

MEMORANDUM

Date:	January 12, 2024	TG:	1.24010.00
To:	Matt Haggen, RAM Construction		
From:	Dan McKinney, Jr – Transpo Group		
Subject:	Franklin Academy – Robin Hall Expansion Transportation Memorandum		

This memorandum summarizes the transportation related impacts associated with the proposed expansion of Robin Hall at Franklin Academy. This includes background related to the approved student enrollments allowed in previous conditional use permits as well as student enrollment and trip generation associated with the proposed project.

Background

Franklin Academy is a private K-8 school that generally operates in two buildings that are across the street from each other. This include Markell Hall located at 1509 E. Victor and Robin Hall located at 3000 Northwest. The Conditional Use Permit for Franklin Academy allows for a maximum enrollment of 520 students, which includes an allowable 270 students in Robin Hall and 250 in Markell Hall. Currently there are 393 students enrolled with 160 students at Robin Hall and 233 students at Markell Hall. This provides an allowable capacity for 127 additional students.

Project Description

The Robin Hall expansion is being completed to better accommodate the existing student population and provide for a more efficient and effective learning environment. The remodel would facilitate shifting 45 students from Markell Hall to the newly renovated Robin Hall but would not increase the enrollment. The allowable student enrollment vs the current enrollment and enrollment after the Robin Hall Expansion are summarized in Table 1.

Table 1. Franklin Academy Enrollment Summary

	CUP Allowable Enrollment	Current Enrollment	Enrollment Shift after Robin Hall Expansion
Robin Hall	270	160	205
Markell Hall	250	233	188
Total Franklin Academy	520	393	393

As shown in Table 1, the current and anticipated enrollments with the Robin Hall Expansion would fall within the allowable enrollment of the conditional use permits.

Trip Generation

Trip generation is the amount of vehicular traffic generated by the land use. The Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2021) is the industry’s most utilize source of information for estimating vehicular traffic for a variety of land uses and independent variables. The manual includes the land use Private School (K-8) (LU # 530), and average rates for the number of students were used to estimate the number of trips generated by the total Franklin Academy. The number of students is the most reliable independent variable for estimating traffic for school uses. Table 2 summarizes the estimated weekday trips generated by

Franklin Academy, Robin Hall and Markell Hall. The detailed trip generation calculations are included in Attachment A.

Table 2. Estimated Weekday Vehicle Trip Generation

Condition	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
<u>Franklin Academy</u>								
CUP Allowable Enrollment	520 students	2,138	294	231	525	62	73	135
Current Enrollment	393 students	1,616	222	175	397	47	55	102
<i>Allowable Trips Remaining</i>		522	72	56	128	15	18	33
<u>Robin Hall</u>								
Current Enrollment	160 students	658	91	71	162	19	23	42
Shift After Remodel	205 students	844	116	91	207	24	29	53
<i>Change in Trips</i>		+186	+25	+20	+45	+5	+6	+11
<u>Markell Hall</u>								
Current Enrollment	233 students	958	131	104	235	28	32	60
Shift After Remodel	188 students	772	106	84	190	23	26	49
<i>Change in Trips</i>		-186	-25	-20	-45	-5	-6	-11

1. Average trip rates from ITE *Trip Generation Manual*, 11th Edition (2021) based on Private School (K-8) (LU #530) Land Use.

As shown in Table 2, the current enrollment falls below the CUP allowable enrollment and generates less traffic overall than what is allowed by the CUP. The expansion of Robin Hall will facilitate shifting 45 students from Markell Hall to Robin Hall. This would not change the overall volume of traffic generated by Franklin Academy; however, would shift 186 weekday daily trips from Markell Hall to Robin Hall with 45 trips shifting in the weekday AM peak hour and 11 trips shifting in the weekday PM peak hour.

Conclusions

The overall student enrollment falls under what is allowable in the conditional use permits and enrollment is anticipated to remain the same. The expansion of Robin Hall will allow Franklin Academy to function more effectively for the existing student enrollment and would accommodate shifting 45 students from Markel Hall to Robin Hall. Given traffic and trip generation is driven by the number of students the volume of overall traffic is not anticipated to change; however, there would be some shifts in traffic from Markel Hall to Robin Hall as outlined in the trip generation section.

