



David E. Wooster and Associates, Inc.

Straightforward & Unwavering

19 Colonnade Way, Suite 117
PMB # 269
State College, PA 16803

November 22, 2021

Mr. Alejandro Quintana
Development Project Engineer
HUTTON
736 Cherry Street
Chattanooga, TN 37402

Reference: Trip Generation Analysis – ModWash Site –127 Kim Acres Drive – Upper Allen Township, Cumberland County, Pennsylvania

Dear Mr. Quintana:

As requested, David E. Wooster and Associates, Inc. has performed a trip generation analysis for the proposed redevelopment of the bank site located at 127 Kim Acres Drive in Upper Allen Township to a ModWash site. The purpose of this correspondence is to provide you a summary of the analysis.

Proposed Use on Site

Based on the information you provided, the redevelopment of the site is proposed to include the following:

- ModWash facility with one car wash tunnel

Trip generation for proposed developments is typically calculated using the Institute of Transportation Engineers' (ITE) *Trip Generation*, 11th Edition. This publication contains various Land Use Codes for varying types of land development uses. The applicable Land Use Code for the ModWash facility is Land Use Code (948) – *Automated Car Wash*. However, this Land Use Code does not contain data for the Weekday 24 Hour or the Weekday AM Peak Hour.

As requested by the Township, a trip generation count was performed at the existing Aqua Duck Carwash located across Route 114 from the proposed ModWash site. This facility

is an automatic car wash facility with two (2) wash tunnels. The Weekday 24-Hour and AM Peak Hour trips of the existing car wash are as follows:

- Existing Car Wash Weekday 24-Hour Trips: 82 Trips (42 In/40 Out)
- Existing Car Wash AM Peak Hour¹ Trips: 4 Trips (2 In/2 Out)

A summary of the 24-Hour count performed at the existing Aqua Duck Carwash located across Route 114 is included with this correspondence. This data was used for the Weekday 24-Hour and AM Peak Hour trip generation of the proposed ModWash. Please note that since the Aqua Duck facility has 2 wash bays, and the proposed ModWash will only have 1 wash bay, using this data is a conservative estimate. The trip generation of the proposed ModWash is as follows:

- Weekday 24-Hour: 82 trips (41 In/41 Out) – *based on existing car wash count; 50% In/Out Split assumed*
- AM Peak Hour: 4 trips (2 In/2 Out) – *based on existing car wash count*
- PM Peak Hour: 78 trips (39 In/39 Out) – *based on ITE Trip Generation*

It should be noted that the 78 PM Peak Hour trips projected using ITE's Trip Generation appears to be a very conservative estimate. By comparison, the PM Peak Hour trip generation of the existing Aqua Duck Carwash was 9 total trips.

Existing Use on Site

The existing site contains a 2,450 ft² Drive-In Bank. The trip generation of the existing use was determined using ITE's Trip Generation. Land Use Code (912) – *Drive-In Bank* was used. The trip generation of the existing use on site is as follows:

- Weekday 24-Hour: 246 trips (123 In/123 Out)
- AM Peak Hour: 24 trips (14 In/10 Out)
- PM Peak Hour²: 51 trips (26 In/25 Out)

Change in Trip Generation

The resultant change in trip generation was determined by subtracting the existing use trips from the proposed use trips. The change in trip generation for the redevelopment is as follows:

¹ Highest hour between 7:00 AM and 9:00 AM per standard traffic engineering methodology

² Highest hour between 4:00 PM and 6:00 PM per standard traffic engineering methodology

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- Weekday 24-Hour: -164 trips (-82 In/-82 Out)
- AM Peak Hour: -20 trips (-12 In/-8 Out)
- PM Peak Hour: +17 trips (+8 In/+9 Out)

Summary and Conclusions

The change in use is projected to result in a decrease in trips over a Weekday 24-hour period and during the AM Peak Hour. For the PM Peak Hour, there is a projected increase of 17 peak hour trips. However, as noted the PM Peak Hour trip generation projection using *Trip Generation* appears to be very conservative based on the actual data collected at the existing car wash across Route 114. Even with the conservative estimate, the projected increase (17 total trips in an hour) is negligible in traffic engineering terms. And the Weekday 24-Hour trip generation is significantly less than the Township's threshold of 250 trips per day to require a traffic impact study. It can safely be concluded that there will be negligible traffic impact resulting from the change in use.

We trust this information is submitted in proper form. If you have any questions or require additional information, please contact this office.

