/RTOR Volume	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Lane Width		*12.0*			*12.0*		*12.0*	*12.0*	*12.0*	*12.0*	*12.0*	
Parking (Y or N)	*N*		*N*	*N*		*N*	*N*		*N*	*N*		*N*
Parking/Hour												
Bus Stops/Hour		*0*			*0*		*0*	*0*	*0*	*0*	*0*	
Pedestrian Timing	*3.2*			*3.2*			*3.2*			*3.2*		

	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = *20.0*	G =	G =	G =	G = *50.0*	G =	G =	G =
	Y = *6*	Y =	Y =	Y =	Y = *6*	Y =	Y =	Y =

Duration of Analysis (hrs) = *0.25* Cycle Length C = *82.0*

VOLUME ADJUSTMENT AND SATURATION FLOW RATE WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Volume Adjustment

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume	9	25	12	88	25	75	42	899	104	83	842	14
PHF	0.85	0.85	0.85	0.86	0.86	0.86	0.89	0.89	0.89	0.79	0.79	0.79
Adjusted Flow Rate	11	29	14	102	29	87	47	1010	117	105	1066	18
Lane Group		LTR			LTR		L	T	R	L	TR	
Adjusted Flow Rate		54			218		47	1010	117	105	1084	
Proportion of LT or RT	0.204	--	0.259	0.468	--	0.399	1.000	--	1.000	1.000	--	0.017

Saturation Flow Rate

Base Satflow		1900			1900		1900	1900	1900	1900	1900	
Number of Lanes	0	1	0	0	1	0	1	2	1	1	2	0
f_W		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{HV}		0.980			0.980		0.980	0.952	0.980	0.980	0.953	
f_g		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_p		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{bb}		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_a		1.000			1.000		1.000	1.000	1.000	1.000	1.000	
f_{LU}		1.000			1.000		1.000	0.952	1.000	1.000	0.952	
f_{LT}		0.922	--		0.824	--	0.218	1.000	--	0.242	1.000	--
Secondary f_{LT}			--			--			--			--
f_{RT}	--	0.965		--	0.946		--	1.000	0.850	--	0.998	
f_{Lpb}		1.000	--		1.000	--	1.000	1.000	--	1.000	1.000	--
f_{Rpb}	--	1.000		--	1.000		--	1.000	1.000	--	1.000	
Adjusted Satflow		1657			1452		405	3445	1583	452	3438	
Secondary Adjusted Satflow			--			--			--			--

CAPACITY AND LOS WORKSHEET

General Information

Project Description *JEWISH CONGREGATION OF BROOKVILLE*

Capacity Analysis

	EB	WB	NB			SB		
Lane Group	*LTR*	*LTR*	*L*	*T*	*R*	*L*	*TR*	
Adjusted Flow Rate	*54*	*218*	*47*	*1010*	*117*	*105*	*1084*	
Satflow Rate	*1657*	*1452*	*405*	*3445*	*1583*	*452*	*3438*	
Lost Time	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	
Green Ratio	*0.24*	*0.24*	*0.61*	*0.61*	*0.61*	*0.61*	*0.61*	
Lane Group Capacity	*404*	*354*	*247*	*2101*	*965*	*276*	*2096*	
v/c Ratio	*0.13*	*0.62*	*0.19*	*0.48*	*0.12*	*0.38*	*0.52*	
Flow Ratio	*0.03*	*0.15*	*0.12*	*0.29*	*0.07*	*0.23*	*0.32*	
Critical Lane Group	*N*	*Y*	*N*	*N*	*N*	*N*	*Y*	
Sum Flow Ratios	*0.47*							
Lost Time/Cycle	*12.00*							
Critical v/c Ratio	*0.55*							

Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB			SB		
Lane Group	*LTR*	*LTR*	*L*	*T*	*R*	*L*	*TR*	
Adjusted Flow Rate	*54*	*218*	*47*	*1010*	*117*	*105*	*1084*	
Lane Group Capacity	*404*	*354*	*247*	*2101*	*965*	*276*	*2096*	
v/c Ratio	*0.13*	*0.62*	*0.19*	*0.48*	*0.12*	*0.38*	*0.52*	
Green Ratio	*0.24*	*0.24*	*0.61*	*0.61*	*0.61*	*0.61*	*0.61*	
Uniform Delay d_1	*24.2*	*27.6*	*7.1*	*8.8*	*6.7*	*8.1*	*9.1*	
Delay Factor k	*0.11*	*0.20*	*0.50*	*0.50*	*0.50*	*0.50*	*0.50*	
Incremental Delay d_2	*0.2*	*3.2*	*1.7*	*0.8*	*0.3*	*3.9*	*0.9*	
PF Factor	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	
Control Delay	*24.4*	*30.8*	*8.8*	*9.6*	*7.0*	*12.1*	*10.0*	
Lane Group LOS	*C*	*C*	*A*	*A*	*A*	*B*	*B*	
Approach Delay	*24.4*	*30.8*	*9.3*			*10.2*		
Approach LOS	*C*	*C*	*A*			*B*		
Intersection Delay	*11.8*	Intersection LOS				*B*		

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3. NYS Route 106 and Titus Path

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ TITUS PATH*
Agency/Co.	*V MUTTONTOWN*	Jurisdiction	*CE 1064E*
Date Performed	*9/21/10*	Analysis Year	*2011*
Analysis Time Period	*NO BUILD PM PEAK HOUR*		

Project Description	
East/West Street: *TITUS PATH*	North/South Street: *ROUTE 106*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*13*	*1098*		*0*	*770*	*0*
Peak-Hour Factor, PHF	*0.89*	*0.89*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*14*	*1233*	*0*	*0*	*855*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*		*LT*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*3*		*2*			
Peak-Hour Factor, PHF	*0.38*	*0.38*	*0.38*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*7*	*0*	*5*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*2*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*LT*					*LR*	
v (veh/h)	*14*	*0*					*12*	
C (m) (veh/h)	*411*	*561*					*421*	
v/c	*0.03*	*0.00*					*0.03*	
95% queue length	*0.11*	*0.00*					*0.09*	
Control Delay (s/veh)	*14.1*	*11.4*					*13.8*	
LOS	*B*	*B*					*B*	
Approach Delay (s/veh)	--	--				*13.8*		
Approach LOS	--	--				*B*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ TITUS PATH*
Agency/Co.	*V MUTTONTOWN*	Jurisdiction	*CE 1064E*
Date Performed	*9/21/10*	Analysis Year	*2011*
Analysis Time Period	*BUILD PM PEAK HOUR*		

Project Description

East/West Street: *TITUS PATH*	North/South Street: *ROUTE 106*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*107*	*1192*		*0*	*855*	*0*
Peak-Hour Factor, PHF	*0.50*	*0.89*	*0.90*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*214*	*1339*	*0*	*0*	*950*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*		*LT*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*3*		*2*			
Peak-Hour Factor, PHF	*0.38*	*0.38*	*0.38*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*7*	*0*	*5*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*2*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*LT*					*LR*	
v (veh/h)	*214*	*0*					*12*	
C (m) (veh/h)	*352*	*511*					*162*	
v/c	*0.61*	*0.00*					*0.07*	
95% queue length	*3.81*	*0.00*					*0.24*	
Control Delay (s/veh)	*29.9*	*12.0*					*29.0*	
LOS	*D*	*B*					*D*	
Approach Delay (s/veh)	--	--				*29.0*		
Approach LOS	--	--				*D*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ TITUS PATH*
Agency/Co.	*V MUTTONTOWN*	Jurisdiction	*CE 1064E*
Date Performed	*9/21/10*	Analysis Year	*2011*
Analysis Time Period	*HIGH HOLIDAY NO BUILD*		

Project Description

East/West Street: *TITUS PATH*	North/South Street: *ROUTE 106*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*9*	*1024*		*0*	*972*	*0*
Peak-Hour Factor, PHF	*0.95*	*0.95*	*0.90*	*0.96*	*0.96*	*0.96*
Hourly Flow Rate, HFR (veh/h)	*9*	*1077*	*0*	*0*	*1012*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*		*LT*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*		*3*			
Peak-Hour Factor, PHF	*0.50*	*0.38*	*0.50*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*6*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*2*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*LT*					*LR*	
v (veh/h)	*9*	*0*					*6*	
C (m) (veh/h)	*319*	*643*					*564*	
v/c	*0.03*	*0.00*					*0.01*	
95% queue length	*0.09*	*0.00*					*0.03*	
Control Delay (s/veh)	*16.6*	*10.6*					*11.5*	
LOS	*C*	*B*					*B*	
Approach Delay (s/veh)	--	--				*11.5*		
Approach LOS	--	--				*B*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ TITUS PATH*
Agency/Co.	*V MUTTONTOWN*	Jurisdiction	*CE 1064E*
Date Performed	*9/21/10*	Analysis Year	*2011*
Analysis Time Period	*High Holiday Build*		

