

TRAFFIC IMPACT STUDY

For

**Grove Street Developers, LLC
Proposed Townhouse Development**

Property Located at:

**251 Grove Avenue
Block 1201 – Lot 12
Township of Verona, Essex County, NJ**

Prepared by:



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June 01, 2026

DT# 0922 25-03728

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INTRODUCTION

It is proposed to construct a townhouse development on a parcel of land currently developed with a storage facilities, located along the northbound side of Grove Avenue (CR 639) in Verona Township, Essex County, New Jersey (see Figure 1 in Appendix A). The site is designated as Block 1201 – Lot 12 on the Township of Verona Tax Maps. The existing use consists of five individual storage buildings on the Lot. It is proposed to raze the existing site and construct an 84 unit townhouse development, with 17 being COAH townhouses (“The Project”). The site is located within the C-2 – Professional Office and Business Zone. Access to the site is currently provided via a full movement driveway along Grove Avenue, which acts as the fourth leg to Grove Avenue and Hemlock Drive intersection. It is proposed to reconstruct the existing access point along Grove Avenue.

Dynamic Traffic LLC has been retained to prepare this study to assess the traffic impact associated with the construction of The Project on the adjacent roadway network. This study documents the methodology, analyses, findings and conclusions of our study and includes:

- A detailed inspection was conducted to obtain an inventory of existing roadway geometry, traffic control, and location and geometry of existing driveways and intersections.
- Existing traffic data was collected via turning movement counts (TMC) during the weekday morning and weekday afternoon peak periods at the intersections of:
 - Grove Avenue (CR 639) and Hemlock Drive/Site Driveway
 - Grove Avenue (CR 639) and 271 Grove Avenue Driveway
- Projections of traffic to be generated by the proposed development were prepared utilizing trip generation data as published by the Institute of Transportation Engineers. Site traffic was then assigned to the adjacent street system based upon the anticipated directional distribution.
- Capacity analyses were conducted for the Existing, No Build, and Build conditions for the study intersections.
- The proposed points of ingress and egress were inspected for adequacy of geometric design, spacing and/or alignment to streets and driveways on the opposite side of the street, relationship to other driveways adjacent to the development, and conformance with accepted design standards.
- The site plan as designed was reviewed for sufficiency in accommodating large wheel base vehicles such as delivery trucks, refuse trucks, and emergency vehicles.
- The parking layout and supply was assessed based on accepted design standards, local requirements, and demand experienced at similar developments.
- The proposed site circulation and parking as shown on the site plan were reviewed for conformance with the Residential Site Improvement Standards (“RSIS”) (N.J.A.C. 5:21).

EXISTING CONDITIONS

A review of the existing roadway conditions near the proposed site was conducted to provide the basis for assessing the traffic impact of the development. This included field investigations of the surrounding roadways and intersections, collection of traffic volume data, and extensive analyses.

Existing Roadway Conditions

The following are descriptions of the roadways in the study area:

Grove Avenue (CR 639) is an Urban Major Collector roadway under County jurisdiction with a general north/south orientation. In the vicinity of the site the posted speed limit is 25 MPH and the roadway provides one travel lane in each direction. On-street parking is permitted along both sides of the roadway during the posted permitted times. Curb and sidewalk are provided along both sides of the roadway. Grove Avenue provides a straight horizontal alignment along the site frontage with a slight bend to the northwest just north of the intersection with Hemlock Drive. Grove Avenue (CR 639) provides a slight downgrade vertical alignment when traveling northbound. The land uses along Grove Avenue (CR 639) in the vicinity of The Project are a mix of commercial and residential.

Hemlock Drive is a Local roadway under municipal jurisdiction with a general east/west orientation. In the vicinity of the site the posted speed limit is not posted and the roadway provides one travel lane in each direction. On-street parking is permitted along both sides of the roadway. Curb and sidewalk are provided along both sides of the roadway. Hemlock Drive provides a straight horizontal alignment near the site. Hemlock Drive provides a slight upgrade vertical alignment when traveling westbound. The land uses along Hemlock Drive in the vicinity of The Project are primarily residential.

Existing Traffic Volumes

Turning movement counts (TMC) were conducted on Tuesday, February 10, 2026 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:30 PM at the following intersections:

- Grove Avenue (CR 639) and Hemlock Drive/Site Driveway
- Grove Avenue (CR 639) and 271 Grove Avenue Driveway

Figure 2, located in Appendix A, shows the existing peak street hour (PSH) traffic volumes at the study intersections. All traffic counts are contained in Appendix B.

Existing Capacity Analysis

The methodology utilized in the capacity analyses is described in the *Highway Capacity Manual*, published by the Transportation Research Board. In general, the term Level of Service (LOS) is used to provide a “qualitative” evaluation of capacity based upon certain “quantitative” calculations related to empirical values, such as traffic volume and intersection control.

An unsignalized (STOP sign controlled) driveway or side street along a through route is seldom critical from an overall capacity standpoint, however, it may be of great significance to the capacity of the minor cross-route, and it may influence the quality of traffic flow on both. When analyzing an unsignalized intersection, it is assumed that both the major street through and right turn movements are unimpeded and have the right-of-way over all side street traffic and left turns from the major street. All other turning movements in the intersection cross, merge with, or are otherwise impeded by major street movements. Traffic delays at unsignalized intersections are determined by sequentially processing these impeded movements. Table 1 describes the level of service ranges for unsignalized (stop controlled) intersections.

Table 1
Level of Service Criteria
for Unsignalized Intersections

Level of Service	Average Control Delay (seconds per vehicle)
a	0.0 to 10.0
b	10.1 to 15.0
c	15.1 to 25.0
d	25.1 to 35.0
e	35.1 to 50.0
f	greater than 50.0

Analyses within the *Highway Capacity Manual* assume a random arrival for all the movements, which may not be the case if an adjacent traffic signal is present that platoons vehicles.

All capacity analyses were performed utilizing Synchro 12 software. It should be noted that the existing percentage of trucks and peak hour factors were used in the existing analysis. Table 2 summarizes the existing levels of service (LOS) and delays. All capacity analysis calculation worksheets are contained in Appendix C.

Table 2
Existing Levels of Service

Intersection	Direction/ Movement	AM PSH	PM PSH
Grove Avenue (CR 639) & Hemlock Drive/Site Driveway	EB LTR	B (14)	B (13)
	WB LTR	C (19)	C (20)
	NB L	A (8)	A (8)
	SB L	A (8)	A (8)
Grove Avenue (CR 639) and 271 Grove Avenue (CR 639) Driveway	WB LR	B (14)	B (14)
	SB L	A (8)	A (8)

A (#) - Unsignalized Intersection Level of Service (seconds of delay per vehicle)

The following are discussions pertaining to each of the existing intersections analyzed.

Grove Avenue (CR 639) and Hemlock Drive/Site Driveway

Hemlock Drive and the site driveway intersect Grove Avenue (CR 639) to form a four-leg intersection with the eastbound and westbound directions of Hemlock Drive and the site driveway operating under stop control. Hemlock Drive and the site driveway provide one full movement lane in each direction. Grove Avenue (CR 639) provides one full movement lane in each direction.

