3002-26

Multi-Way Stop Warrant Analysis

Intersection of Woodland Avenue and Redwood Avenue

Township of West Orange, Essex County, New Jersey



Prepared for:

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Introduction

The Township of West Orange has requested that a multi-way stop warrant analysis be performed for the intersection of Woodland Avenue and Redwood Avenue located in Township of West Orange, Essex County, New Jersey. This report has been prepared to review applicable multi-way stop warrant criteria and to determine whether the installation of a multi-way stop is warranted based on current MUTCD guidelines. The study intersection can be seen in **Figure 1** below.

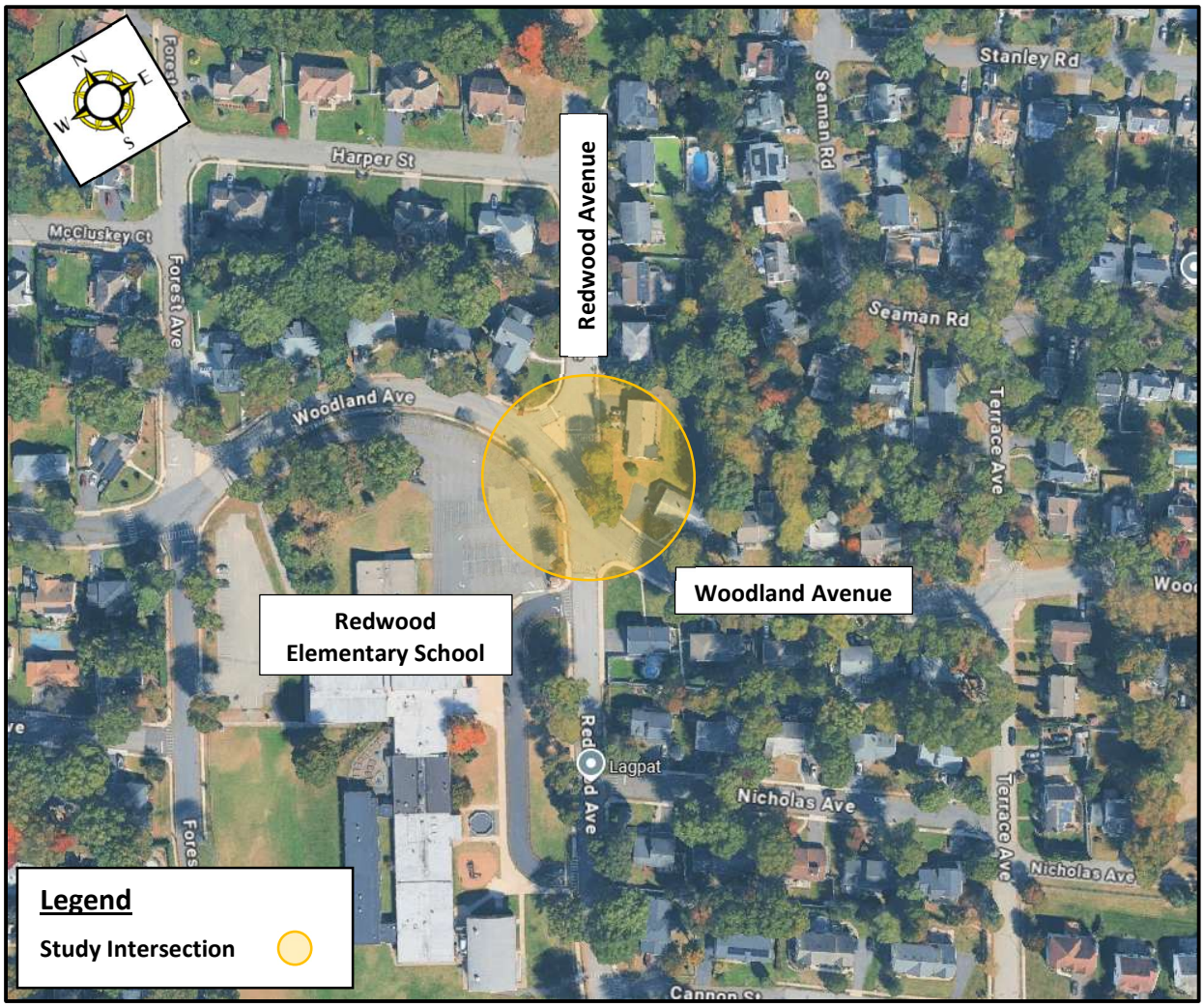


Figure 1: Study Intersection Map

Roadway Characteristics

Woodland Avenue is classified as an Urban Major Collector roadway with a general east-west orientation under the jurisdiction of the Township of West Orange. The roadway provides a two-lane undivided section. On-street parking is permitted along the south side of Woodland Avenue on the eastbound approach to the Woodland Avenue/Terrace Avenue intersection. West of the intersection, parking is restricted along both sides of Woodland Avenue. The speed limit is posted at 25 MPH within the study area, except for a school speed limit of 20 MPH from 8:00 AM to 10:00 AM and 3:00 PM to 5:00 PM on weekdays from Stevens Terrace to Terrace Avenue. The existing land uses along Woodland Avenue in this section consist of an elementary school, a senior residential facility, a childcare center, a place of worship, and residential homes.

Redwood Avenue is classified as an Urban Local roadway with a general north-south orientation under the jurisdiction of the Township of West Orange. The roadway provides a two-lane undivided section with parking permitted along the east side of Redwood Avenue. The speed limit is posted at 25 MPH within the study area, except for a school speed limit of 20 MPH from 8:00 AM to 10:00 AM and 3:00 PM to 5:00 PM on weekdays from Ellis Street to Woodland Avenue The existing land uses along Redwood Avenue in this section consist of an elementary school and residential homes.

Traffic Data Collection

Turning Movement Counts (TMCs) were obtained on Thursday, September 24, 2026, between the hours of 6:00 AM to 6:00 PM at the following intersection:

1. Woodland Avenue and Redwood Avenue

