May 23, 2022

Mr. Mike Buescher
MB Engineering, Inc.
606 Ryan Drive
Energy, IL 62933

RE: Car Wash Trip Generation Memo – Lee's Summit, Missouri

Dear Mr. Buescher,

As requested, Priority Engineers, Inc. has estimated the trip generation for the proposed car wash to be located at 210 MO 150 Highway in Lee's Summit, Missouri.

The vehicle trips generated by proposed use were estimated using the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition. Land Use 948 – Automated Car Wash, was selected.

The trip generation estimated for the development is shown below in Table 1.

Table 1: Trip Generation								
Land Use	Intensity	ITE Code	PM Peak			Saturday Peak Of the Generator		
			Total	In	Out	Total	In	Out
Automated Car Wash	1 tunnel	948	78	39	39	41	19	22

An automated car wash with a single tunnel generates 78 PM Peak Hour trips. AM Peak Hour and Daily data are not provided for this land use, but this land use includes Saturday Peak Hour of the Generator data that lower than the PM Peak Hour of the Adjacent Street. The ITE land use definition and data plots are attached to this memo.

The proposed site is to be located at the northeast corner of Hollywood Drive and Summitcrest Drive. To the south of the proposed site, a Whataburger restaurant has been approved. A traffic impact study was completed by CBB Transportation Engineers+Planners in February of 2022.   This study recommends a northbound left turn lane be considered at the intersection of Market Street and Summitcrest Drive and that minor signal timing adjustments at the intersection of MO 150 and Market Street be considered.

The proposed site will have two 25' wide drives onto Summitcrest Drive. These drives have been aligned with the drives of the proposed Whataburger restaurant. The westernmost drive is located approximately 65' (edge of pavement to edge of pavement) from Hollywood Drive. The easternmost

drive is located approximately 165' from the westernmost drive and approximately 65' from the existing drive to the east. These distances exceed the 50' throat depth required for a local roadway. Internally, each drive has approximately 80' of throat depth.

Please let me know if you have any questions or require additional information. I can be reached at (816) 738-4400.

Sincerely,

PRIORITY ENGINEERS, INC.

Kristin L. Skinner, P.E., PTOE

Land Use: 948
Automated Car Wash

Description

An automated car wash is a facility that allows for the mechanical cleaning of the exterior of vehicles. Manual cleaning service may also be available at the facility. Self-service car wash (Land Use 947) and car wash and detail center (Land Use 949) are related uses.

Additional Data

The sites were surveyed in the 1990s and the 2000s in New Jersey, New York, and Washington.

Source Numbers

552, 555, 585, 599, 954

Automated Car Wash
(948)

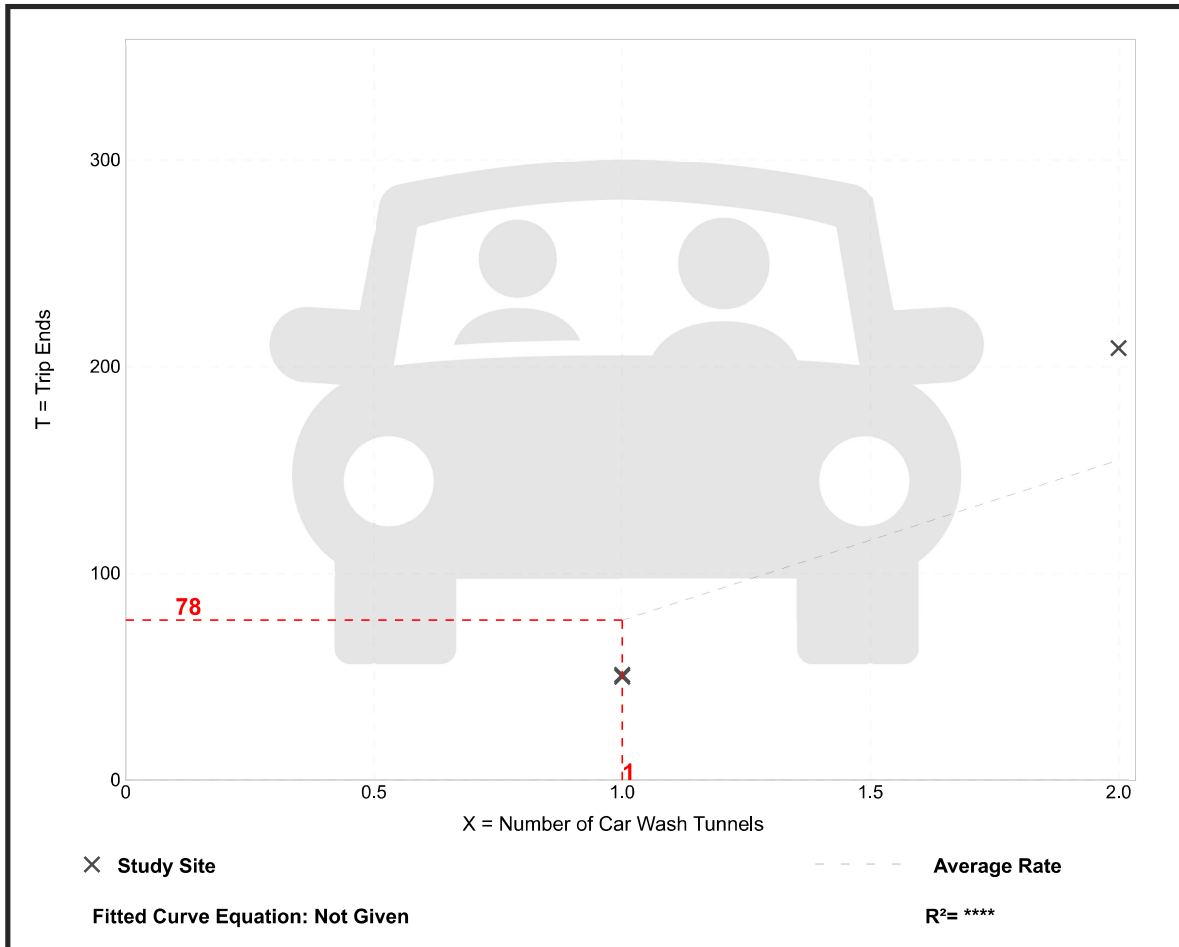|	
Vehicle Trip Ends vs:	**Car Wash Tunnels**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	3
Avg. Num. of Car Wash Tunnels:	1
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Car Wash Tunnel

Average Rate	Range of Rates	Standard Deviation
77.50	50.00 - 104.50	33.07

Data Plot and Equation

Caution – Small Sample Size

X Study Site

- - - Average Rate

Fitted Curve Equation: Not Given

R²= ****

Trip Gen Manual, 11th Edition   ●   Institute of Transportation Engineers

Automated Car Wash
(948)

Vehicle Trip Ends vs:	**Car Wash Tunnels**
On a:	**Saturday, Peak Hour of Generator**

Setting/Location:	**General Urban/Suburban**
Number of Studies:	1
Avg. Num. of Car Wash Tunnels:	1
Directional Distribution:	46% entering, 54% exiting

Vehicle Trip Generation per Car Wash Tunnel

Average Rate	Range of Rates	Standard Deviation
41.00	41.00 - 41.00	*

Data Plot and Equation

Caution – Small Sample Size

X   **Study Site**   – – – –   **Average Rate**

Fitted Curve Equation: Not Given R^2= ****

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