A review of the existing analysis reveals that all movements operate at levels of service “C” or better during the analyzed peak periods. See Table 2 for the individual movement levels of service and delays.

Grove Avenue (CR 639) and 271 Grove Avenue Driveway

The 271 Grove Avenue driveway (ingress only) intersects Grove Avenue to form a T-intersection with the westbound approach of the driveway providing one lane for travel away from the intersection. The northbound approach of Grove Avenue provides a shared through/right turn lane, while the southbound approach provides a shared left turn/through lane.

Though the 271 Grove Avenue driveway is an ingress only operating driveway, our tuning movement counts collected data of 10 total trips using the ingress only driveway as a westbound egress onto Grove Avenue. To be conservative our office analyzed the intersection as a full movement driveway.

A review of the existing analysis reveals that all movements operate at levels of service “B” or better during the analyzed peak periods. See Table 2 for the individual movement levels of service and delays.

FUTURE CONDITIONS

Traffic volumes and operational analyses were developed for both the future No Build and Build conditions. The No Build conditions provide a baseline for assessing the impact of the site development traffic on the roadway system. The process of developing the No Build and Build traffic volumes and the subsequent analyses is outlined below.

Regardless of whether the subject site is developed or not, traffic volumes on the surrounding roadways are expected to increase as a result of developments throughout the region. A growth rate for roadways within the study area was obtained from the NJDOT Annual Background Growth Rate Table, which indicates a growth rate of 1.0% per year.

Through consultation with the Verona Township Planning Board staff, there are no other developments in the immediate vicinity of the site that have been approved but not yet constructed that are identified as significant traffic generators. It was assumed that the background growth rate was adequate to account for the traffic associated with developments not listed.

Future 2028 No Build traffic volumes were developed by applying the background growth rate of 1.0% for two (2) years to the study area roadways existing traffic volumes. Figure 3, in Appendix A, shows the 2028 No Build traffic volumes.

Traffic Generation

Trip generation projections for The Project were prepared utilizing the rates set forth within the Institute of Transportation Engineers' (ITE) publication, *Trip Generation Manual, 12th Edition*. This publication sets forth trip generation rates based on empirical traffic count data conducted at numerous research sites. The ITE Land Use Code (LUC) which most closely resembles the proposed use is LUC 215 – Single-Family Attached Housing for the market rate townhouses and LUC 223 – Affordable Housing for the COAH townhouses. Table 3 below details the traffic volumes associated with the subject project.

Table 3
Trip Generation

Land Use	AM PSH			PM PSH		
	In	Out	Total	In	Out	Total
67 Unit Market Rate Townhouses	6	18	24	17	13	30
17 Unit COAH Townhouses	2	4	6	5	3	8
Total	8	22	30	22	16	38

NJDOT has determined that a 100 vehicle threshold is considered a “significant increase in traffic,” hence, it is not anticipated that the proposed use will result in a significant degradation of operating conditions.

Once the magnitude of traffic to be generated by the site is known, it is necessary to assign that traffic to the adjacent street system. The distribution of new traffic to the surrounding roadways is based on the location of primary arterial roadways, major signalized intersections and existing traffic patterns. Figures 4 and 5, located in Appendix A, illustrate the Total Traffic Trip Distribution, and the Total Site Generated Volumes, respectively. The Total Site Generated Volumes assigned to the study area network were added to the No Build traffic volumes to generate the Build traffic volumes, which are shown in Figure 6.

Future Capacity Analysis

Operational conditions at the study intersections were analyzed under the No Build and Build conditions and are summarized in the table below.

Table 4
Future Levels of Service

Intersection	Direction/ Movement		AM PSH		PM PSH	
			No Build	Build	No Build	Build
Grove Avenue (CR 639) & Hemlock Drive/Site Driveway	EB	LTR	B (15)	B (15)	B (13)	B (13)
	WB	LTR	C (19)	C (16)	C (21)	C (18)
	NB	L	A (8)	A (8)	A (8)	A (8)
	SB	L	A (8)	A (8)	A (9)	A (9)
Grove Avenue (CR 639) and 271 Grove Avenue Driveway	WB	LR	B (14)	B (14)	B (12)	B (12)
	SB	L	A (9)	A (9)	A (8)	A (8)

A (#) - Unsignalized Intersection Level of Service (seconds of delay per vehicle)

Grove Avenue (CR 639) and Hemlock Drive/Site Driveway

With the addition of site generated traffic, each movement is anticipated to operate at No Build levels of service “C” or better. See Table 4 for the individual movement levels of service and delays.

Grove Avenue (CR 639) and 271 Grove Avenue (CR 639) Driveway

With the addition of site generated traffic, each movement is anticipated to operate at No Build levels of service “B” or better. See Table 4 for the individual movement levels of service and delays.

SITE PLAN

Site Access and Circulation

The site plan was reviewed with respect to the site access and on-site circulation design. As noted previously, access to The Project will be provided via the reconstruction of the existing site driveway along Grove Avenue (CR 639).

The parking lot will be serviced by parking aisles with widths of 24', which satisfy the Ordinance's minimum requirement of 20', respectively. These aisles will allow for two-way circulation and 90 degree parking. Review of the site plan design indicates that the site can sufficiently accommodate the automobile traffic anticipated.

Parking

The RSIS sets forth a parking requirement of 1.8 parking spaces per one-bedroom townhouse, 2.3 parking spaces per two-bedroom townhouse, and 2.4 parking spaces per three-bedroom townhouse. This results in a parking requirement of 5 spaces for the proposed 3 one-bedroom townhouse units, 110 spaces for the proposed 48 two-bedroom townhouse units, and 79 spaces for the proposed 33 three-bedroom townhouse units, for a total of 194 required parking spaces.

In accordance with the New Jersey Electric Vehicle Supply/Service Equipment (EVSE) parking requirements, 15% of the ordinance parking requirement are required to be electric vehicle charging spaces for multi-family uses containing more than 5 units. The results in an EVSE requirement of 30 EVSE spaces, which is satisfied as designed. Additionally, electric vehicle charging stations count as two spaces for the purposes of complying with parking supply requirements, up to a maximum of 10% of the requirement. As such, the required parking supply is calculated to be 175 spaces.

The proposed market rate townhouse units have been designed to provide a one car garage and driveway combination, which constitutes 2.0 parking spaces. The site is proposed to provide 185 total parking spaces between garage, driveway, and 49 surface level spaces (inclusive of 2 ADA spaces). As such, the RSIS parking requirements are satisfied as designed.

It is proposed to provide parking stalls with dimensions of 9'x20', which satisfy the Ordinance minimum requirement of 9'x20'.

