

McDonough & Rea Associates, Inc.

Traffic and Transportation Consulting

Kevin P. McDonough (1953-1994)
John H. Rea, P.E.
Jay S. Troutman, Jr., P.E.
Jonathan P. Szap, P.E.
Scott T. Kennel

February 21, 2025

Sparta Township Council
65 Main Street
Sparta Township, NJ 07871

Re: Analysis of Existing Traffic Conditions & Current Zoning Traffic Rates
Route 15 Corridor Between Houses Corner Road & White Lake Road
Sparta Township, Sussex County, NJ
MRA File No. 25-113

Dear Council Members:

McDonough & Rea Associates (MRA) has prepared the following traffic study to assess current traffic operations along the Route 15 corridor (between Houses Corner Road and White Lake Road) in connection with potential additional traffic impact from land uses currently permitted in the Planned Commercial Economic Development (PCED) Zone District. The approximate location of the study area is shown in Figure 1, Site Location Map (attached).

SCOPE OF STUDY

Our work included completion of the following tasks:

1. Field investigations to establish existing traffic and roadway conditions in the study area.
2. Observations and data collection during weekday and weekend peak traffic periods.
3. A review of prior traffic studies submitted for development applications in the area.
4. Research to obtain existing traffic volume data from the New Jersey Department of Transportation (NJDOT).
5. A review of vehicle crash data and traffic reports prepared by the Sparta Township Police Department.

Please reply to:

- 1431 Lakewood Road, Suite C, Manasquan, NJ 08736 • (732) 528-7076 • Fax (732) 528-6673
 105 Elm Street, Lower Level, Westfield, NJ 07090 • (908) 789-7180 • Fax (908) 789-7181



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6. Analysis of trip generation rates for currently permitted land uses in the PCED zone district.

EXISTING TRAFFIC AND ROADWAY CONDITIONS

Route 15 (Lafayette Road) is a two-lane, north/south New Jersey state highway with a single travel lane in each direction and a posted speed limit of 50 MPH in the study area. Traffic signals and turning lanes are provided at major intersections including Houses Corner/Limecrest Road, North Village Boulevard and White Lake Road/Wilson Drive. The existing traffic signal at North Village Boulevard includes a northbound deceleration and acceleration lane that was installed to accommodate turning movements at the North Village mixed use development.

Route 15 and North Village Boulevard is a traffic signal-controlled T-shaped intersection with North Village Boulevard approaching from the east as the stem of the T. The northbound Route 15 approach provides an exclusive thru lane and exclusive right-turn lane (two-lane approach). The southbound Route 15 approach provides an exclusive thru lane and an exclusive left-turn lane (two-lane approach). The westbound North Village Boulevard approach provides an exclusive left-turn lane and an exclusive right-turn lane (two-lane approach). The traffic signal operates on a variable cycle length with three phases including a southbound leading green phase, Route 15 right-of-way phase and a phase for North Village Boulevard exiting traffic.

Route 15 and White Lake Road/Wilson Drive is a traffic signal-controlled four-way intersection with White Lake Road approaching from the east and Wilson Drive approaching from the west. All four approaches to the intersection provide an exclusive left-turn lane and a shared thru/right-turn lane (two-lane approaches). The traffic signal operates on a variable cycle length with three phases including a Route 15 right-of-way phase, a protected plus permitted phase for side street left turns and a side street right-of-way phase.

Route 15 and Houses Corner/Limecrest Road is a traffic signal-controlled four-way intersection with Houses Corner Road approaching from the east and Limecrest Road approaching from the west. All four approaches to the intersection provide an exclusive left-turn lane and a shared thru/right-turn lane (two-lane approaches). The traffic signal operates on a variable cycle length with



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two phases including a Route 15 right-of-way phase and a side street right-of-way phase.

EXISTING 2025 TRAFFIC VOLUMES

Existing 2025 weekday PM peak hour traffic volumes were established through analysis of traffic data provided in an August 2021 traffic study prepared by Kimley Horn, NJDOT traffic count data and turning movement count data collected by MRA. Existing weekday PM peak hour traffic volumes are shown in Figure 2 (attached).