Yours truly,



Douglas A. Hill, P.E.
Senior Staff Engineer

DAH/dh

Enclosure: Trip Generation Count Summary – Aqua Duck Carwash located along Route 114

4074111821_trip gen summ ltr

Study Name Aqua Duck Car Wash along Route 114 In/Out

Start Date 11/17/2021

Start Time 12:00 AM

Site Code

Mechanicsburg, PA

Car Wash

Wednesday, November 17, 2021

Location SE Corner of Route 114 and Bumble Bee Hollow Rd/Kim Acres Dr

Channel Direction	Direction					
	Westbound/OUT	Eastbound/IN				
12:00 AM	0	0				
12:15 AM	0	0				
12:30 AM	0	0				
12:45 AM	0	0				
1:00 AM	0	0				
1:15 AM	0	0				
1:30 AM	0	0				
1:45 AM	0	0				
2:00 AM	0	0				
2:15 AM	0	0				
2:30 AM	0	0				
2:45 AM	0	0				
3:00 AM	0	0				
3:15 AM	0	0				
3:30 AM	0	0				
3:45 AM	0	0				
4:00 AM	0	0				
4:15 AM	0	0				
4:30 AM	0	0				
4:45 AM	0	0				
5:00 AM	0	0				
5:15 AM	0	0				
5:30 AM	0	0				
5:45 AM	0	0				
6:00 AM	0	0				
6:15 AM	0	0				
6:30 AM	0	0				
6:45 AM	0	0				
7:00 AM	0	0				
7:15 AM	0	0				
7:30 AM	1	1				
7:45 AM	0	0				
8:00 AM	0	1				
8:15 AM	1	0				
8:30 AM	0	0				
8:45 AM	0	0				
9:00 AM	0	0				
			TOTAL IN	TOTAL OUT	TOTAL TRIPS	HOUR
			1	1	2	7:00-8:00 AM
			1	2	3	7:15-8:15 AM
			2	2	4	7:30-8:30 AM
			1	1	2	7:45-8:45 AM
			1	1	2	8:00-9:00 AM

AM Peak Hour between 7:00 and 9:00 AM calculation

7:30-8:30 AM = highest peak hour

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Start Time 12:00 AM

Site Code

Mechanicsburg, PA

Car Wash

Wednesday, November 17, 2021

Location SE Corner of Route 114 and Bumble Bee Hollow Rd/Kim Acres Dr

Channel Direction	Direction							
	Westbound/OUT	Eastbound/IN						
9:15 AM	0	0						
9:30 AM	1	1						
9:45 AM	0	0						
10:00 AM	0	0						
10:15 AM	0	0						
10:30 AM	0	1						
10:45 AM	0	0						
11:00 AM	1	1						
11:15 AM	1	0						
11:30 AM	0	1						
11:45 AM	2	1						
12:00 PM	0	1						
12:15 PM	1	0						
12:30 PM	2	3						
12:45 PM	1	0						
1:00 PM	1	1						
1:15 PM	1	2						
1:30 PM	2	0						
1:45 PM	1	4						
2:00 PM	1	1						
2:15 PM	2	2						
2:30 PM	3	2						
2:45 PM	3	2						
3:00 PM	1	1						
3:15 PM	2	1						
3:30 PM	0	0						
3:45 PM	0	2						
4:00 PM	3	1	PM Peak Hour between 4:00 and 6:00 PM calculation					
4:15 PM	0	0						
4:30 PM	0	2						
4:45 PM	2	1	TOTAL IN	TOTAL OUT	TOTAL TRIPS	HOURLY		
			5	4	9		4:00-5:00 PM	
5:00 PM	1	0	3	3	6		4:15-5:15 PM	
5:15 PM	1	1	4	4	8		4:30-5:30 PM	
5:30 PM	1	1	5	3	8		4:45-5:45 PM	
5:45 PM	1	1	4	3	7		5:00-6:00 PM	
6:00 PM	1	0						
6:15 PM	0	0						

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Location SE Corner of Route 114 and Bumble Bee Hollow Rd/Kim Acres Dr

Channel Direction	Direction	Direction
	Westbound/OUT	Eastbound/IN
6:30 PM	0	0
6:45 PM	0	0
7:00 PM	0	0
7:15 PM	0	0
7:30 PM	1	1
7:45 PM	0	0
8:00 PM	0	0
8:15 PM	0	0
8:30 PM	0	0
8:45 PM	0	0
9:00 PM	1	1
9:15 PM	1	1
9:30 PM	0	0
9:45 PM	0	0
10:00 PM	0	0
10:15 PM	0	0
10:30 PM	1	1
10:45 PM	0	0
11:00 PM	0	0
11:15 PM	0	0
11:30 PM	0	0
11:45 PM	0	0
TOTALS	42	40