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SEP 27 2023

Land Development Services

**Jake Renney**

**From:** Andrew Niemi <andrew@lowercolumbiaengr.com>  
**Sent:** Wednesday, September 27, 2023 12:26 PM  
**To:** Michael Russell  
**Cc:** Jake Renney; Matthew Alexander  
**Subject:** Columbia County Christian School  
**Attachments:** 3456\_Trip Generation 09-27-23.pdf; ITE 534.png; ITE 534\_Students.png

Some people who received this message don't often get email from andrew@lowercolumbiaengr.com. [Learn why this is important](#)

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Hi Mike,

Thanks for calling for clarification on the Trip Generation Analysis for the Columbia County Christian School. We corrected the typo on the attached version to properly reflect 103 total trips for the existing facility, rather than 123. As far as the methodology for calculating the Peak Hour Trips, you can base it on either the number of students at the facility or the number of employees. We chose employees as that was a more conservative approach (resulted in the higher number of trips). If you use the multiplier for students, which is .62, it comes to 81 Peak Hour Trips so actually less. I've attached the diagram from the ITE manual for each method.

Keep in mind that this is just the peak hour so this is basically saying that not everyone student is getting picked up during a single hour, or if they are, some parents are picking up multiple kids which I think makes sense. In either case, the existing and proposed number of trips should be the same.

Let us know of any further questions.

Thanks,

**Andrew Niemi, P.E.**  
**Principal Engineer**

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### Technical Memorandum

**To:** Columbia County Transportation Division  
**From:** Andrew Niemi, P.E.  
**Date:** August 08, 2023  
**Subject:** Columbia County Christian School - Trip Generation Analysis  
**Project:** 3456

We have performed a simple trip generation analysis for the proposed Columbia County Christian School at the intersection of Church Lane and Church Road in Warren as well as a trip generation analysis for the site’s previous use. The school to be housed in the proposed development already exists on the adjacent property and all school traffic will continue to use Church Lane to access the school. The Warren Community Fellowship Church, which currently accommodates the school within its building(s), has always required school-related traffic to access the property via Church Lane in order to avoid congestion along the highway. Because of this, the same designation (Private School K-8) has been used to calculate the previous use trip estimation. Given the fact that the school is not increasing its population as a result of this new development, moving the school to the subject property will not result in any additional traffic on Church Lane or Church Road unless or until the school expands sometime in the future.

The existing school employs a staff of 18 and has no plan to hire additional staff for this development. The existing student population is around 130 students and will not increase as a result of this development. The proposed development simply provides a permanent facility in which to house the school. As mentioned above, Church Lane will continue to be used as the entrance and exit point for all school-related traffic. The addition of a school-only parking lot and a drop-off/pick-up loading aisle should help to decongest Church Lane during peak hours of traffic. We developed trip generation estimates for the proposed and previous uses, based on data from the 10<sup>th</sup> Edition of the ITE Trip Generation Handbook.

**PREVIOUS USE TRIP ESTIMATION SUMMARY**

ITE	DESCRIPTION	Employees	WEEKDAY PEAKHOUR		
			Trips/Employee	#Students	Total Trips
534	Private School K-8 (on adjacent property using the same route/roads)	18	5.72	18	103
<b>PREVIOUS USE TRIPS</b>					<b>103</b>

**PROPOSED USE TRIP ESTIMATION SUMMARY**

ITE	DESCRIPTION	Employees	Trips/Employee	WEEKDAY	
				#Employees	Total Trips
534	Private School (K-8) (subject property)	18	5.72	18	103
<b>PROPOSED USE TRIPS</b>					<b>103</b>