EXISTING TRAFFIC FLOW OBSERVATIONS

MRA conducted site visits and observations of existing traffic flow conditions along Route 15 at the traffic signal-controlled intersections with Houses Corner/Limecrest Road, North Village Boulevard and White Lake Road/Wilson Drive on Saturday February 15 and Wednesday February 19, 2025. The following conditions were observed:

1. The existing traffic signals are set up to favor the traffic flow along Route 15 at the expense of traffic approaching Route 15 from the side streets. This is most evident at the North Village Boulevard intersection where traffic on North Village Boulevard experiences long delays with vehicle queues that extend eastward through the Cypress Lane intersection. The existing westbound left-turn vehicle queue on North Village Boulevard (approaching Route 15) exceeds the capacity of the existing left-turn lane and traffic stacks along Cypress Lane and North Village Boulevard (east of Cypress Lane) during the weekday PM and Saturday peak hours.
2. The westbound left-turn from North Village Boulevard to Route 15 southbound operates at level of service "E" during peak hours. This existing condition does not satisfy the level of service standards of Sparta Township and results in unfavorable traffic progression within the existing North Village site.
3. During the weekday PM peak hour, the northbound Route 15 traffic demand exceeds available capacity at the White Lake Road/Wilson Drive intersection resulting in level of service "F" conditions for this movement. This creates Route 15 northbound vehicle queues that extend beyond the



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North Village Boulevard intersection. When this occurs, northbound Route 15 traffic and westbound right-turn traffic at North Village Boulevard are unable to proceed through the intersection. Some drivers at the North Village Boulevard intersection become impatient and use the northbound right-turn lane as a thru lane, resulting in an unsafe condition with drivers passing on the right and attempting to merge into the stopped traffic.

SPARTA TOWNSHIP POLICE TRAFFIC STUDY

The Sparta Township Police Department published a Phase I Traffic Study in July 2024 and a Phase II Traffic Study on January 15 2025 that summarizes vehicle crash data for the entire Township. Crash data for calendar years 2021 through 2023 and January 1 to June 15 2024 was analyzed.

In the Phase I Traffic Study it is noted that for each year, the most crashes occurred on the Lafayette Road section of State Route 15. In addition, the highest number of intersection crashes occurred at Route 15 and North Village Boulevard for the years 2022 and 2023.

TRIP GENERATION RATES

Trip generation rates for currently permitted and conditional land uses in the PCED zone district were analyzed based on data published by the Institute of Transportation Engineers (ITE) in the "Trip Generation" manual, 11th Edition. The following is a summary of land uses listed in the ordinance along with the corresponding ITE land use and weekday PM peak hour trip generation rate that was used to determine the traffic impact:

ORDINANCE LAND USES AND TRIP GENERATION RATES

<u>Ordinance Land Use</u>	<u>ITE or NJDOT Land Use</u>		<u>Weekday PM Peak Hour Trip Rate</u>
	<u>Code</u>	<u>Name</u>	
Indoor Theatres	445	Movie Theater	6.17 per 1,000 SF
Banquet Facilities	W09	Banquet Hall	0.30 per seat
Agricultural	818	Nursery (Wholesale)	5.24 per 1,000 SF
	818	Nursery (Wholesale)	0.36 per employee
	818	Nursery (Wholesale)	0.36 per acre
	Y15	Farm Stand/Market	38 per facility



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Science & Research Development Labs	760	Research & Development Center	0.98 per 1,000 SF
Light Industrial	110	General Light Industrial	0.65 per 1,000 SF
Microbreweries	975	Drinking Place	11.36 per 1,000 SF
Indoor Recreational, Health Clubs, Basketball	433	Batting Cages	2.22 per 1,000 SF
	434	Rock Climbing Gym	1.64 per 1,000 SF
	435	Multipurpose Recreational Facility	3.58 per 1,000 SF
	492	Health/Fitness Club	3.45 per 1,000 SF
	493	Athletic Club	6.29 per 1,000 SF
	495	Recreational Community Center	2.50 per 1,000 SF
Outdoor Recreation	411	Public Park	0.11 per acre
Warehouses	150	Warehousing	0.18 per 1,000 SF
Multi-Tenant Professional Buildings	710	General Office Bldg.	1.44 per 1,000 SF
	712	Small Office Bldg.	2.16 per 1,000 SF
	714	Corp. HQ Bldg.	1.30 per 1,000 SF
	720	Medical Office Bldg.	3.93 per 1,000 SF
Restaurants (Quality)	931	Fine Dining Restaurant	7.80 per 1,000 SF
Banks	911	Walk-In Bank	12.13 per 1,000 SF
	912	Drive-In Bank	21.01 per 1,000 SF
Churches	560	Church	0.49 per 1,000 SF
Drive-In Restaurants	934	Fast Food Restaurant with Drive-Thru Window	33.03 per 1,000 SF
Restaurants with Outdoor Eating	930	Fast Casual	12.55 per 1,000 SF
	931	Fine Dining	7.80 per 1,000 SF
Miniature Golf/Golfing Ranges	430	Golf Course	0.28 per acre
	431	Mini Golf Course	0.33 per hole
	432	Golf Driving Range	1.25 per tee



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FINDINGS

Based on the analysis and data contained in this report, MRA makes the following findings for consideration by the Sparta Township Council:

1. Existing traffic demand along the two-lane section of Route 15 exceeds available capacity during peak hours.
2. The lack of traffic capacity along Route 15 in combination with land uses that have high trip generation rates is creating traffic backups and delays at the intersection of North Village Boulevard and Cypress Lane within the existing North Village development.
3. Existing traffic congestion is encouraging unsafe driver behavior resulting in a high number of vehicle crashes along the Route 15 corridor and at the North Village Boulevard intersection.
4. Many of the currently permitted and conditional land uses in the PCED zone have high trip generation rates that will further contribute to the existing traffic capacity and safety issues.

