

TRAFFIC ENGINEERING EVALUATION

**CAR WASH AND SERVICE STATION
BLOCK 30202, LOT 1
119 MERRITT STREET
CITY OF JERSEY CITY
HUDSON COUNTY, NEW JERSEY**

Prepared for:

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INTRODUCTION

The purpose of this Traffic Engineering Evaluation is to assess the traffic impacts associated with the development of the subject property known as Block 30202, Lot 1 located at 119 Merritt Street, Jersey City, Hudson County, NJ. The site is currently used for vehicle storage.

Project Description

The proposal is to construct a car wash with one tunnel and a quick lubrication vehicle shop with two service bays and repurpose the existing two-story building for office and customer waiting room. The subject site is proposed with one entrance-only driveway on Merritt Street and one exit-only driveway on Avenue C. The subject site has approximately 450 feet of frontage on Merritt Street and 50 feet of frontage on Avenue C.

EXISTING CONDITIONS

The site is located within one lot that has frontage on both Merritt Street and Avenue C. The site is currently used for vehicle storage. The surrounding properties generally consist of a mix of commercial and residential uses. The adjacent roadways serving the site are described as follows:

Avenue C is a local street under the jurisdiction of the City of Jersey City. Near the subject site, there are sidewalks on both sides of the street and parking is prohibited on both sides of the street. Avenue C traverses the length of Bayonne connecting Merritt Street in the north to West 1st Street in the south. The posted or statutory speed limit is 25 MPH.

Merritt Street is a local street under the jurisdiction of the City of Jersey City. Near the subject site, there are sidewalks on the north side of the street and parking is permitted on the north side of the street. Merritt Street connects Garfield Avenue in the east with Avenue C in the west. The posted or statutory speed limit is 25 MPH.

The “T” intersection of Avenue C with Merritt Street is controlled by an All-Way STOP. There is a crosswalk with curb ramps across Avenue C. The “T” intersection of Merritt Street with Old Bergen Avenue/Ocean Avenue and the intersection of Avenue C with the Route 440 ramps are controlled by a traffic signal.

The Let’s Ride JC Bicycle Master Plan shows bicycle facilities (bike lanes, protected bike lanes, or shared use lanes) on Merritt Street, Avenue C, Old Bergen Road, Ocean Avenue, and Garfield Avenue.

Mass Transportation Options

Approximately 400 feet from the site there are bus stops on Old Bergen Road at Merritt Street for the number 81 bus route and bus stops on Merritt Street at Ocean Avenue for the number 6 bus route. With bus service and residents in the area, some employees may use mass transportation or walk or ride a bicycle to work.

DEVELOPMENT PROPOSAL

The proposed development consists of a car wash with one tunnel and a quick lubrication vehicle shop with two service bays. There are six on-site parking spaces proposed. Proposed access to the site would be provided by one, entrance-only driveway on Merritt Street and one exit-only driveway on Avenue C. The proposed two service bays will accommodate one car each. The two-story building will accommodate a customer waiting area and restroom on the first floor and office space on the second floor.

Trip Generation

According to the Trip Generation Manual, 10th Edition published by the Institute of Transportation Engineers, “an automated car wash is a facility that allows for the mechanical cleaning of the exterior of vehicles. Manual cleaning services may also be available at these facilities” and “a quick lubrication vehicle shop is a business where the primary activity is to perform oil change services for vehicles. Other ancillary services provided may include preventative maintenance, such as fluid and filter changes. Automobile repair service is generally not provided.” Trip generation for the proposed development was calculated using the current Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition. Table 1 - Trip Generation Summary, tabulates the trip generation for the proposed Automated Car Wash and Quick Lube Vehicle Shop. As shown in Table 1, the proposed automated car wash would generate 39 vehicle trips entering and exiting during the weekday PM peak hour and 21 vehicle trips entering and exiting during the Saturday peak hour. The Quick Lube Vehicle Shop would generate 5 vehicle trips entering and 4 vehicle trips exiting during the weekday PM peak hour and during the Saturday peak hour. On average, this proposed project is expected to generate less than 2 new vehicle trips entering or exiting the site every minute during the weekday PM peak hour, and less than 1 vehicle trip entering or exiting every minute during the Saturday peak hour.