FINDINGS & CONCLUSIONS

Findings

Based upon the detailed analyses as documented herein, the following findings are noted:

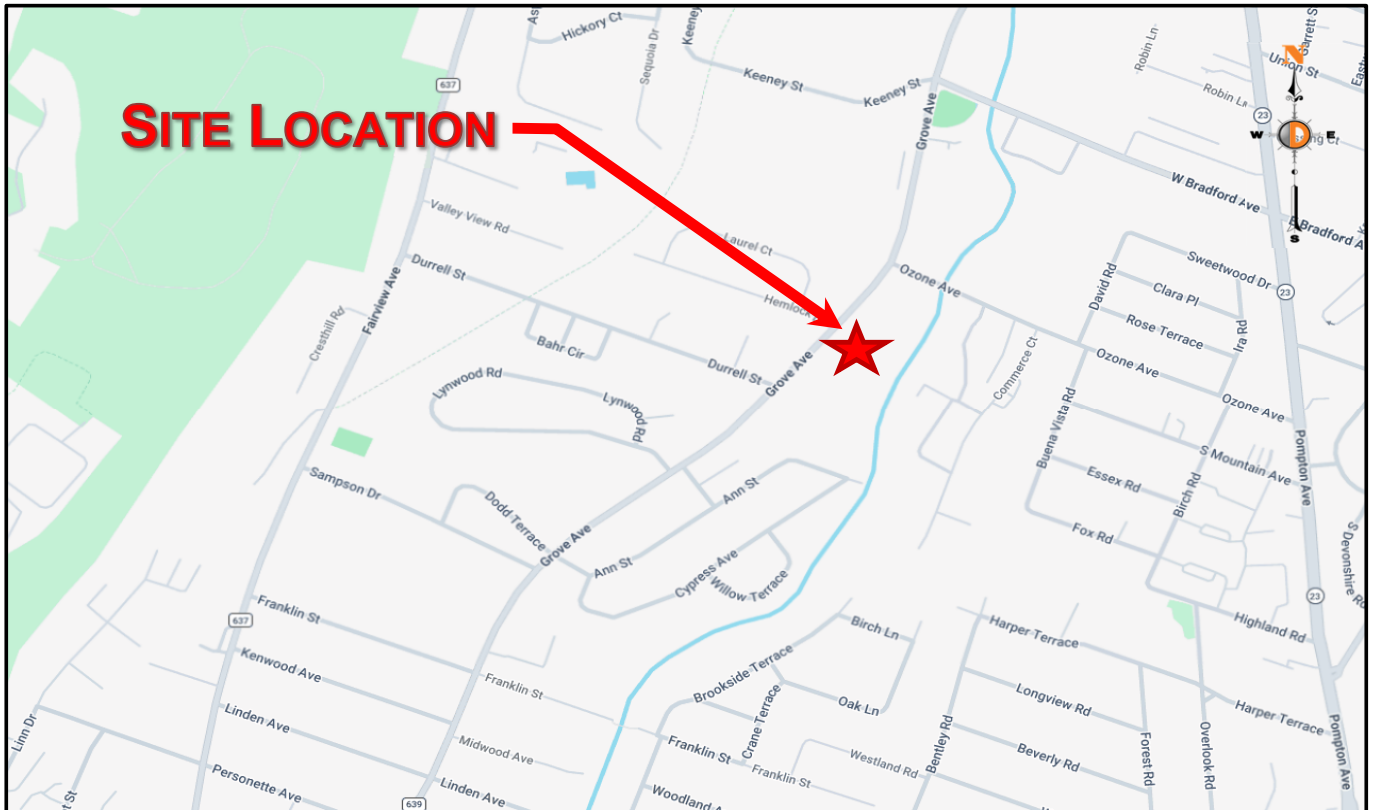
- The proposed 84 unit townhouse development, is projected to generate 8 entering trips and 22 exiting trips during the weekday morning peak hour and 22 entering trips and 16 exiting trips during the evening peak hour, that are “new” to the adjacent roadway network.
- Access to the site is proposed to be provided via the reconstruction of the existing site driveway along Grove Avenue (CR 639).
- With the addition of site generated traffic, the intersection of Grove Avenue (CR 639) and Hemlock Drive/site driveway is anticipated to operate at levels of service “C” or better during the peak hours studied.
- With the addition of site generated traffic, the intersection of Grove Avenue (CR 639) and 271 Grove Avenue driveway is anticipated to operate at levels of service “B” or better during the peak hours studied.
- As proposed, The Project’s site driveways and internal circulation have been designed to provide for safe and efficient movement of the anticipated vehicle mix.
- The Project’s site access points, internal circulation, and parking supply have been designed in accordance with the RSIS (N.J.A.C. 5:21).

Conclusions

Based upon our Traffic Impact Study as detailed in the body of this report, it is the professional opinion of Dynamic Traffic LLC that the adjacent street system of the Township of Verona and Essex County will not experience any significant degradation in operating conditions with the construction of The Project. The site driveway is located to provide safe and efficient access to the adjacent roadway system. The site plan as proposed provides for good circulation throughout the site and provides adequate parking to accommodate The Project’s needs.