We note that the weather on the date of the data collection was fair and schools, including the nearby elementary school, were in regular session. Peak hours were observed to be from 8:00 AM to 9:00 AM and 4:00 PM to 5:00 PM, with a total of 411 vehicles and 14 pedestrian crossings recorded during the weekday morning peak hour and a total of 398 vehicles and 2 pedestrian crossings recorded during the weekday evening peak hour. All supporting traffic count data sheets can be found in **Appendix B**.

All-Way Stop Warrant Analysis

The all-way stop warrant criteria identified in the Manual on Uniform Traffic Control Devices (MUTCD), 2023 Edition was reviewed to determine the applicability of all-way stop control at the intersection of Woodland Avenue and Redwood Avenue. The MUTCD states that the decision to establish all-way stop control at an unsignalized intersection should be based on an engineering study which includes an analysis of

factors related to the existing operation and safety at the intersection, the potential to improve these conditions, and the applicable factors contained in the all-way stop control warrants.

The following section discusses whether each warrant is satisfied at the subject intersection. Furthermore, the overall results of the warrant analyses are shown summarized in **Table 3** below. Additionally, an excerpt from the MUTCD defining the criteria for each warrant and supporting Warrant D exhibit can be found in **Appendix A**.

Warrant A, Crash Experience – The New Jersey Department of Transportation's Numetrics based crash database was consulted to review the existing crash history at the intersection. The crash history from January 1, 2019 to August 1, 2026 is shown in **Table 1** below:

DATE	STREET	CROSS STREET	TYPE	CIRCUMSTANCE
6/6/22	Woodland Avenue	Redwood Avenue	Fixed Object	Driver Inattention
8/30/22	Woodland Avenue	Redwood Avenue	Opposite Direction Side Swipe	Improper Turning
5/3/26	Woodland Avenue	Redwood Avenue	Backing	Driver Inattention

As shown in **Table 1**, three reported crashes occurred at the study intersection during the review period. The first and third crashes, on June 6, 2022, and May 3, 2026, was attributed to driver inattention. The second crash, on August 30, 2022, was due to improper turning. None of the crashes were susceptible to correction through the installation of all-way stop control. In addition, the intersection does not meet the crash frequency thresholds specified in MUTCD Section 2B.13 for All-Way Stop Control Warrant A. Therefore, Warrant A is not met.