According to Transportation Impact Analysis for Site Development, published by the Institute of Transportation Engineers (ITE), an increase of less than 100 vehicle trips would not change the level of service of the local street network nor appreciably increase the volume-to-capacity ratio of an intersection approach. Also, NJDOT Access Management Code considers a significant increase in trips greater than 100 peak hour trips AND greater than a 10 percent increase in previously anticipated daily trips. Therefore, the proposed development is not anticipated to significantly impact the operations of the local streets.

SITE PLAN REVIEW

There is one-way circulation throughout the site with one entrance-only driveway on Merritt Street and one exit-only driveway to Avenue C. The site driveways are proposed at 10-feet wide at the street. The 15-foot wide drive aisle would adequately serve the one-way vehicle circulation. Employees of the Quick Lube Vehicle Shop would maneuver the vehicles in and out of the service bays.

Garbage and recycling would be collected within the refuse storage area and brought to the curb on collection days.

The parking requirement is 1 parking space per 500 square feet of gross floor area for the Office or 2 parking spaces, plus 3 parking spaces for the Service Station, where 6 parking spaces are proposed. The site is proposed with 6, angled parking spaces for customers and employees.

The car wash is proposed to accommodate 15 cars in the vehicle queue prior to the tunnel entrance and 3 cars in the vehicle queue after the tunnel exit. With a capacity of approximately 40 cars per hour or 1.5 minutes per car, it would take over 20 minutes to service all 15 vehicles in the car wash queue. Since a car wash is a convenience-type use, it is unlikely that a customer would wait in a vehicle queue that takes longer than 20 minutes. There is good visibility of the overall site from Merritt Street. Therefore, the vehicle storage length of 15 cars in queue for the car wash would be adequate to accommodate the peak demand of the proposed car wash without impacting the operation of the surrounding streets. The traffic signals at the adjacent intersections provide gaps in the traffic stream, allowing traffic to exit onto Avenue C.

Adequate sight distance is provided from the existing driveway on Avenue C. The design speed of Avenue C is 30 miles per hour thus resulting in a recommended stopping sight distance of 200 feet, in accordance with A Policy on Geometric Design of Highways and Streets (AASHTO). The available sight distance is over 200 feet in each direction from the proposed site driveway.

CONCLUSIONS

Based upon our trip generation evaluation, it is our professional opinion that the proposed Automated Car Wash and Quick Lubrication Vehicle Shop would not generate a significant amount of vehicle trips and would not have a significant impact on traffic conditions during the weekday PM peak period and the Saturday midday peak period.

With 1 parking space required per 500 square feet of gross floor area (2 spaces required) for the office space plus 3 parking spaces required for the Service Station for a total of 5 parking spaces required, where the proposed 6 parking spaces would adequately serve the needs of the project. The site plan proposes adequate parking, circulation, and vehicle queuing for customers and employees of this project.

In conclusion, the proposed development of this project would have no significant impact on the traffic operations of area roadways and intersections and would not have a significant impact on local parking conditions.

The foregoing is a true representation of my findings.