Appendix A

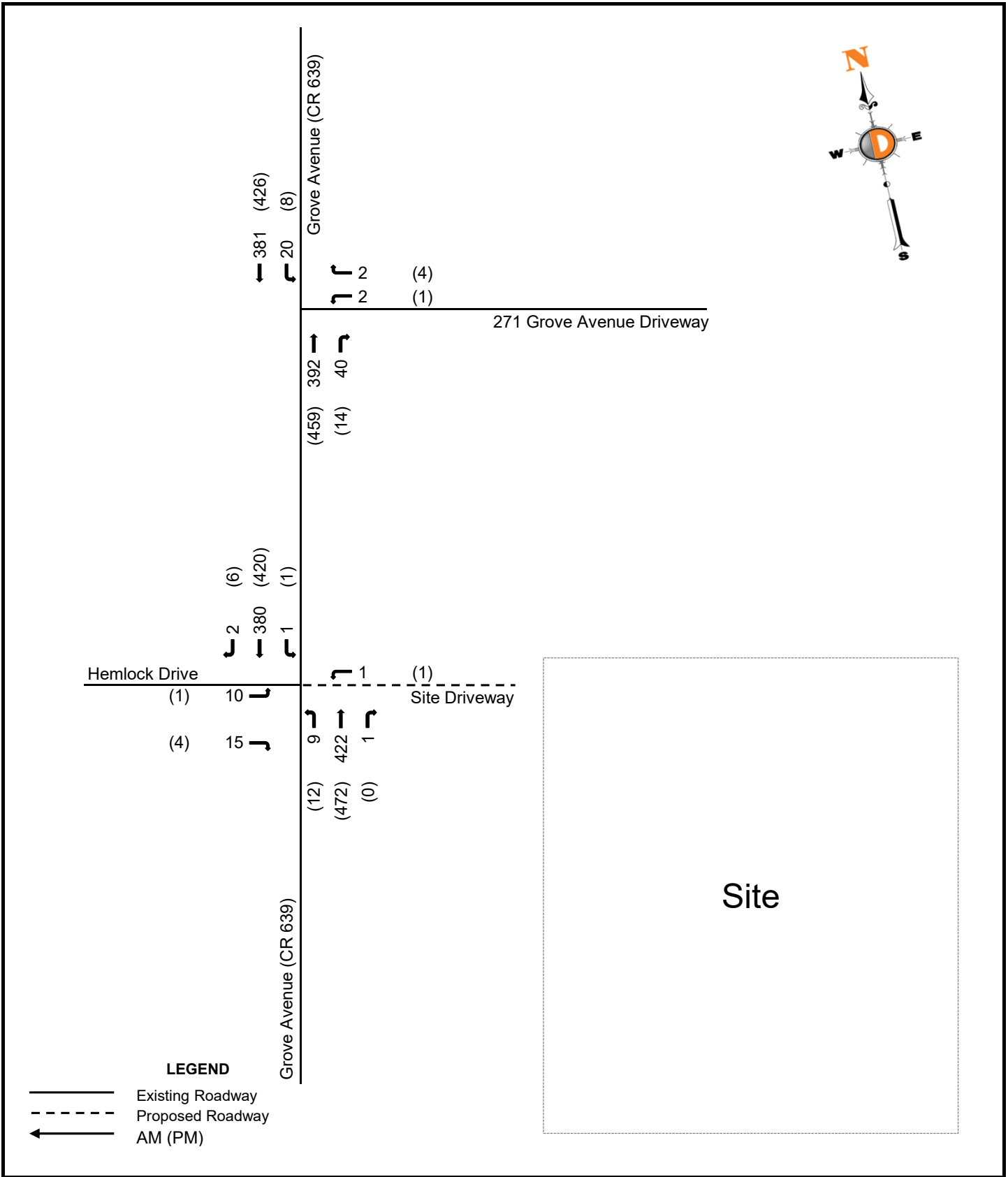
Traffic Volume Figures

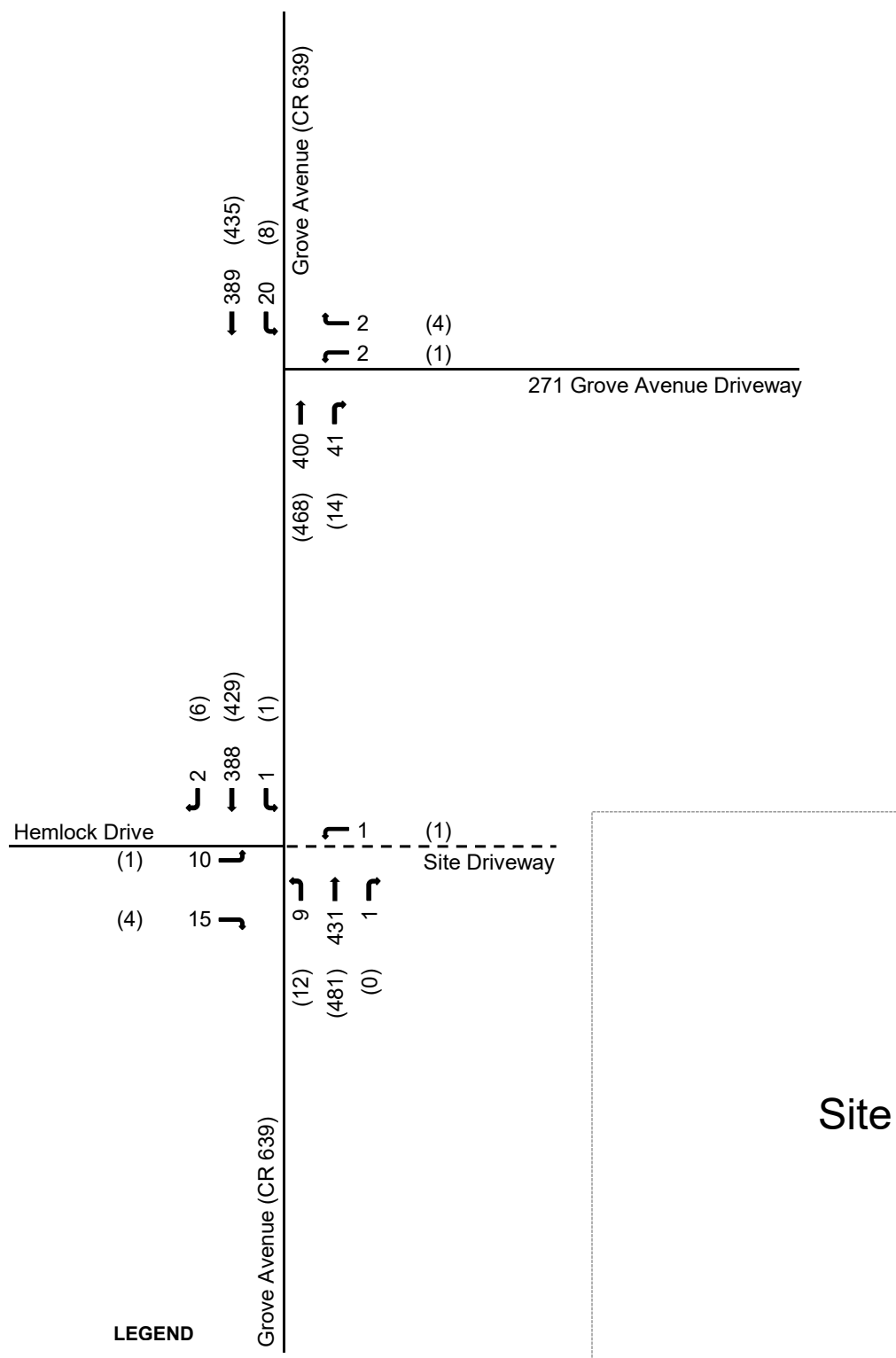


Proposed Townhouse Development
 Traffic Impact Study
 0922 25-03728

Figure 1

Site Location Map





LEGEND

— Existing Roadway

- - - Proposed Roadway

← AM (PM)