Warrant B, Sight Distance – During a field visit to the intersection of Woodland Avenue and Redwood Avenue, it was observed that drivers on the eastbound approach of Terrace Avenue experience limited sight distance at the stop bars, restricting their ability to detect conflicting traffic. While NJDOT designates the driver decision point as 14.5 feet behind the edge of the traveled way which accounts for shoulders and parking lanes, the existing travel lanes on Woodland Avenue are not clearly delineated. As a result, through traffic was observed traveling closer along the curb line rather than the roadway centerline. Consequently, the effective decision point had to be taken 14.5 feet behind the curb line extension, where available sight distance was inadequate at the eastbound approach looking left due to roadway geometry. As shown in **Table 2** below, the available sight distances at the subject intersection exceeded the minimum stopping sight distance except for the eastbound approach looking left. Therefore, Warrant B is met.

Table 2: Sight Distance Comparison

Side Street	Approach	Available Sight Distance *		Minimum Stopping Sight Distance **
		Looking Left	Looking Right	
Redwood Avenue at Woodland Avenue	Eastbound	~80'	>200'	200'
	Westbound	>200'	>200'	

* Observed during September 22, 2026 field visit.

** Obtained from NJDOT Roadway Design Manual Chapter 4.2, Table 4-1 with a 30 MPH design speed.

Warrant C, Transition to Signal Control or Transition to Yield Control at a Circular Intersection – Neither a signal nor roundabout is planned at the subject intersection. Therefore, Warrant C is not applicable.

Warrant D, 8-Hour Volumes (Vehicles, Pedestrians, & Bicycles) – Traffic volumes along the major road exceed the 300 vehicles/hour criteria for 10 hours of the counted day, while traffic volumes along the minor (stop-controlled) road exceed the 200 vehicles/hour criteria for 0 hours of the counted day. This equates to a total of 0 hours where both the major and minor road volume criteria are met, which is below the 8-hour warrant threshold. Therefore, Warrant D is not met.

Warrant E, Other Factors – An engineering evaluation of the study intersection did not identify any other factors that would warrant the installation of all-way stop control. Therefore, Warrant E is not met.

Summary of Results

As shown in **Table 3** below, multi-way stop-control is **warranted** at the study intersection based on the applicable MUTCD criteria.

Table 3: Multi-Way Stop Warrant Analysis Summary

MUTCD Warrant	Description	Met	Not Met
A	Crash Experience		X
B	Sight Distance	X	
C	Transition to Signal Control or Transition to Yield Control at a Circular Intersection	N/A	
D	8-Hour Volumes (Vehicles, Pedsestrians & Bicycles)		X
E	Other Factors		X
Multi-Way Stop Control Warranted?		**YES**	

Conclusion

Based on the engineering study, MUTCD All-Way Stop Control Warrant B was found to be satisfied due to restricted sight distance on the eastbound Redwood Avenue approach. Because the sight distance limitation cannot be readily corrected through minor improvements and the intersection is located adjacent to Redwood Elementary School, installation of all-way stop control is recommended at the study intersection. A concept plan depicting the proposed stop bar locations is provided in **Appendix C**.

Appendix A

Exhibits

All-Way Stop Warrant Analysis
Warrant D, 8-Hour Volume (Vehicles, Pedestrians, & Bicycles)
Woodland Avenue & Redwood Avenue

Time	Major Roadway				Minor Roadway				WARRANT MET?
	Woodland Avenue				Redwood Avenue				
	Northbound	Southbound	Combined Vehicular, Pedestrian, and Bicycle Volume	Condition "A" Criteria	Eastbound	Westbound	Combined Vehicular, Pedestrian, and Bicycle Volume	Condition "B" Criteria	
Thur., Sept. 24, 2026									
12:00:00 AM	0	0	0	300	0	0	0	200	NO
1:00:00 AM	0	0	0	300	0	0	0	200	NO
2:00:00 AM	0	0	0	300	0	0	0	200	NO
3:00:00 AM	0	0	0	300	0	0	0	200	NO
4:00:00 AM	0	0	0	300	0	0	0	200	NO
5:00:00 AM	0	0	0	300	0	0	0	200	NO
6:00:00 AM	48	51	99	300	3	2	5	200	NO
7:00:00 AM	123	42	165	300	13	5	18	200	NO
8:00:00 AM	209	69	278	300	41	10	51	200	NO
9:00:00 AM	118	46	164	300	14	5	19	200	NO
10:00:00 AM	69	33	102	300	15	0	15	200	NO
11:00:00 AM	82	36	118	300	9	7	16	200	NO
12:00:00 PM	94	41	135	300	9	4	13	200	NO
1:00:00 PM	74	42	116	300	11	5	16	200	NO
2:00:00 PM	104	53	157	300	9	6	15	200	NO
3:00:00 PM	159	98	257	300	35	16	51	200	NO
4:00:00 PM	182	111	293	300	48	10	58	200	NO
5:00:00 PM	148	117	265	300	27	4	31	200	NO
6:00:00 PM	0	0	0	300	0	0	0	200	NO
7:00:00 PM	0	0	0	300	0	0	0	200	NO
8:00:00 PM	0	0	0	300	0	0	0	200	NO
9:00:00 PM	0	0	0	300	0	0	0	200	NO
10:00:00 PM	0	0	0	300	0	0	0	200	NO
11:00:00 PM	0	0	0	300	0	0	0	200	NO

