

MEMORANDUM

TO: Mr. James Canning
Co-Founder & Managing Partner
Garnett Reynolds Holdings, LLC
223 Highland Road
Rye, NY 10580

FROM: Mr. Jeffrey S. Dirk, P.E., PTOE, FITE 
Managing Partner
Vanasse & Associates, Inc.
35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066
(978) 269-6830
jdirk@rdva.com

Professional Engineer in CT, MA, ME, NH, RI, and VA

DATE: March 3, 2022

RE: 9240

SUBJECT: Traffic Impact and Access Study
Proposed Washville Car Wash – 1300-1310 Oaklawn Avenue (Route 5)
Cranston, Rhode Island

Vanasse & Associates, Inc. (VAI) has prepared a Traffic Impact and Access Study (TIAS) in order to determine the traffic characteristics of the proposed Washville Car Wash to be located at 1300-1310 Oaklawn Avenue (Route 5) in Cranston, Rhode Island (hereafter referred to as the “Project”). This assessment has been prepared in order to assess the anticipated traffic characteristics of the Project and the associated impacts on the transportation infrastructure.

Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)¹ for a similar use, the Project is expected to generate approximately 1,522 vehicle trips on an average weekday and 1,116 vehicle trips on Saturday (both two-way volumes over the operational day of the Project), with 78 vehicle trips expected during the weekday evening peak-hour and 128 vehicle trips expected during the Saturday peak-hour, a portion of which is expected to be derived from existing traffic that is traveling along the adjacent roadways for other purposes that will also patronize the Project before continuing to the original intended destination (i.e., pass-by trips);
2. When distributed to Oaklawn Avenue over the course of the respective peak hours, the Project would not be expected to result in a significant increase in motorist delays or vehicle queuing over conditions without the Project when considered in the context of the 16,900 vehicles per day that traverse Oaklawn Avenue² and the prior uses that occupied the Project site (medical office and a drug store);
3. Elimination of a driveway along Oaklawn Avenue and the installation of curbing along Bateman Avenue to restrict access to the Project site and define the edge of the traveled-way will result in an improvement in safety for all roadway users; and

¹*Trip Generation*, 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.

²RIDOT Traffic Flow Map, Short-Term Counts, 2016.



4. The vehicle queue storage is provided within the Project site (approximately 20 to 22 vehicles) should be sufficient to accommodate the anticipated vehicle queue under typical peak conditions, with on-site staff present to monitor operations during the peak wash season (winter).

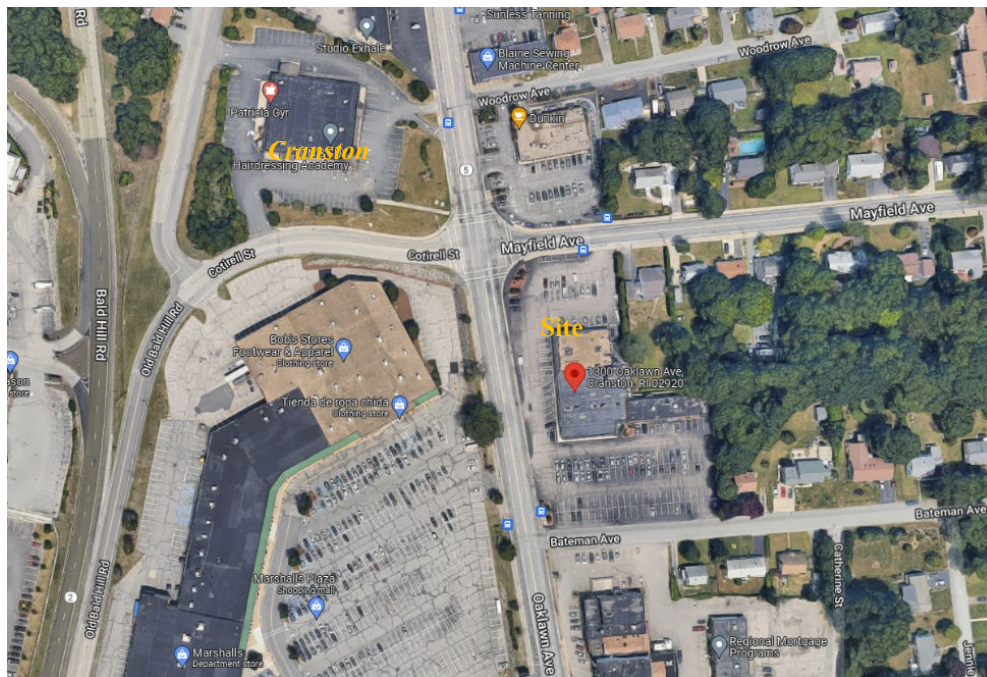
In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with the implementation of the recommendations defined herein.