## Private School (K-8) (534)

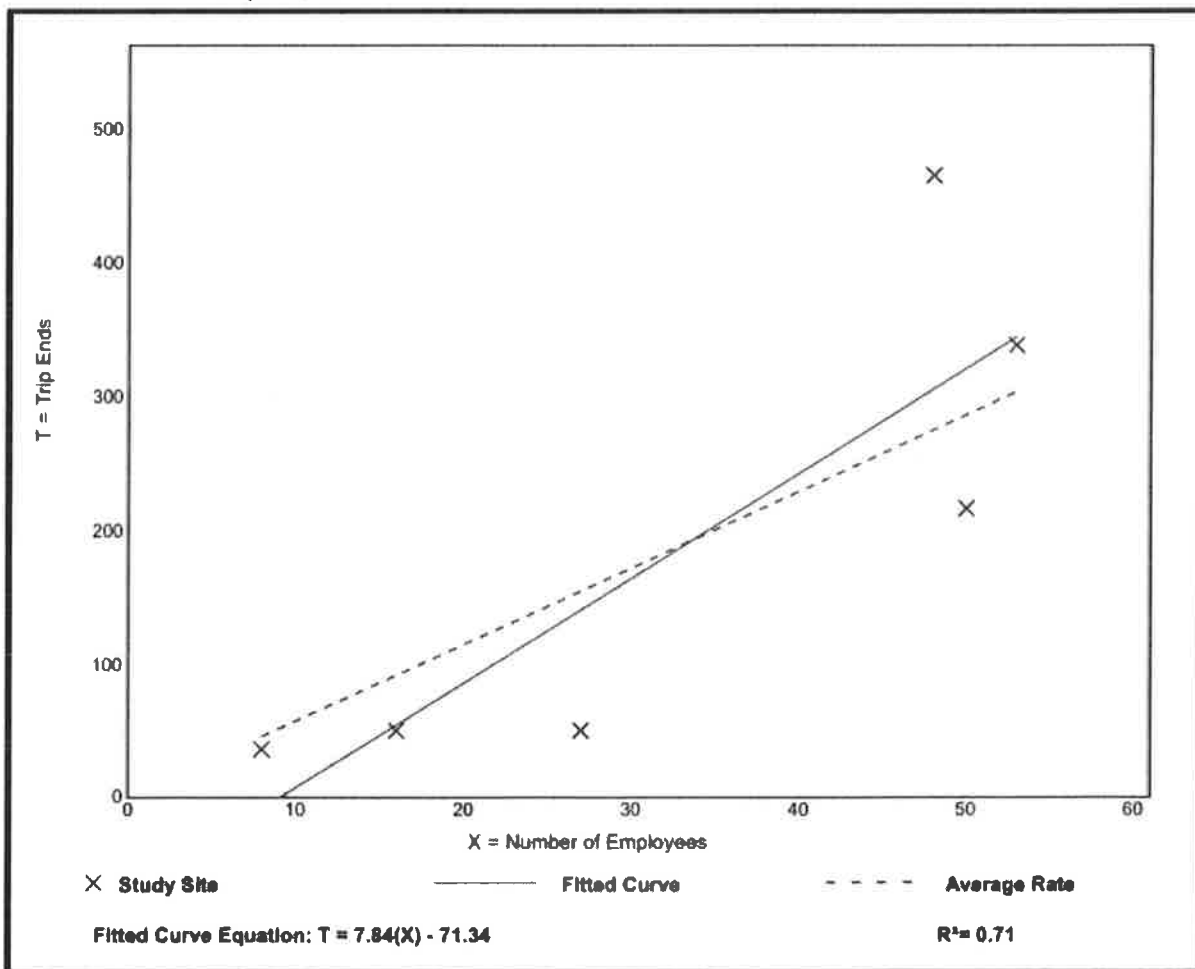
**Vehicle Trip Ends vs: Employees**  
**On a: Weekday,**  
**PM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 6  
 Avg. Num. of Employees: 34  
 Directional Distribution: 47% entering, 53% exiting

### Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
5.72	1.85 - 9.69	2.88

### Data Plot and Equation



## Private School (K-8) (534)

**Vehicle Trip Ends vs: Students**  
**On a: Weekday,**  
**PM Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 10  
 Avg. Num. of Students: 343  
 Directional Distribution: 47% entering, 53% exiting

### Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.62	0.42 - 0.79	0.09

### Data Plot and Equation