# HOURS WARRANT IS MET:	0

WARRANT IS MET?	NO

Appendix B

Traffic Count Data

Woodland Ave & Redwood Ave, West Orange, NJ 07052
West Orange, NJ
Thursday, September 24, 2026

Time	Southbound Woodland Ave						Westbound Redwood Ave						Northbound Woodland Ave						Eastbound Redwood Ave						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
6:00 AM	0	0	11	1	0	*12*	0	1	0	0	0	*1*	0	1	3	0	0	*4*	0	0	0	0	0	*0*	**17**
6:15 AM	0	0	5	0	0	*5*	0	0	0	1	0	*1*	0	0	10	0	0	*10*	0	0	0	1	0	*1*	**17**
6:30 AM	0	0	12	0	0	*12*	0	0	0	0	0	*0*	0	1	14	0	0	*15*	0	1	0	0	0	*1*	**28**
6:45 AM	0	0	20	2	0	*22*	0	0	0	0	0	*0*	0	2	17	0	0	*19*	0	1	0	0	0	*1*	**42**
Hourly Total	0	0	48	3	0	*51*	0	1	0	1	0	*2*	0	4	44	0	0	*48*	0	2	0	1	0	*3*	**104**
7:00 AM	0	0	8	0	0	*8*	0	2	0	0	0	*2*	0	3	22	0	0	*25*	0	0	0	3	0	*3*	**38**
7:15 AM	0	0	14	0	0	*14*	0	0	0	0	0	*0*	0	1	35	1	2	*37*	0	3	0	2	1	*5*	**56**
7:30 AM	0	0	8	0	0	*8*	0	2	0	0	0	*2*	0	4	29	0	0	*33*	0	0	0	1	0	*1*	**44**
7:45 AM	0	0	10	2	2	*12*	0	1	0	0	2	*1*	0	1	27	0	0	*28*	0	3	0	1	0	*4*	**45**
Hourly Total	0	0	40	2	2	*42*	0	5	0	0	2	*5*	0	9	113	1	2	*123*	0	6	0	7	1	*13*	**183**
8:00 AM	0	0	8	2	0	*10*	0	0	0	1	0	*1*	0	4	40	0	1	*44*	0	2	0	1	0	*3*	**58**
8:15 AM	0	0	19	5	0	*24*	0	0	0	0	0	*0*	0	9	41	1	2	*51*	0	4	0	3	*7*	*7*	**82**
8:30 AM	0	3	13	3	0	*19*	0	4	0	4	0	*8*	0	10	56	2	29	*68*	0	7	0	10	42	*17*	**112**
8:45 AM	0	0	15	1	0	*16*	0	0	0	1	0	*1*	0	6	40	0	3	*46*	0	8	0	6	9	*14*	**77**
Hourly Total	0	3	55	11	0	*69*	0	4	0	6	0	*10*	0	29	177	3	35	*209*	0	21	0	20	58	*41*	**329**
9:00 AM	0	0	18	4	0	*22*	0	1	0	0	0	*1*	0	4	29	0	1	*33*	0	2	0	4	1	*6*	**62**
9:15 AM	0	0	6	0	1	*6*	0	1	0	0	1	*1*	0	0	31	0	1	*31*	0	1	0	3	2	*4*	**42**
9:30 AM	0	0	10	0	0	*10*	0	1	0	0	2	*1*	0	1	25	0	0	*26*	0	1	1	1	1	*3*	**40**
9:45 AM	0	1	7	0	1	*8*	0	2	0	0	0	*2*	0	2	25	1	0	*28*	0	1	0	0	0	*1*	**39**
Hourly Total	0	1	41	4	2	*46*	0	5	0	0	3	*5*	0	7	110	1	2	*118*	0	5	1	8	4	*14*	**183**
10:00 AM	0	0	6	0	0	*6*	0	0	0	0	0	*0*	0	2	12	1	0	*15*	0	3	0	2	0	*5*	**26**
10:15 AM	0	0	8	0	1	*8*	0	0	0	0	0	*0*	0	1	19	0	0	*20*	0	1	0	2	0	*3*	**31**