The following details our assessment of the Project.

PROJECT DESCRIPTION

The Project will entail the construction of a 4,201 square foot (sf), single tunnel, automatic car wash with 24 parking spaces that will include 20 vacuum positions. The Project will be situated on 1.20± acres of land that will be subdivided from a larger parcel of land located at 1300-1310 Oaklawn Avenue (Route 5) that is bounded by residential and commercial properties to the north; Bateman Avenue to the south; residential properties to the east; and Oaklawn Avenue to the west.

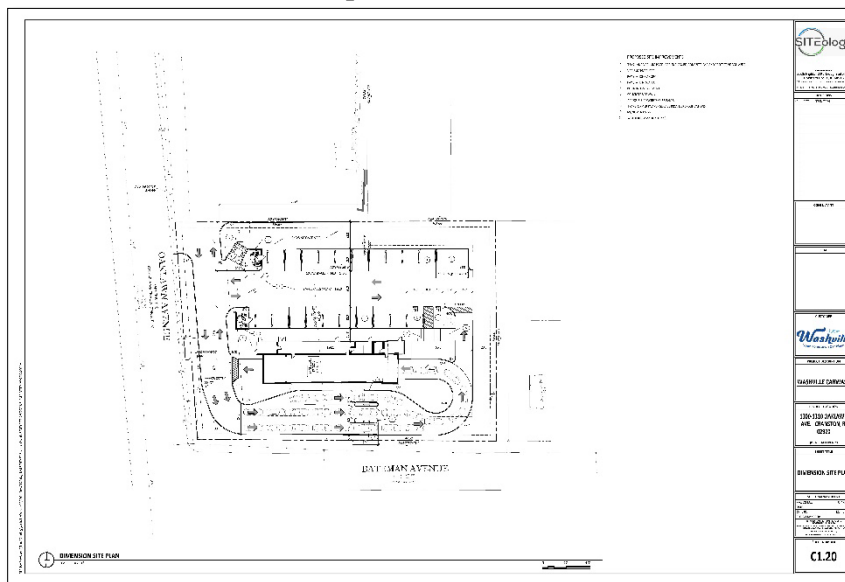
The Project site is currently occupied by a vacant commercial building and associated parking area and appurtenances that will be removed to accommodate the Project, and includes two (2) full access driveways along Oaklawn Avenue that are situated approximately 75 feet and 160 feet north of Bateman Avenue, respectively, and one (1) full access driveway along Mayfield Avenue that is located approximately 140 feet east of Oaklawn Avenue. The entirety of the Project site frontage along Bateman Avenue is flush with the roadway (i.e., no curbing is present to separate the parking field from the traveled-way).



Imagery ©2022 Google



Proposed Site Plan



Source: SITEology, February 2022.

Primary access to the Project site will be provided by way of the existing full access driveway that intersects the east side of Oaklawn Avenue approximately 160 feet north of Bateman Avenue; the remaining existing driveway on Oaklawn Avenue that serves the Project site would be closed in conjunction with the Project and curbing will be installed along Bateman Avenue in order to define the edge of the traveled-way, eliminating access from Bateman Avenue. Secondary access to the Project site will be provided by way of an internal connection to the balance of the property to the north of the parcel that will contain the Project. This access configuration is consistent with the Rhode Island Department of Transportation's (RIDOTs) plan for the reconstruction of Oaklawn Avenue.

PROJECT-GENERATED TRAFFIC

In order to determine the traffic characteristics of the Project, trip-generation methodologies established by the ITE³ were used. ITE Land Use Code (LUC) 948, *Automated Car Wash*, was used to develop the traffic characteristics of the Project during the weekday evening and Saturday peak hours, with trip rates from LUC 947, *Self-Service Car Wash*, used to establish trip rates on a proportionate basis to develop the average weekday and Saturday traffic characteristics of the Project. Traffic volumes generated by the Project during the weekday morning peak-hour will be lower than those exited during the weekday evening and Saturday peak hours. The resulting trip-generation calculations for the Project are summarized in Table 1.

³Ibid 1.

