



TRAFFIC PLANNING AND DESIGN, INC.

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February 8, 2016

Ms. Jamie Jun, Esq.
Fromhold Jaffe & Adams
789 East Lancaster Avenue, Suite 220
Villanova, PA 19085

Re: Kohelet Yeshiva School
Lower Merion Township, Montgomery County, PA
TPD# KOLF.00001

Dear Jamie:

At the last hearing, questions were raised as to whether the inclusion of certain additional data or alternative assumptions described below would have any material effect on the information shown in Tables 9 and 10 in our Traffic Study dated January 21, 2016. We have gone through this exercise and enclose Tables 9 and 10 modified to show the impacts of (1) conflicting pedestrians; (2) peak hour factor for the Old Lancaster Road and Exit-Only Site Driveway intersection using the manual counts at that intersection rather than using the peak hour factor at the Old Lancaster Road and N. Highland Avenue intersection; and (3) use of uniform ideal flow rates of 1800 passenger vehicles per hour per lane in the peak hour rather than the rates of both 1800 and 1900.

As you can see, the tables are not materially affected by any of these adjustments and levels of service at all studied intersections including the Old Lancaster Road and Exit-Only Site Driveway intersection are entirely unaffected. Indeed, inclusion of conflicting pedestrians seldom impacts levels of service – certainly not at the low numbers here. Use of the peak hour factor for the Old Lancaster Road and Exit-Only Site Driveway intersection rather than the peak hour factor for the Old Lancaster Road and N. Highland Avenue intersection results in a peak hour factor that tends to improve, rather than lower the level of service at the Old Lancaster Road and Exit-Only Site Driveway intersection. This demonstrates the reasonableness of our judgment to use the peak hour factor for the Old Lancaster Road and N. Highland Avenue intersection as the peak hour factor for the Old Lancaster and Exit-Only Driveway intersection. Also, as expected, use of 1800 as the uniform ideal flow rate, rather than 1900 in the one instance where 1900 was used, has no impact on the level of service since the studied road volumes do not come even close to 1800 vehicular trips.

Also enclosed are worksheets that show the level of service that would result from use of projected future volumes as found in the Traffic Impact Study prepared by Horner and Canter Associates dated October 20, 2015 but using the Highway Capacity Manual 2010 Edition methodology. This shows that the level of service at the Old Lancaster Road and Exit-Only Driveway intersection post development remain at LOS C or better.

Finally, I have confirmed that the heavy vehicles noted in the traffic counts that entered and exited the Kohelet driveways were school buses only.

Ms. Jamie Jun, Esq.
February 8, 2016
Page 2

Please let me know if you require any further information.

Sincerely

TRAFFIC PLANNING AND DESIGN, INC.



Greg Richardson, P.E.
Executive Vice-President

grichardson@TrafficPD.com

Attachments

cc: Holly Cohen
Fred Fromhold, Esq.

**TABLE 9
LEVEL OF SERVICE (SECONDS) SUMMARY**

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Existing	2017 Opening Year		Existing	2017 Opening Year	
			Base	Projected		Base	Projected
Old Lancaster Road & N. Highland Avenue	EB L/T/R	C	C	C	B	B	B
	WB L/T/R	C	C	C	C	C	C
	NB L/T/R	A	A	A	A	A	A
	SB L/T/R	A	A	A	A	A	A
	ILOS	A (8.7)	A (8.7)	A (9.1)	A (9.3)	A (9.3)	A (9.4)
Old Lancaster Road & Exit-Only Site Driveway	EB L/R	B	B	C	B	B	C
	ILOS	A (0.4)	A (0.4)	A (2.0)	A (0.8)	A (0.8)	A (2.4)
N. Highland Avenue & Enter-Only Site Driveway	EB L	A	A	A	A	A	A
	ILOS	A (0.5)	A (0.5)	A (0.6)	A (0.2)	A (0.2)	A (0.4)

Base = No-Build scenario; Projected = Build scenario; ILOS = Overall Intersection Level of Service

**TABLE 9 (REVISED)
LEVEL OF SERVICE (SECONDS) SUMMARY**

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Existing	2017 Opening Year ¹		Existing	2017 Opening Year ¹	
			Base	Projected		Base	Projected
Old Lancaster Road & N. Highland Avenue	EB L/T/R	C	C	C	B	B	B
	WB L/T/R	C	C	C	C	C	C
	NB L/T/R	A	A	A	A	A	A
	SB L/T/R	A	A	A	A	A	A
	ILOS	A (8.7)	A (8.7)	A (9.1)	A (9.3)	A (9.3)	A (9.4)
Old Lancaster Road & Exit-Only Site Driveway	EB L/R	B	B	C	B	B	C
	ILOS	A (0.4)	A (0.4)	A (2.0) (2.1)	A (0.8) (0.7)	A (0.8) (0.7)	A (2.4) (2.2)
N. Highland Avenue & Enter-Only Site Driveway	EB L	A	A	A	A	A	A
	ILOS	A (0.5)	A (0.5)	A (0.6)	A (0.2)	A (0.2)	A (0.4)

Base = No-Build scenario; Projected = Build scenario; ILOS = Overall Intersection Level of Service

¹. 2017 Opening Year = Student Population of 360 in 2017

**TABLE 10
95TH PERCENTILE (FEET) SUMMARY**

Intersection	Movement	Available Storage	2017 Opening Year			
			Weekday AM Peak Hour		Weekday PM Peak Hour	
			Base	Projected	Base	Projected
Old Lancaster Road & N. Highland Avenue	EB L/T/R	250+	93	93	50	50
	WB L/T/R	250+	83	95	128	138
	NB L/T/R	250+	120	145	123	135
	SB L/T/R	250+	143	200	133	173
Old Lancaster Road & Exit-Only Site Driveway	EB L/R	200+	<25	25	<25	33
N. Highland Avenue & Enter-Only Site Driveway	EB L	200+	<25	<25	<25	<25