10:30 AM	0	0	10	1	0	*11*	0	0	0	0	0	*0*	0	2	19	0	0	*21*	0	1	0	1	0	*2*	**34**
10:45 AM	0	0	8	0	0	*8*	0	0	0	0	0	*0*	0	0	12	1	0	*13*	0	1	0	4	0	*5*	**26**
Hourly Total	0	0	32	1	1	*33*	0	0	0	0	0	*0*	0	5	62	2	0	*69*	0	6	0	9	0	*15*	**117**
11:00 AM	0	0	5	0	0	*5*	0	1	0	2	0	*3*	0	1	14	1	0	*16*	0	1	0	2	0	*3*	**27**
11:15 AM	0	0	9	0	0	*9*	0	0	0	1	0	*1*	0	1	20	1	1	*22*	0	2	0	0	1	*2*	**34**
11:30 AM	0	0	9	0	0	*9*	0	0	0	2	0	*2*	0	1	22	0	0	*23*	0	3	0	0	2	*3*	**37**
11:45 AM	0	1	12	0	0	*13*	0	1	0	0	1	*1*	0	2	18	1	1	*21*	0	1	0	0	0	*1*	**36**
Hourly Total	0	1	35	0	0	*36*	0	2	0	5	1	*7*	0	5	74	3	2	*82*	0	7	0	2	3	*9*	**134**
12:00 PM	0	0	9	0	0	*9*	0	1	0	0	0	*1*	0	2	26	2	0	*30*	0	1	0	1	0	*2*	**42**
12:15 PM	0	0	15	0	0	*15*	0	0	0	2	0	*2*	0	1	18	0	0	*19*	0	1	0	0	0	*1*	**37**
12:30 PM	0	0	11	0	0	*11*	0	0	0	0	0	*0*	0	0	18	0	0	*18*	0	2	0	1	1	*3*	**32**
12:45 PM	0	0	6	0	0	*6*	0	0	0	1	0	*1*	0	0	27	0	0	*27*	0	1	0	2	0	*3*	**37**
Hourly Total	0	0	41	0	0	*41*	0	1	0	3	0	*4*	0	3	89	2	0	*94*	0	5	0	4	1	*9*	**148**
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1:30 PM	0	0	15	0	0	*15*	0	2	0	1	1	*3*	0	0	14	0	1	*14*	0	0	0	2	3	*2*	**34**
1:45 PM	0	0	10	0	0	*10*	0	0	1	1	0	*2*	0	1	19	0	1	*20*	0	1	0	2	1	*3*	**35**
Hourly Total	0	2	40	0	1	*42*	0	2	1	2	3	*5*	0	2	71	1	2	*74*	0	5	0	6	4	*11*	**132**
2:00 PM	0	0	6	0	0	*6*	0	1	1	0	1	*2*	0	1	21	1	3	*23*	0	3	0	3	2	*6*	**37**
2:15 PM	0	0	9	1	0	*10*	0	0	0	1	2	*1*	0	1	25	0	0	*26*	0	0	0	0	0	*0*	**37**
2:30 PM	0	0	14	0	0	*14*	0	2	0	0	0	*2*	0	1	25	0	0	*26*	0	0	0	0	0	*0*	**42**
2:45 PM	0	1	19	3	0	*23*	0	0	0	1	0	*1*	0	6	23	0	0	*29*	0	2	0	1	0	*3*	**56**
Hourly Total	0	1	48	4	0	*53*	0	3	1	2	3	*6*	0	9	94	1	3	*104*	0	5	0	4	2	*9*	**172**
3:00 PM	0	4	22	2	1	*28*	0	1	1	2	0	*4*	0	4	31	3	1	*38*	0	0	0	3	3	*3*	**73**
3:15 PM	0	5	24	3	2	*32*	0	0	0	5	0	*5*	0	5	28	2	42	*35*	0	6	0	0	73	*6*	**78**
3:30 PM	0	0	14	4	0	*18*	0	3	0	2	0	*5*	0	3	41	1	5	*45*	0	10	0	5	11	*15*	**83**
3:45 PM	0	1	18	1	0	*20*	0	1	0	1	0	*2*	0	2	37	2	4	*41*	0	5	0	6	4	*11*	**74**
Hourly Total	0	10	78	10	3	*98*	0	5	1	10	0	*16*	0	14	137	8	52	*159*	0	21	0	14	91	*35*	**308**