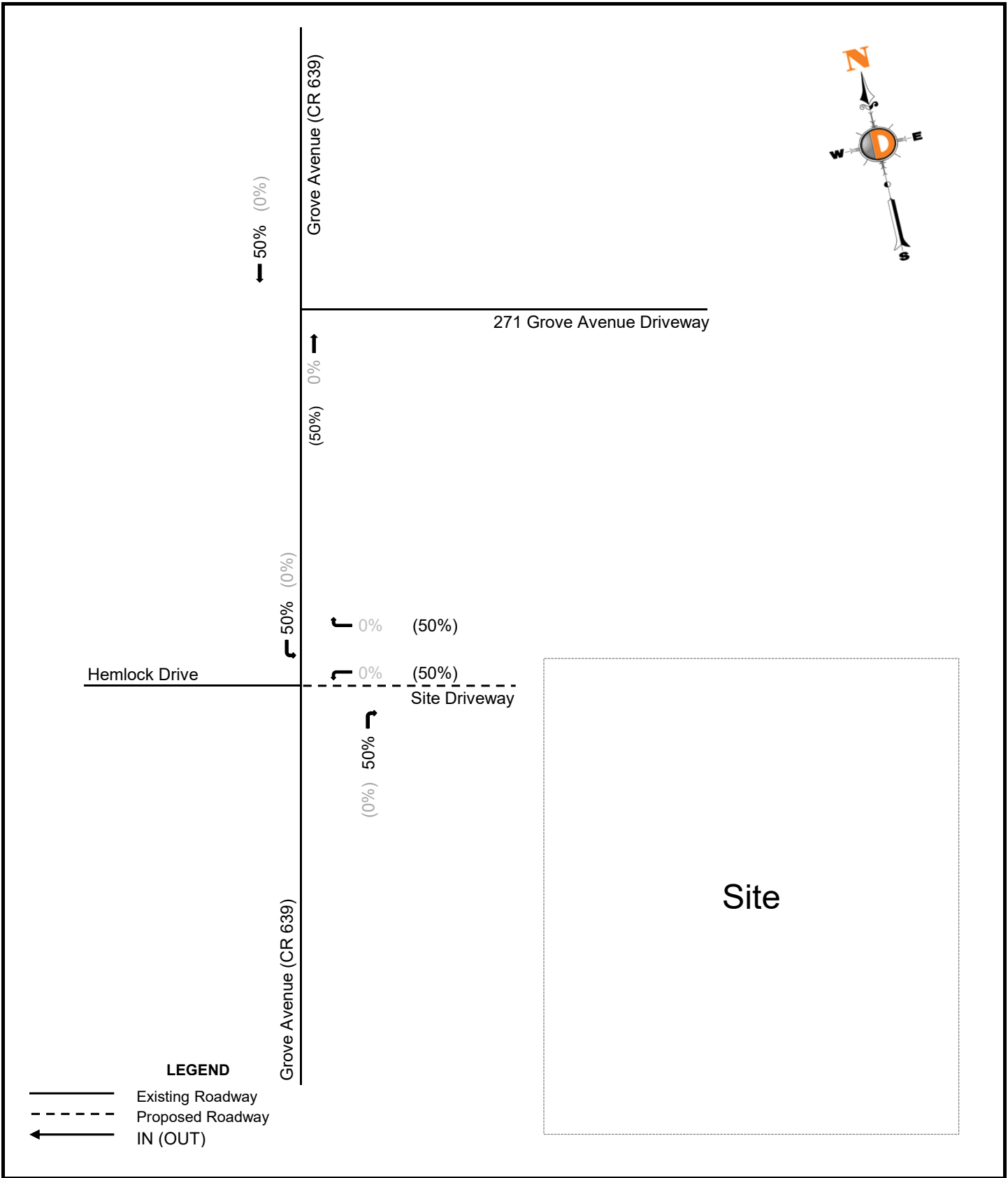
Site

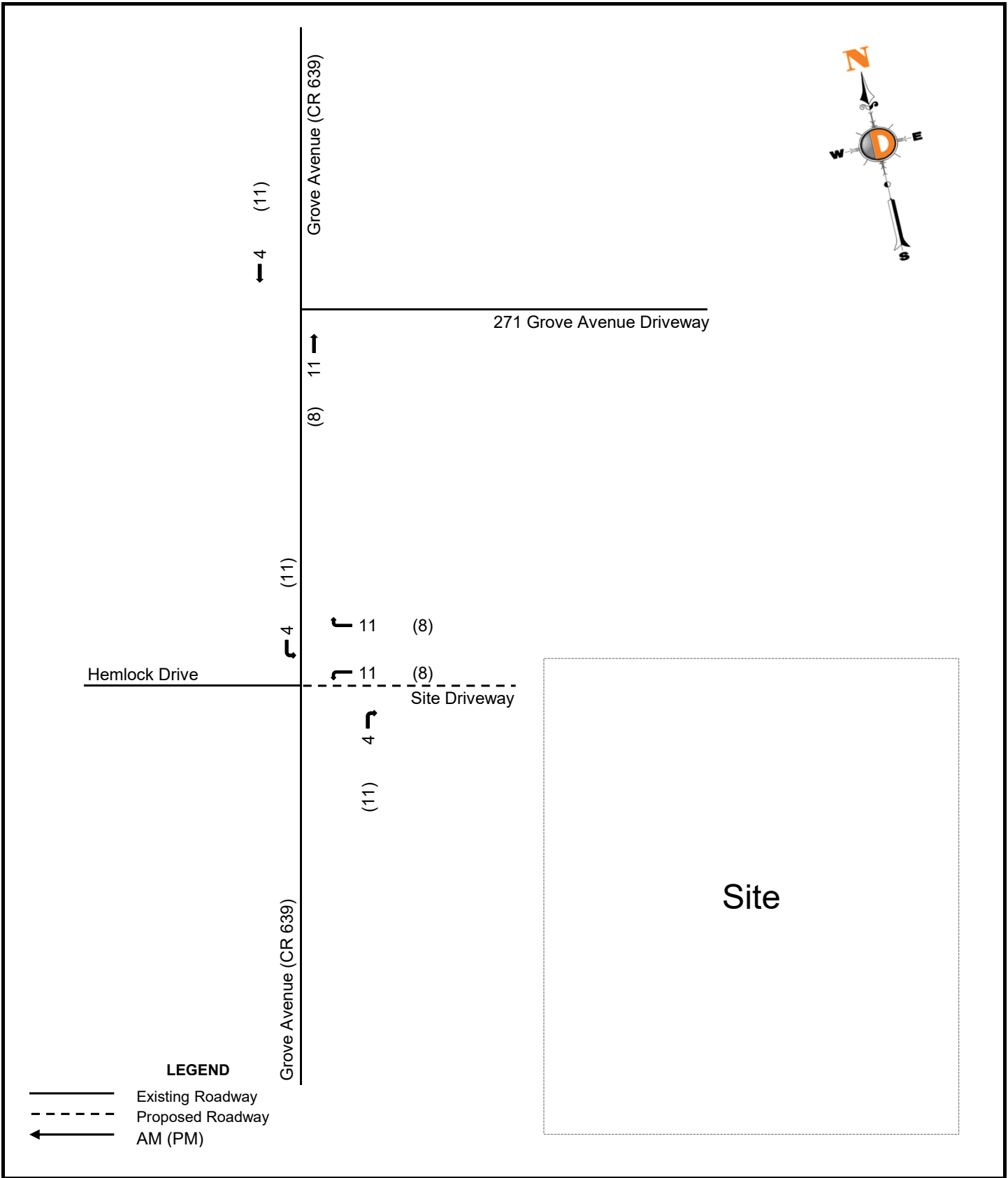


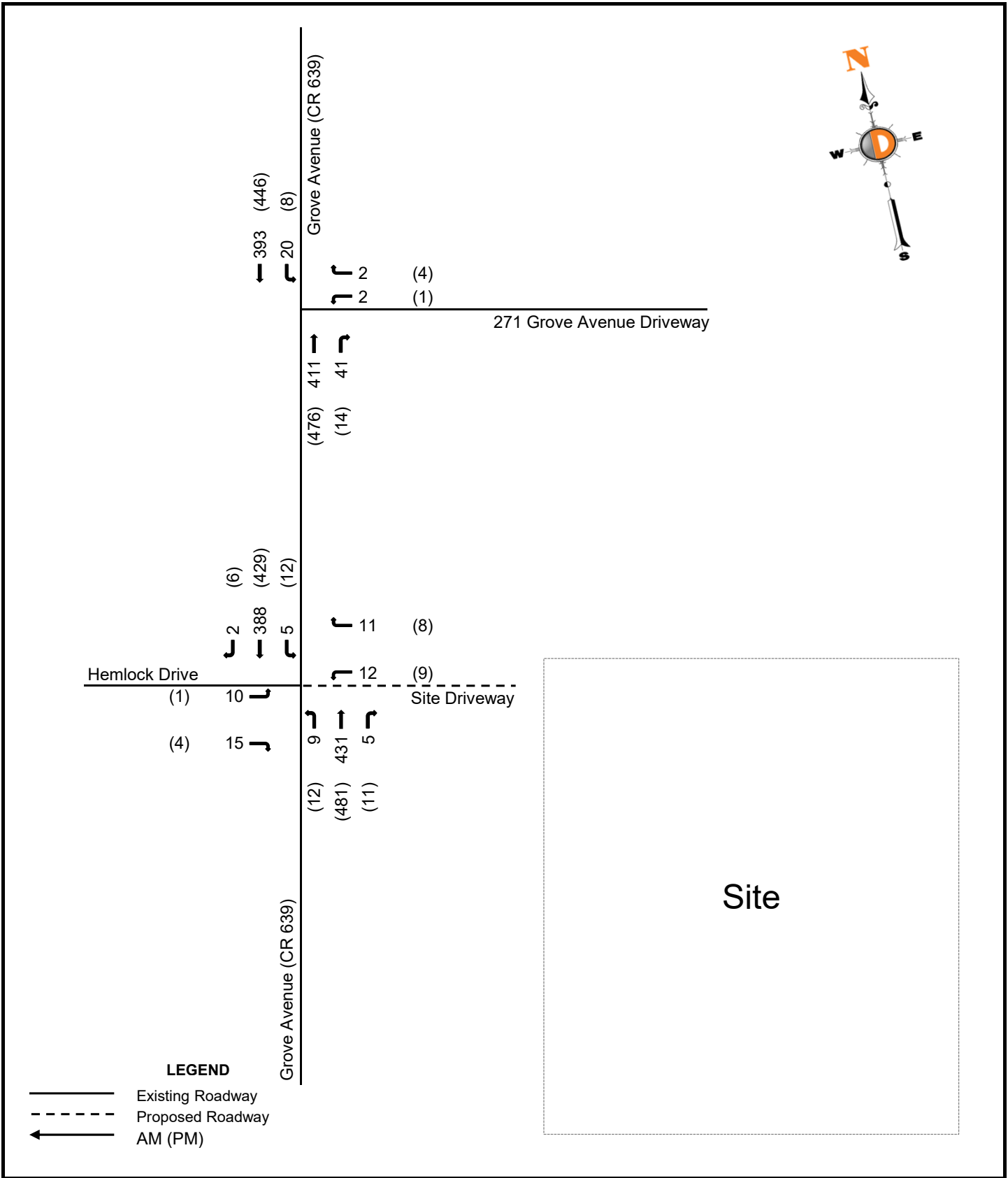
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Figure 3

No Build Traffic Volumes







Appendix B

Project Information

Verona, NJ
Grove Ave & Hemlock Dr
Tuesday, February 10, 2026
Location: 40.84434, -74.237511