Table 1
TRIP GENERATION SUMMARY

Time Period	Vehicle Trips		
	Entering	Exiting	Total
<i>Average Weekday:</i>	761	761	1,522
<i>Weekday Evening Peak-Hour:</i>	39	39	78
<i>Saturday:</i>	558	558	1,116
<i>Saturday Peak-Hour:</i>	64	64	128

Project-Generated Traffic Volume Summary

As can be seen in Table 1, the Project is expected to generate approximately 1,522 vehicle trips on an average weekday and 1,116 vehicle trips on Saturday (both two-way volumes over the operational day of the Project), with 78 vehicle trips (39 vehicles entering and 39 exiting) expected during the weekday evening peak-hour and 128 vehicle trips (64 vehicles entering and 64 exiting) expected during the Saturday peak-hour.

It is likely that some portion of the trips that will be generated by the Project will be derived from existing traffic that is traveling along the adjacent roadways for other purposes that will also patronize the Project before continuing to the original intended destination. These trips are known as “pass-by” trips and will not constitute new traffic to the area as a result of the Project.

SITE ACCESS AND CIRCULATION

As described previously, primary access to the Project site will be provided by way of the existing full access driveway that intersects the east side of Oaklawn Avenue approximately 160 feet north of Bateman Avenue; the remaining existing driveway on Oaklawn Avenue that serves the Project site and the access from Bateman Avenue will be closed in conjunction with the Project. Secondary access to the Project site will be provided by way of an internal connection to the balance of the property to the north of the parcel that will contain the Project.

Upon entering the Project site, vehicles will form two and then three lanes before merging into a single lane to access the wash tunnel, or can proceed to the vacuum area, where 20 vacuum positions will be provided. Circulation for the wash tunnel will be in a one-way counter-clockwise direction. Vehicle queue storage is provided within the Project site for approximately 20 to 22 vehicles measured from the entrance to the wash tunnel and the end of the queuing lane. This queue storage should be sufficient to accommodate the anticipated vehicle queue under typical peak conditions. On-site staff will be present to monitor operations during the peak wash season (winter) and will manage traffic flow and circulation within the Project site when necessary. The presence of an extended vehicle queue within the Project site serves as its own limiting feature as customers will often return at another time when wash wait times are much less.



SUMMARY

VAI has prepared a trip-generation assessment order to determine the traffic characteristics of the proposed Washville Car Wash to be located at 1300-1310 Oaklawn Avenue (Route 5) in Cranston, Rhode Island. This assessment has been prepared in order to assess the anticipated traffic characteristics of the Project and the associated impacts on the transportation infrastructure. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the ITE⁴ for a similar use, the Project is expected to generate approximately 1,522 vehicle trips on an average weekday and 1,116 vehicle trips on Saturday (both two-way volumes over the operational day of the Project), with 78 vehicle trips expected during the weekday evening peak-hour and 128 vehicle trips expected during the Saturday peak-hour, a portion of which is expected to be derived from existing traffic that is traveling along the adjacent roadways for other purposes that will also patronize the Project before continuing to the original intended destination (i.e., pass-by trips);
2. When distributed to Oaklawn Avenue over the course of the respective peak hours, the Project would not be expected to result in a significant increase in motorist delays or vehicle queuing over conditions without the Project when considered in the context of the 16,900 vehicles per day that traverse Oaklawn Avenue and the prior uses that occupied the Project site (medical office and a drug store);
3. Elimination of a driveway along Oaklawn Avenue and the installation of curbing along Bateman Avenue to restrict access to the Project site and define the edge of the traveled-way will result in an improvement in safety for all roadway users; and
4. The vehicle queue storage is provided within the Project site (approximately 20 to 22 vehicles) should be sufficient to accommodate the anticipated vehicle queue under typical peak conditions, with on-site staff present to monitor operations during the peak wash season (winter).

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with the implementation of the following recommendation, many of which are reflected on the Site Plans:

- The Project site driveways should be a minimum of 24 feet in width and designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle.
- Where perpendicular parking is proposed, the drive aisle behind the parking should be a minimum of 23-feet in order to facilitate parking maneuvers.
- Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided at all pedestrian crossings where a sidewalk is present, including for crossing the Project site driveways, or the driveways should be designed such that the sidewalk along Oaklawn Avenue is flush with (i.e., crosses) the driveway.
- All signs and pavement markings to be installed within the Project site should conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).⁵

⁴Ibid 1.

⁵*Manual on Uniform Traffic Control Devices* (MUTCD); Federal Highway Administration; Washington, D.C.; 2009.



- Signs and landscaping to be installed as a part of the Project within the intersection sight triangle areas should be designed and maintained so as not to restrict lines of sight.
- Snow accumulations (windrows) within sight triangle areas should be promptly removed where such accumulations would impede sight lines.

cc: File