Please review this analysis and contact me with any questions.

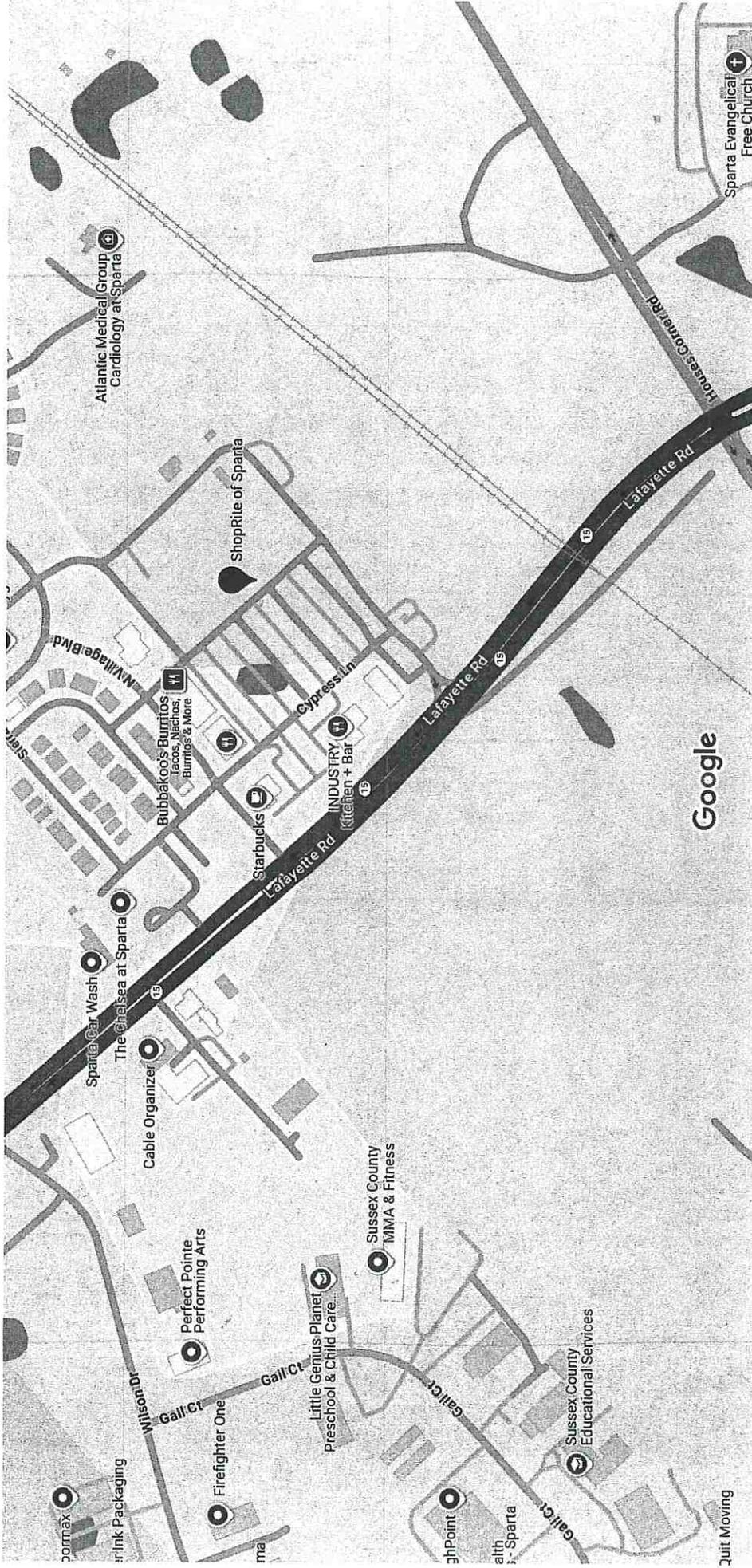
Very truly yours,

Jay S. Troutman, Jr., PE

Attachments

ShopRite of Sparta

Figure 1, Site Location Map



Map data ©2025 Google 200 ft



SUBJECT: ROUTE NJ 15, SPARTA TOWNSHIP, SUSSEX COUNTY, NJ

EXISTING 2025 WEEKDAY PM PEAK HOUR TRAFFIC VOLUMES