Delmont, PA, Pennsylvania, United States 15626
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Count Name: Grove Ave &
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Site Code:
Start Date: 02/10/2026
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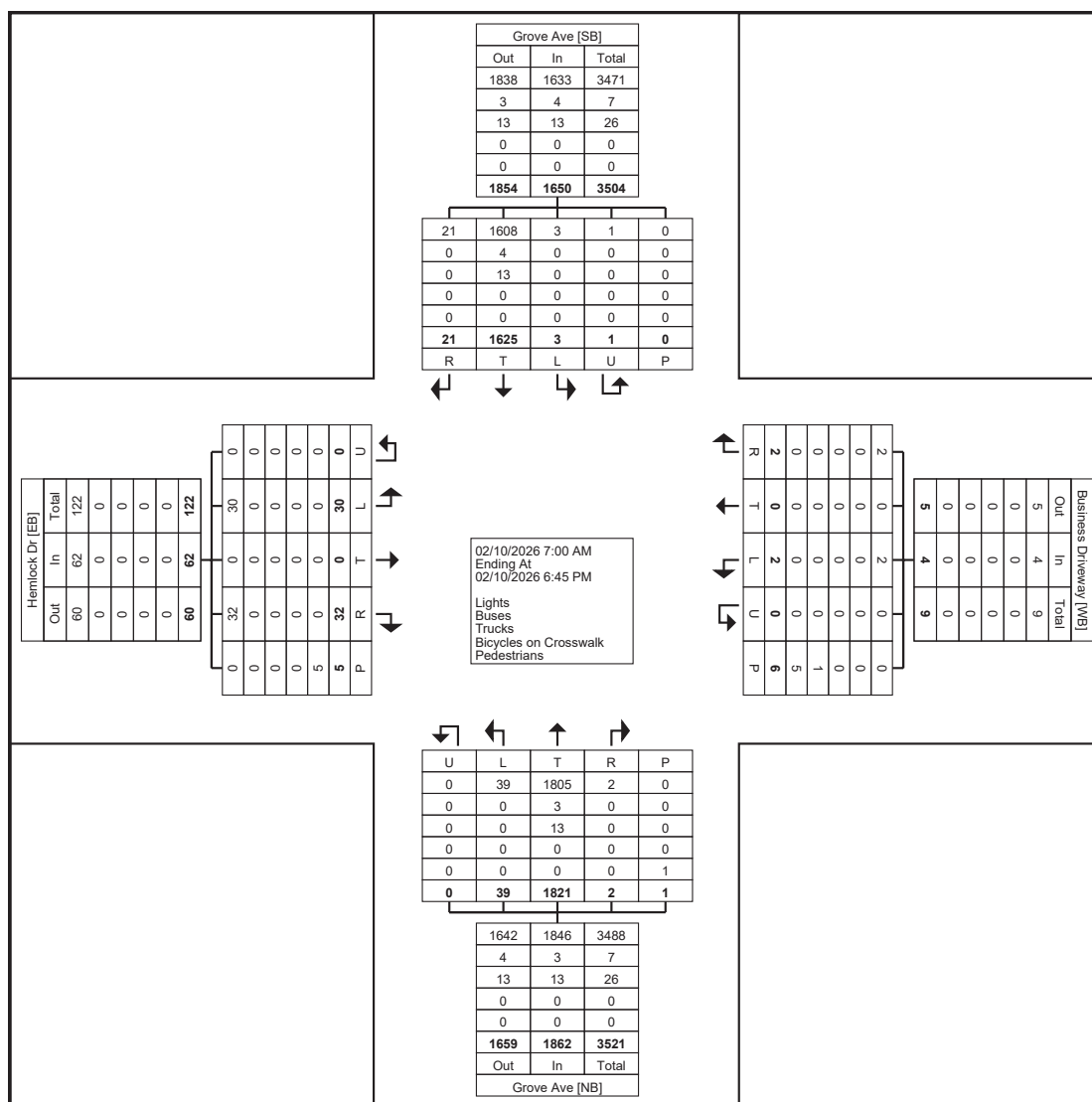
Turning Movement Data