Attachment A: Detailed Project Trip Generation



Franklin Academy - Robin Hall Expansion
Franklin Academy

<u>Proposed Use - CUP Allowable Enrollment</u>										
								Primary Trips		
Land Use	Setting	Size	Units	Model	Equation	Rate	Inbound %	Inbound	Outbound	Total
Private School (K-8) (LU 530)		520 attendees		(students)						
Daily	General Urban/Suburban			Rate	-	4.11	50%	1,069	1,069	2,138
AM Peak Hour	General Urban/Suburban			Rate	-	1.01	56%	294	231	525
PM Peak Hour	General Urban/Suburban			Rate	-	0.26	46%	62	73	135
<u>Subtotal</u>										
Daily								1,069	1,069	2,138
AM Peak Hour								294	231	525
PM Peak Hour								62	73	135

<u>Existing Use - Current Enrollment</u>										
								Primary Trips		
Land Use		Size	Units	Model	Equation	Rate	Inbound %	Inbound	Outbound	Total
Private School (K-8) (LU 530)		393 attendees		(students)						
Daily	General Urban/Suburban			Rate	-	4.11	50%	808	808	1,616
AM Peak Hour	General Urban/Suburban			Rate	-	1.01	56%	222	175	397
PM Peak Hour	General Urban/Suburban			Rate	-	0.26	46%	47	55	102
<u>Subtotal</u>										
Daily								808	808	1616
AM Peak Hour								222	175	397
PM Peak Hour								47	55	102

<u>Net New Trips</u>										
Daily								261	261	522
AM Peak Hour								72	56	128
PM Peak Hour								15	18	33

Notes:

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation Manual* (11th Edition) equation and average trip rates as shown above.

Franklin Academy - Robin Hall Expansion
Robin Hall

<u>Proposed Use - Shift After Remodel</u>										
								Primary Trips		
Land Use	Setting	Size	Units	Model	Equation	Rate	Inbound %	Inbound	Outbound	Total
Private School (K-8) (LU 530)		205	attendees	(students)						
Daily	General Urban/Suburban			Rate	-	4.11	50%	422	422	844
AM Peak Hour	General Urban/Suburban			Rate	-	1.01	56%	116	91	207
PM Peak Hour	General Urban/Suburban			Rate	-	0.26	46%	24	29	53
<u>Subtotal</u>										
Daily								422	422	844
AM Peak Hour								116	91	207
PM Peak Hour								24	29	53

<u>Existing Use - Current Enrollment</u>										
								Primary Trips		
Land Use		Size	Units	Model	Equation	Rate	Inbound %	Inbound	Outbound	Total
Private School (K-8) (LU 530)		160	attendees	(students)						
Daily	General Urban/Suburban			Rate	-	4.11	50%	329	329	658
AM Peak Hour	General Urban/Suburban			Rate	-	1.01	56%	91	71	162
PM Peak Hour	General Urban/Suburban			Rate	-	0.26	46%	19	23	42
<u>Subtotal</u>										
Daily								329	329	658
AM Peak Hour								91	71	162
PM Peak Hour								19	23	42

<u>Net New Trips</u>										
Daily								93	93	186
AM Peak Hour								25	20	45
PM Peak Hour								5	6	11

Notes:

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation Manual* (11th Edition) equation and average trip rates as shown above.

**Franklin Academy - Robin Hall Expansion
Markell Hall**

<u>Proposed Use - Shift After Remodel</u>										
								Primary Trips		
Land Use	Setting	Size	Units	Model	Equation	Rate	Inbound %	Inbound	Outbound	Total
Private School (K-8) (LU 530)		188	attendees	(students)						
Daily	General Urban/Suburban			Rate	-	4.11	50%	386	386	772
AM Peak Hour	General Urban/Suburban			Rate	-	1.01	56%	106	84	190
PM Peak Hour	General Urban/Suburban			Rate	-	0.26	46%	23	26	49
<u>Subtotal</u>										
Daily								386	386	772
AM Peak Hour								106	84	190
PM Peak Hour								23	26	49

<u>Existing Use - Current Enrollment</u>										
								Primary Trips		
Land Use		Size	Units	Model	Equation	Rate	Inbound %	Inbound	Outbound	Total
Private School (K-8) (LU 530)		233	attendees	(students)						
Daily	General Urban/Suburban			Rate	-	4.11	50%	479	479	958
AM Peak Hour	General Urban/Suburban			Rate	-	1.01	56%	131	104	235
PM Peak Hour	General Urban/Suburban			Rate	-	0.26	46%	28	32	60
<u>Subtotal</u>										
Daily								479	479	958
AM Peak Hour								131	104	235
PM Peak Hour								28	32	60

<u>Net New Trips</u>										
Daily								-93	-93	-186
AM Peak Hour								-25	-20	-45
PM Peak Hour								-5	-6	-11

Notes:

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation Manual* (11th Edition) equation and average trip rates as shown above.