

**Proposed Coffee/Donut Shop
with Drive-Through -
Trip Generation Analysis**

Block 71.01, Lot 2
Cherry Hill Township, Camden
County, New Jersey



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A handwritten signature in blue ink, appearing to read "Adam Catherine", written over a horizontal line.

Adam Catherine, PE
NJ PE: GE49000
November 7, 2019

PROPOSED COFFEE/DONUT SHOP WITH DRIVE-THROUGH - TRIP GENERATION ANALYSIS

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1.0 INTRODUCTION

This document summarizes the results of a trip generation analysis performed to estimate the number of additional vehicle trips that would be generated by a proposed coffee/donut shop with drive-through to be located at 2325 Marlton Pike W, Cherry Hill, NJ (Block No: 71.01, Lot: 2). The proposed development would consist of a 2,747 square-foot (SF) coffee/donut shop with drive-through that would be located immediately to the west of the existing Magic Car Wash. Access to the proposed coffee/donut shop would be provided via a new right-in, right-out driveway on NJ 70 westbound that would provide shared access to the adjacent car wash that currently exists. The existing drop-curb access along the carwash frontage would be closed and all access to/from the carwash would be provided by the proposed shared driveway. This represents a significant improvement to access control along westbound Route 70 in this area.

2.0 TRIP GENERATION ANALYSIS

A trip generation analysis was performed to estimate the number of new vehicle trips that would be generated by the proposed 2,747 square-foot coffee/donut shop and the number of existing trips generated by the 3,979 square foot carwash. The Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition) Land Use Codes 948 (Automated Car Wash), and 937 (Coffee/Donut Shop with Drive-Through Window) were utilized to compare the number of AM peak hour, PM peak hour, weekday, and Saturday peak hour trips that would be generated by the existing and proposed conditions (Table 1). It should be noted that ITE *Trip Generation Manual* contains very little data for car wash facilities. Thus, only PM and Saturday peak hour volumes could be obtained from the Manual.

In addition to the *Trip Generation Manual*, studies conducted by ITE reveal that trips generated by retail, such as stores, banks, and restaurants are not all newly generated trips on the network. For example, a driver may decide to stop at the coffee/donut shop while heading to work. That driver's trip is already on the roadway network but is temporarily diverted to the coffee/donut shop.

Pass-by activity is anticipated to be a significant portion of the trips generated by the proposed coffee/donut shop for several reasons. First, the proposed development can only be accessed to and from westbound NJ 70, a major commuter arterial in Camden County. Second, there is another coffee/donut shop that has recently been completed on the eastbound side of NJ 70, approximately 900 feet to the east of the proposed facility. Thus, the limited access, location on a busy commuter route, and the presence of a coffee/donut shop on the opposite side of the road in the approximate same area as the proposed facility will likely result in a high pass-by trip percentage.

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The *ITE Trip Generation Manual User's Guide and Handbook* (3rd Edition) was utilized to determine the percentage of trips generated by the proposed coffee/donut shop that would be pass-by. There is no separate calculation for pass-by trips for Land Use Code 937, thus Land Use Code 934 (Fast-Food Restaurant with Drive-Through) was utilized. Based on the data contained within the *Handbook*, the average pass-by trip percentage for Land Use Code 934 is 49% in the AM peak hour and 50% in the PM peak hour. The PM peak hour pass-by percentage was also assumed for the weekday and Saturday pass-by activity. Although, it is anticipated that actual pass-by trips will be higher than that presented in the ITE data, utilizing these numbers will provide for a conservative analysis.

The results of the trip generation analysis, shown in Table 1, indicate that the proposed development would generate approximately 125 new AM peak hour trips, 59 new PM peak hour trips, 120 new Saturday peak hour trips, and 1,128 new weekday trips.

Table 1: Trip Generation Analysis Summary (Total of Arriving and Departing Trips)

			AM Peak Hour	PM Peak Hour	Weekday	Saturday Peak Hour
Existing	Car Wash	3,979 SF	0	46	460 ¹	121
Proposed	Coffee/Donut Shop with Drive-Through	2,747 SF	245	119	2,256	241
	Pass-By Trips	AM (49%) Weekday, PM, Saturday (50%)	-120	-60	-1,128	-121
	Total New Trips on Roadway Network		125	59	1,128	120
Total New Trips on Driveway²			245 (51% In, 49% Out)	165 (50% In, 50% Out)	2,716 (50% In, 50% Out)	362 (50% In, 50% Out)

1. Estimated based on assumption that PM peak hour being approximately 10% of total daily.
2. Total Driveway Trips = Coffee/Donut Shop Trips + Existing Car Wash Trips. Pass-by trips are included in this calculation because they will utilize the proposed driveway even though they are not new trips on the overall roadway network.

As discussed earlier in this report, NJ 70 is a major arterial corridor in Camden County and connects Cherry Hill and the surrounding suburbs with Camden and Philadelphia. In order to assess the potential for transportation impacts on NJ 70 westbound, Stantec compared the number of additional vehicle trips generated by the proposed development to the existing weekday volume utilizing data available from the DVRPC website that was collected in 2017 within the segment of the proposed development (Table 2). The proposed new trips would represent 6% of total AM peak hour trips, 3% of total PM peak hour trips, and 4% of total daily trips along westbound NJ 70. As noted above, the trip generation analysis should be considered

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conservative, and it is likely that the number of new trips would be less than predicted with the ITE data. Thus, it is anticipated that the proposed development would have a negligible impact on the operation of Route 70 westbound.

Table 2: Comparison of New Site Generated Trips to Overall Volume on NJ 70 Westbound

	AM Peak Hour	PM Peak Hour	AADT
NJ 70 Westbound (2017 ATR Data Available from DVRPC)	2,207	2,297	32,024
New Site Generated Trips	125	59	1,128
Percentage of Total NJ 70 Volume	6%	3%	4%

3.0 CONCLUSION

The results of the trip generation analysis indicate that the proposed development would generate approximately 125 new AM peak hour trips, 59 new PM peak hour trips, 120 new Saturday peak hour trips, and 1,128 new weekday trips. The proposed new trips would represent 6% of total AM peak hour trips, 3% of total PM peak hour trips, and 4% of total daily trips along westbound NJ 70. However, this trip generation analysis should be considered conservative and it is likely that the number of new trips would be less than predicted with the ITE data. Thus, it is anticipated that the proposed development would have a negligible impact on the operation of Route 70 westbound.