Start Time	Hemlock Dr Eastbound						Business Driveway Westbound						Grove Ave Northbound						Grove Ave Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	4	0	1	0	0	5	0	0	0	0	0	0	1	86	0	0	1	87	0	39	2	0	0	41	133
7:15 AM	4	0	1	0	1	5	0	0	0	0	0	0	0	84	0	0	0	84	0	50	0	0	0	50	139
7:30 AM	1	0	8	0	0	9	0	0	1	0	0	1	1	107	0	0	0	108	1	67	0	0	0	68	186
7:45 AM	4	0	5	0	0	9	0	0	0	0	0	0	1	115	1	0	0	117	0	111	1	0	0	112	238
Hourly Total	13	0	15	0	1	28	0	0	1	0	0	1	3	392	1	0	1	396	1	267	3	0	0	271	696
8:00 AM	4	0	3	0	0	7	0	0	0	0	0	0	1	87	0	0	0	88	1	84	0	0	0	85	180
8:15 AM	2	0	5	0	0	7	0	0	0	0	0	0	4	91	0	0	0	95	0	94	1	0	0	95	197
8:30 AM	0	0	2	0	0	2	1	0	0	0	0	1	3	127	0	0	0	130	0	90	0	0	0	90	223
8:45 AM	1	0	2	0	0	3	0	0	0	0	0	0	1	116	0	0	0	117	0	88	0	0	0	88	208
Hourly Total	7	0	12	0	0	19	1	0	0	0	0	1	9	421	0	0	0	430	1	356	1	0	0	358	808
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
4:00 PM	3	0	0	0	1	3	0	0	0	0	0	0	2	108	0	0	0	110	0	100	3	0	0	103	216
4:15 PM	1	0	0	0	1	1	0	0	0	0	0	0	3	102	0	0	0	105	0	119	1	0	0	120	226
4:30 PM	1	0	0	0	0	1	0	0	0	0	2	0	2	93	0	0	0	95	0	105	2	0	0	107	203
4:45 PM	1	0	0	0	0	1	1	0	0	0	1	1	3	133	0	0	0	136	1	112	2	0	0	115	253
Hourly Total	6	0	0	0	2	6	1	0	0	0	3	1	10	436	0	0	0	446	1	436	8	0	0	445	898
5:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	2	119	0	0	0	121	0	99	1	0	0	100	222
5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	2	93	0	0	0	95	0	108	2	0	0	110	206
5:30 PM	0	0	2	0	0	2	0	0	0	0	0	0	5	124	0	0	0	129	0	101	1	0	0	102	233
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	5	103	0	0	0	108	0	96	0	1	0	97	205
Hourly Total	0	0	4	0	0	4	0	0	0	0	3	0	14	439	0	0	0	453	0	404	4	1	0	409	866
6:00 PM	2	0	1	0	2	3	0	0	1	0	0	1	2	68	1	0	0	71	0	84	2	0	0	86	161
6:15 PM	2	0	0	0	0	2	0	0	0	0	0	0	1	65	0	0	0	66	0	77	3	0	0	80	148
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
Grand Total	30	0	32	0	5	62	2	0	2	0	6	4	39	1821	2	0	1	1862	3	1625	21	1	0	1650	3578
Approach %	48.4	0.0	51.6	0.0	-	-	50.0	0.0	50.0	0.0	-	-	2.1	97.8	0.1	0.0	-	-	0.2	98.5	1.3	0.1	-	-	-
Total %	0.8	0.0	0.9	0.0	-	1.7	0.1	0.0	0.1	0.0	-	0.1	1.1	50.9	0.1	0.0	-	52.0	0.1	45.4	0.6	0.0	-	46.1	-
Lights	30	0	32	0	-	62	2	0	2	0	-	4	39	1805	2	0	-	1846	3	1608	21	1	-	1633	3545
% Lights	100.0	-	100.0	-	-	100.0	100.0	-	100.0	-	-	100.0	100.0	99.1	100.0	-	-	99.1	100.0	99.0	100.0	100.0	-	99.0	99.1
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	3	0	0	-	3	0	4	0	0	-	4	7
% Buses	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.2	0.0	0.0	-	0.2	0.2
Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	13	0	0	-	13	0	13	0	0	-	13	26
% Trucks	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.7	0.0	-	-	0.7	0.0	0.8	0.0	0.0	-	0.8	0.7
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	16.7	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	83.3	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Verona, NJ
Grove Ave & Hemlock Dr
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Start Date: 02/10/2026
Page No: 2