**TABLE 10 (REVISED)
95TH PERCENTILE (FEET) SUMMARY**

Intersection	Movement	Available Storage	2017 Opening Year ¹			
			Weekday AM Peak Hour		Weekday PM Peak Hour	
			Base	Projected	Base	Projected
Old Lancaster Road & N. Highland Avenue	EB L/T/R	250+	93	93	50	50
	WB L/T/R	250+	83	95	128	138
	NB L/T/R	250+	120	145	123	135
	SB L/T/R	250+	143	200	133	173
Old Lancaster Road & Exit-Only Site Driveway	EB L/R	200+	<25	25 30	<25	33 30
N. Highland Avenue & Enter-Only Site Driveway	EB L	200+	<25	<25	<25	<25

¹. 2017 Opening Year = Student Population of 360 in 2017

Analysis of Exiting Driveway Intersection Utilizing Horner & Canter Input Data and 2010 HCM Methodology

2: Old Lancaster Road & Exit-Only Site Driveway 2017 Projected Conditions - Horner Canter Numbers and Inputs

Horner Canter Test
Timing Plan: AM Peak Hour

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↘	↖	↑	↑	↘
Volume (vph)	46	68	0	304	520	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	14	12	12
Link Speed (mph)	15		35		35	
Link Distance (ft)	260		385		1407	
Travel Time (s)	11.8		7.5		27.4	
Confl. Peds. (#/hr)	6	8	8			6
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	0%	4%	4%	0%
Parking (#/hr)				0		
Shared Lane Traffic (%)						
Intersection Summary						
Area Type:	Other					

2: Old Lancaster Road & Exit-Only Site Driveway 2017 Projected Conditions - Horner Canter Numbers and Inputs

Horner Canter Test
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement						
	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	46	68	0	304	520	0
Conflicting Peds, #/hr	6	8	8	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0		-		-	
Veh in Median Storage, #	0		-		0	
Grade, %	0		-		0	
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	10	10	0	4	4	0
Mvmt Flow	52	76	0	342	584	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	934	600	592	0	0
Stage 1	592	-		-	
Stage 2	342	-		-	
Critical Hdwy	6.5	6.3	4.3	-	
Critical Hdwy Stg 1	5.5	-		-	
Critical Hdwy Stg 2	5.5	-		-	
Follow-up Hdwy	3.1	3.2	3	-	
Pot Cap-1 Maneuver	313	508	750	-	
Stage 1	600	-		-	
Stage 2	795	-		-	
Platoon blocked, %	-		-		
Mov Cap-1 Maneuver	307	500	744	-	
Mov Cap-2 Maneuver	307	-		-	
Stage 1	595	-		-	
Stage 2	788	-		-	

Approach	EB	NB	SB
HCM Control Delay, s	18.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	744	-	399	-
HCM Lane V/C Ratio	-	-	0.321	-
HCM Control Delay (s)	0	-	18.2	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0	-	1.4	-

Analysis of Exiting Driveway Intersection Utilizing Horner & Canter Input Data and 2010 HCM Methodology

2: Old Lancaster Road & Exit-Only Site Driveway 2017 Projected Conditions - Horner Canter Numbers and Inputs

Horner Canter Test
Timing Plan: Weekday PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↑	↑	↔
Volume (vph)	48	73	0	343	379	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	14	12	12
Link Speed (mph)	15			35	35	
Link Distance (ft)	260			385	1407	
Travel Time (s)	11.8			7.5	27.4	
Confl. Peds. (#/hr)	17	8	8			17
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	10%	10%	0%	1%	1%	0%
Parking (#/hr)				0		
Shared Lane Traffic (%)						

Intersection Summary	
Area Type:	Other

2: Old Lancaster Road & Exit-Only Site Driveway 2017 Projected Conditions - Horner Canter Numbers and Inputs

Horner Canter Test
Timing Plan: Weekday PM Peak

Intersection	
Int Delay, s/veh	2.3
Movement	
	EBL EBR NBL NBT SBT SBR
Vol, veh/h	48 73 0 343 379 0
Conflicting Peds, #/hr	17 8 8 0 0 17
Sign Control	Stop Stop Free Free Free Free
RT Channelized	- None - None - None
Storage Length	0 - - - -
Veh in Median Storage, #	0 - - 0 0 -
Grade, %	0 - - 0 0 -
Peak Hour Factor	89 89 89 89 89 89
Heavy Vehicles, %	10 10 0 1 1 0
Mvmt Flow	54 82 0 385 426 0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	828	451	443 0
Stage 1	443	-	- -
Stage 2	385	-	- -
Critical Hdwy	6.5	6.3	4.3 -
Critical Hdwy Stg 1	5.5	-	- -
Critical Hdwy Stg 2	5.5	-	- -
Follow-up Hdwy	3.1	3.2	3 -
Pot Cap-1 Maneuver	364	620	845 -
Stage 1	710	-	- -
Stage 2	758	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	350	604	838 -
Mov Cap-2 Maneuver	350	-	- -
Stage 1	697	-	- -
Stage 2	744	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	15.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	838	- 469	- -	
HCM Lane V/C Ratio	-	- 0.29	- -	
HCM Control Delay (s)	0	- 15.8	- -	
HCM Lane LOS	A	- C	- -	
HCM 95th %tile Q(veh)	0	- 1.2	- -	