Woodland Ave & Redwood Ave, West Orange, NJ 07052
West Orange, NJ
Thursday, September 24, 2026

	Southbound Woodland Ave						Westbound Redwood Ave						Northbound Woodland Ave						Eastbound Redwood Ave						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
4:00 PM	0	1	20	2	0	*23*	0	0	0	2	0	*2*	0	5	46	1	0	*52*	1	4	0	1	0	*6*	**83**
4:15 PM	0	0	26	2	0	*28*	0	0	2	2	0	*4*	0	4	41	3	0	*48*	0	3	0	4	0	*7*	**87**
4:30 PM	0	0	26	4	0	*30*	0	1	1	0	0	*2*	0	5	45	0	1	*50*	0	4	1	7	1	*12*	**94**
4:45 PM	0	0	26	4	0	*30*	0	0	1	1	0	*2*	0	3	29	0	0	*32*	0	14	1	8	0	*23*	**87**
Hourly Total	0	1	98	12	0	*111*	0	1	4	5	0	*10*	0	17	161	4	1	*182*	1	25	2	20	1	*48*	**351**
5:00 PM	0	0	25	4	0	*29*	0	0	0	0	0	*0*	0	2	28	2	1	*32*	0	3	0	4	0	*7*	**68**
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5:30 PM	0	0	26	4	1	*30*	0	1	0	2	1	*3*	0	5	29	2	0	*36*	0	5	0	7	1	*12*	**81**
5:45 PM	0	0	23	1	0	*24*	0	0	1	0	0	*1*	0	4	35	1	0	*40*	0	2	0	3	0	*5*	**70**
Hourly Total	0	0	105	12	1	*117*	0	1	1	2	1	*4*	0	17	126	5	1	*148*	0	12	0	15	1	*27*	**296**
6:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
6:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
7:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
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7:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
8:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
9:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
10:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:00 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:15 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:30 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
11:45 PM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
DAILY TOTAL	**0**	**19**	**661**	**59**	**10**	***739***	**0**	**30**	**8**	**36**	**13**	***74***	**0**	**121**	**1258**	**31**	**100**	***1410***	**1**	**120**	**3**	**110**	**166**	***234***	**2457**
Cars	0	19	648	52	10	*719*	0	30	8	36	13	*74*	0	107	1236	30	100	*1373*	1	115	2	106	166	*224*	**2390**
Heavy Vehicles	0	0	13	7	0	*20*	0	0	0	0	0	*0*	0	14	22	1	0	*37*	0	5	1	4	0	*10*	**67**
Heavy Vehicle %	0.00%	0.00%	1.97%	11.86%	0.00%	*2.71%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	11.57%	1.75%	3.23%	0.00%	*2.62%*	0.00%	4.17%	33.33%	3.64%	0.00%	*4.27%*	**2.73%**

Woodland Ave & Redwood Ave, West Orange, NJ 07052
West Orange, NJ
Thursday, September 24, 2026

AM Peak Hour (00:00 to 10:00)