Project Description

East/West Street: *TITUS PATH*	North/South Street: *ROUTE 106*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*64*	*1111*		*0*	*1009*	*0*
Peak-Hour Factor, PHF	*0.50*	*0.95*	*0.90*	*0.96*	*0.96*	*0.96*
Hourly Flow Rate, HFR (veh/h)	*128*	*1169*	*0*	*0*	*1051*	*0*
Percent Heavy Vehicles	*2*	--	--	*2*	--	--
Median Type	*Raised curb*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*		*LT*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*		*3*			
Peak-Hour Factor, PHF	*0.50*	*0.38*	*0.50*	*0.90*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*6*	*0*	*0*	*0*
Percent Heavy Vehicles	*2*	*0*	*2*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration		*LR*				

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*LT*					*LR*	
v (veh/h)	*128*	*0*					*6*	
C (m) (veh/h)	*299*	*593*					*550*	
v/c	*0.43*	*0.00*					*0.01*	
95% queue length	*2.05*	*0.00*					*0.03*	
Control Delay (s/veh)	*25.8*	*11.1*					*11.6*	
LOS	*D*	*B*					*B*	
Approach Delay (s/veh)	--	--				*11.6*		
Approach LOS	--	--				*B*		

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4. NYS Route 106 and Site Driveway

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ SITE DRIVEWAY*
Agency/Co.	*V MUTTONTOWN*	Jurisdiction	*CE 1064E*
Date Performed	*9/21/10*	Analysis Year	*2011*
Analysis Time Period	*2011 BUILD PM PEAK HOUR*		

Project Description	*JEWISH CONGREGATION OF BROOKVILLE*
East/West Street: *SITE DRIVEWAY*	North/South Street: *ROUTE 106*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*1110*	*103*	*85*	*771*	
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.50*	*0.50*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*1233*	*206*	*170*	*856*	*0*
Percent Heavy Vehicles	*0*	--	--	*2*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*187*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.50*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*0*	*0*	*374*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*2*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*			*R*			
v (veh/h)		*170*			*374*			
C (m) (veh/h)		*468*			*489*			
v/c		*0.36*			*0.76*			
95% queue length		*1.64*			*6.67*			
Control Delay (s/veh)		*17.0*			*32.5*			
LOS		*C*			*D*			
Approach Delay (s/veh)	--	--	*32.5*					
Approach LOS	--	--	*D*					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RG*	Intersection	*NY 106 @ SITE DRIVEWAY*
Agency/Co.	*V MUTTONTOWN*	Jurisdiction	*CE 1064E*
Date Performed	*9/21/10*	Analysis Year	*2011*
Analysis Time Period	*HIGH HOLIDAY BUILD w/HVs*		

Project Description	*JEWISH CONGREGATION OF BROOKVILLE*
East/West Street: *SITE DRIVEWAY*	North/South Street: *ROUTE 106*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*1032*	*7*	*37*	*974*	
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.50*	*0.50*	*0.90*	*0.90*
Hourly Flow Rate, HFR (veh/h)	*0*	*1146*	*14*	*74*	*1082*	*0*
Percent Heavy Vehicles	*0*	--	--	*100*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*1*	*1*	*1*	*0*
Configuration		*T*	*R*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*142*
Peak-Hour Factor, PHF	*0.90*	*0.90*	*0.90*	*0.90*	*0.90*	*0.50*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*0*	*0*	*284*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*23*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*			*R*			
v (veh/h)		*74*			*284*			
C (m) (veh/h)		*253*			*462*			
v/c		*0.29*			*0.61*			
95% queue length		*1.18*			*4.05*			
Control Delay (s/veh)		*25.0*			*24.4*			
LOS		*D*			*C*			
Approach Delay (s/veh)	--	--	*24.4*					
Approach LOS	--	--	*C*					