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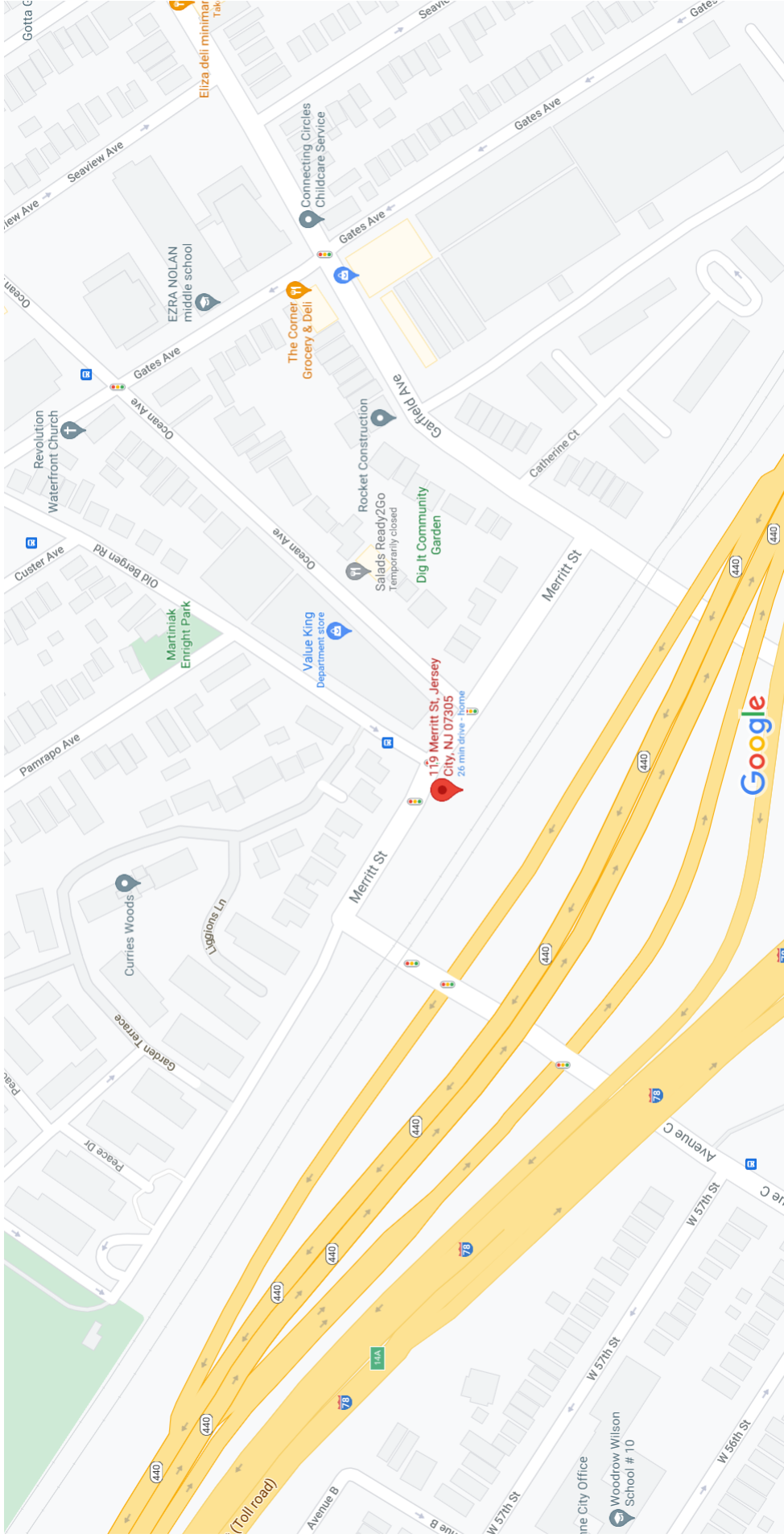
TABLE 1 - TRIP GENERATION SUMMARY

Proposed Car Wash - 119 Merritt Street, Jersey City, Hudson County, NJ

CODE	LAND USE	AMOUNT	WEEKDAY						SATURDAY PEAK HOUR		
			PM PEAK HOUR IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
948	Automated Car Wash (Average Rates)	1 tunnel	39	39	78	21	21	42			
941	Quick Lube Vehicle Shop (Peak Adjacent Street)	2 bays	5	4	9	5	4	9			
TOTAL SITE GENERATED VEHICLE TRIPS			44	43	87	26	25	51			

SOURCE: Trip Generation Manual, 10th Edition, Institute of Transportation Engineers (ITE)

Google Maps 119 Merritt St



Map data ©2021 Google 100 ft