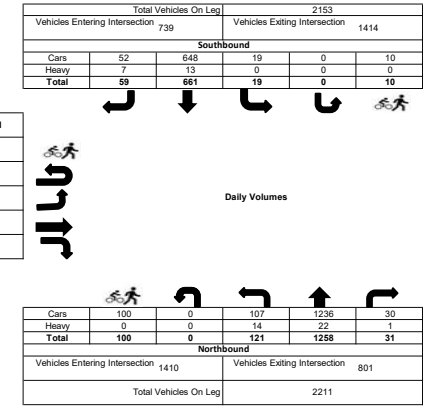
Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
8:15 AM	0	0	19	5	0	*24*	0	0	0	0	0	*0*	0	9	41	1	2	*51*	0	4	0	3	7	*7*	**82**
8:30 AM	0	3	13	3	0	*19*	0	4	0	4	0	*8*	0	10	56	2	29	*68*	0	7	0	10	*42*	*17*	**112**
8:45 AM	0	0	15	1	0	*16*	0	0	0	1	0	*1*	0	6	40	0	3	*46*	0	8	0	6	9	*14*	**77**
9:00 AM	0	0	18	4	0	*22*	0	1	0	0	0	*1*	0	4	29	0	1	*33*	0	2	0	4	1	*6*	**62**
Peak Hour Total	0	3	65	13	0	*81*	0	5	0	5	0	*10*	0	29	166	3	35	*198*	0	21	0	23	59	*44*	**333**
Peak Hour Heavy Vehicles	0	0	2	5	0	*7*	0	0	0	0	0	*0*	0	6	4	0	0	*10*	0	1	0	3	0	*4*	**21**
Peak Hour Heavy Vehicles %	0.00%	0.00%	3.08%	38.46%	0.00%	*8.64%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	20.69%	2.41%	0.00%	0.00%	*5.05%*	0.00%	4.76%	0.00%	13.04%	0.00%	*9.09%*	6.31%
PHF	0.000	0.250	0.855	0.650	0.000	*0.844*	0.000	0.313	0.000	0.313	0.000	*0.313*	0.000	0.725	0.741	0.375	0.302	*0.728*	0.000	0.656	0.000	0.575	0.351	*0.647*	**0.743**

Mid Peak Hour (10:00 - 14:00)

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
11:30 AM	0	0	9	0	0	*9*	0	0	0	2	0	*2*	0	1	22	0	0	*23*	0	3	0	0	2	*3*	**37**
11:45 AM	0	1	12	0	0	*13*	0	1	0	0	1	*1*	0	2	18	1	1	*21*	0	1	0	0	0	*1*	**36**
12:00 PM	0	0	9	0	0	*9*	0	1	0	0	0	*1*	0	2	26	2	0	*30*	0	1	0	1	0	*2*	**42**
12:15 PM	0	0	15	0	0	*15*	0	0	0	2	0	*2*	0	1	18	0	0	*19*	0	1	0	0	0	*1*	**37**
Peak Hour Total	0	1	45	0	0	*46*	0	2	0	4	1	*6*	0	6	84	3	1	*93*	0	6	0	1	2	*7*	**152**
Peak Hour Heavy Vehicles	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	1	0	0	0	*1*	0	1	0	0	0	*1*	**2**
Peak Hour Heavy Vehicles %	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	16.67%	0.00%	0.00%	0.00%	*1.08%*	0.00%	16.67%	0.00%	0.00%	0.00%	*14.29%*	1.32%
PHF	0.000	0.250	0.750	0.000	0.000	*0.767*	0.000	0.500	0.000	0.500	0.250	*0.750*	0.000	0.750	0.808	0.375	0.250	*0.775*	0.000	0.500	0.000	0.250	0.250	*0.583*	**0.905**

PM Peak Hour (14:00 - 24:00)

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	
4:00 PM	0	1	20	2	0	*23*	0	0	0	2	0	*2*	0	5	46	1	0	*52*	1	4	0	1	0	*6*	**83**
4:15 PM	0	0	26	2	0	*28*	0	0	2	2	0	*4*	0	4	41	3	0	*48*	0	3	0	4	0	*7*	**87**
4:30 PM	0	0	26	4	0	*30*	0	1	1	0	0	*2*	0	5	45	0	1	*50*	0	4	1	7	1	*12*	**94**
4:45 PM	0	0	26	4	0	*30*	0	0	1	1	0	*2*	0	3	29	0	0	*32*	0	14	1	8	0	*23*	**87**
Peak Hour Total	0	1	98	12	0	*111*	0	1	4	5	0	*10*	0	17	161	4	1	*182*	1	25	2	20	1	*48*	**351**
Peak Hour Heavy Vehicles	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	**2**
Peak Hour Heavy Vehicles %	0.00%	0.00%	1.02%	0.00%	0.00%	*0.90%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	0.00%	0.00%	0.00%	0.00%	*0.00%*	0.00%	0.00%	50.00%	0.00%	0.00%	*2.08%*	0.57%
PHF	0.000	0.250	0.942	0.750	0.000	*0.925*	0.000	0.250	0.500	0.625	0.000	*0.625*	0.000	0.850	0.875	0.333	0.250	*0.875*	0.250	0.446	0.500	0.625	0.250	*0.522*	**0.934**

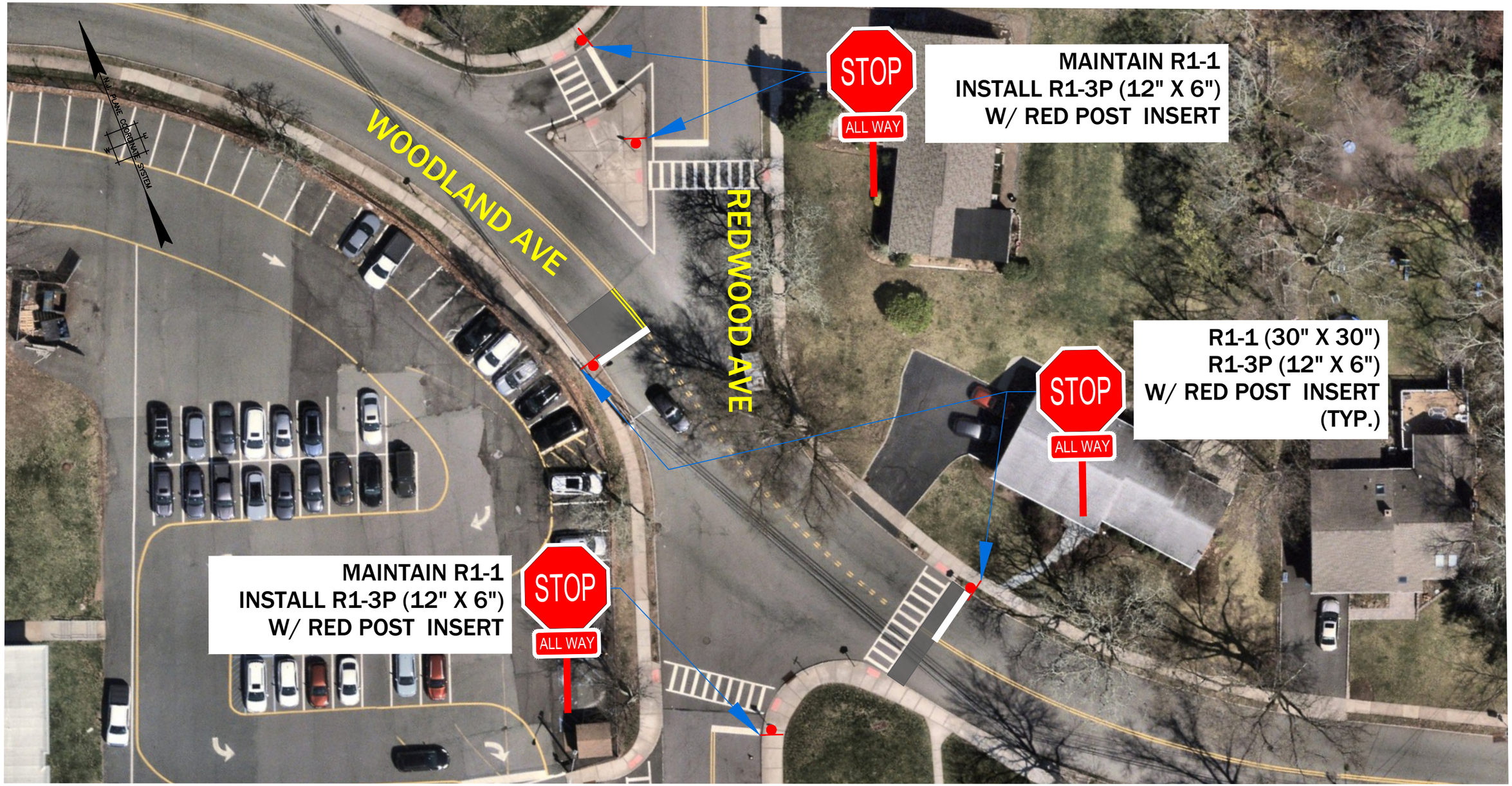


Appendix C

Concept Plan

WEST ORANGE TOWNSHIP

ESSEX COUNTY



LEGEND:

PROPOSED PAVEMENT & STRIPING

PROPOSED SIGNAGE

30' 15' 0' 30' 60'

1" = 30'

CONCEPT PLAN

WOODLAND AVENUE AND REDWOOD AVENUE IMPROVEMENTS

TOWN OF WESTFIELD, UNION COUNTY, NEW JERSEY

www.tandmassociates.com

DATE: 10/23/2026

SHEET 1 OF 1

PRINT SIZE 11"X17"

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