Turning Movement Data Plot

Verona, NJ
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Page No: 3

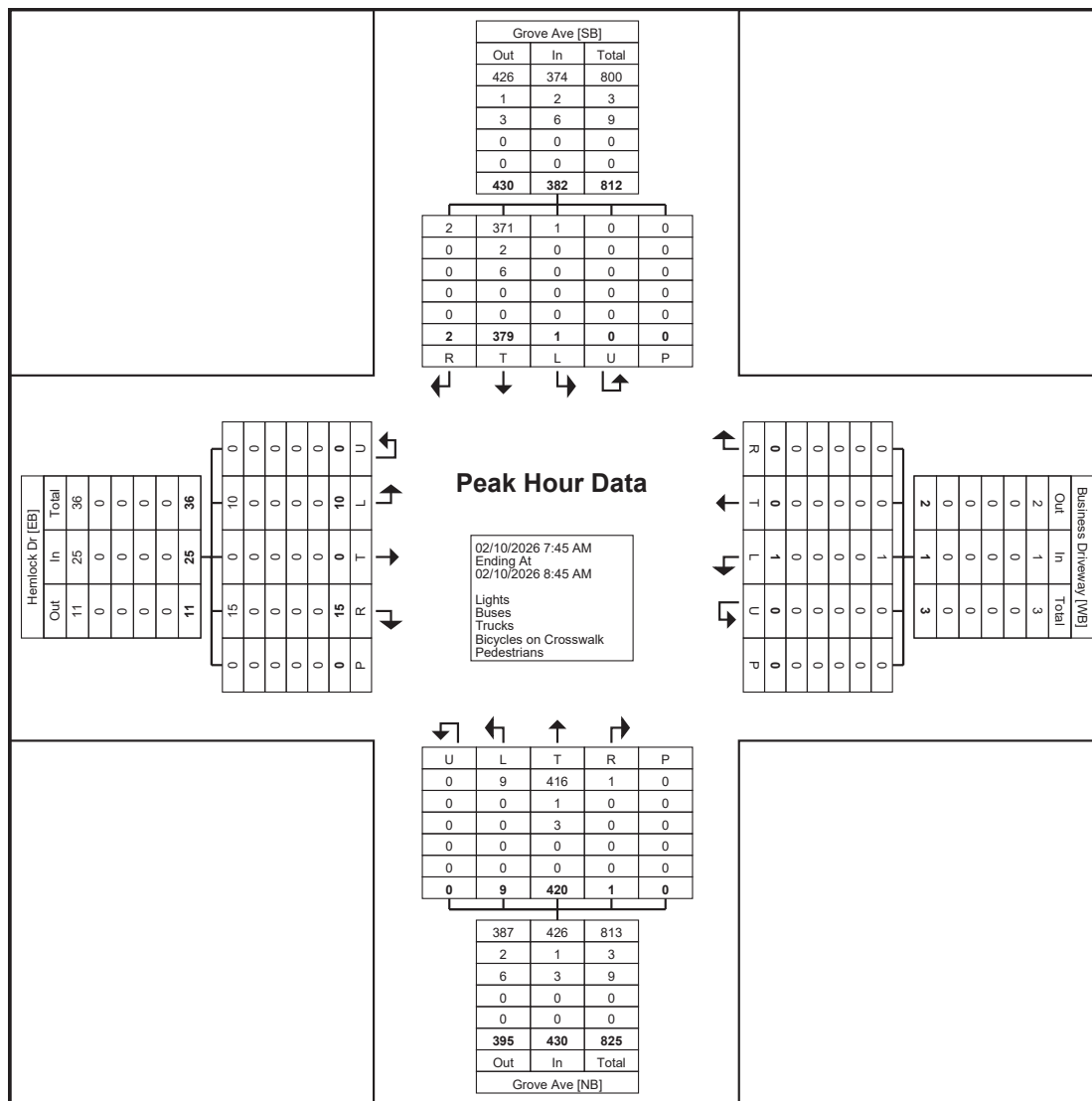
Turning Movement Peak Hour Data (7:45 AM)

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Verona, NJ
Grove Ave & Hemlock Dr
Tuesday, February 10, 2026
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Page No: 4



Turning Movement Peak Hour Data Plot (7:45 AM)

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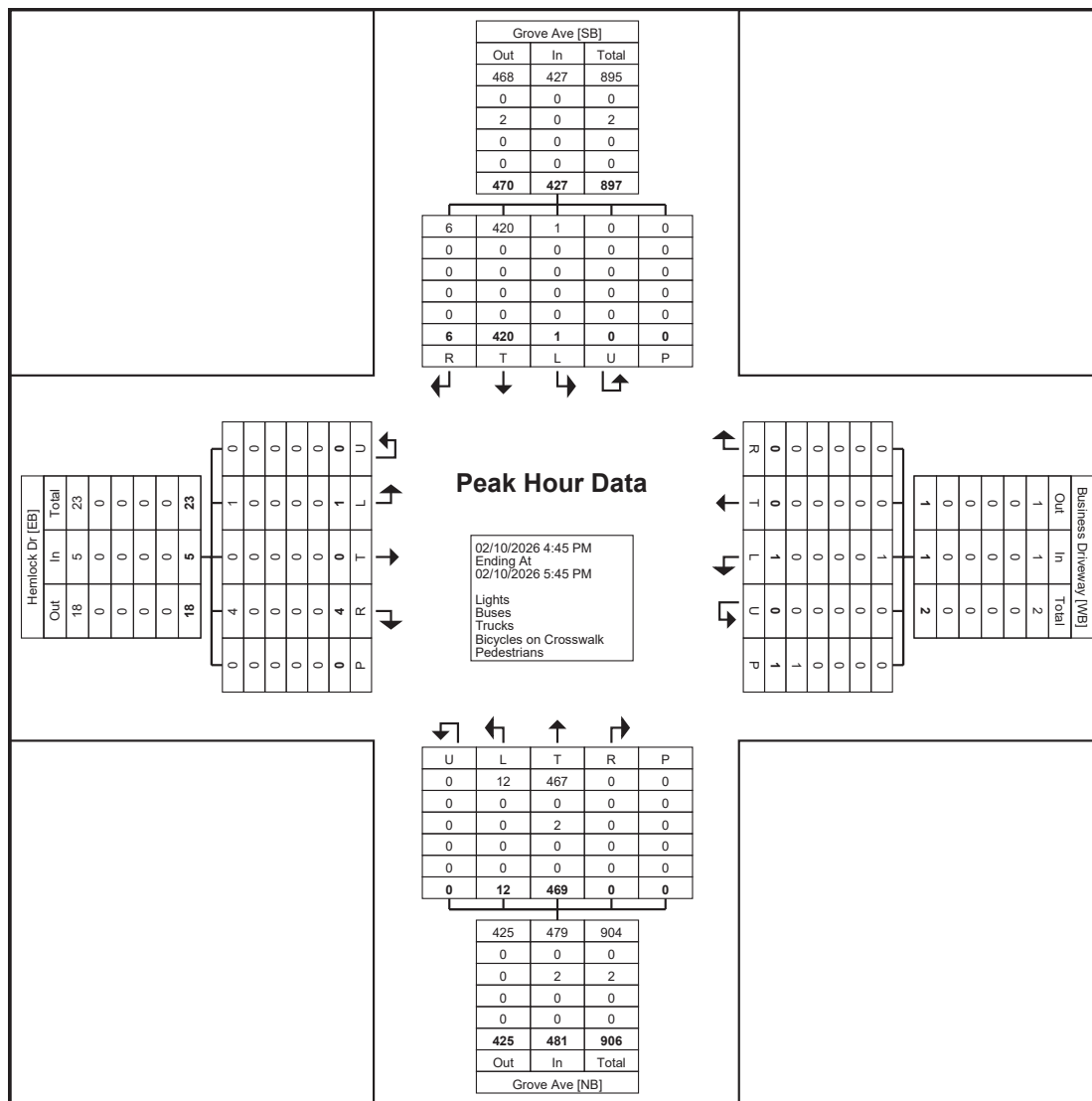
Turning Movement Peak Hour Data (4:45 PM)

Start Time	Hemlock Dr Eastbound						Business Driveway Westbound						Grove Ave Northbound						Grove Ave Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:45 PM	1	0	0	0	0	1	1	0	0	0	1	1	3	133	0	0	0	136	1	112	2	0	0	115	253
5:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	2	119	0	0	0	121	0	99	1	0	0	100	222
5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	2	93	0	0	0	95	0	108	2	0	0	110	206
5:30 PM	0	0	2	0	0	2	0	0	0	0	0	0	5	124	0	0	0	129	0	101	1	0	0	102	233
Total	1	0	4	0	0	5	1	0	0	0	1	1	12	469	0	0	0	481	1	420	6	0	0	427	914
Approach %	20.0	0.0	80.0	0.0	-	-	100.0	0.0	0.0	0.0	-	-	2.5	97.5	0.0	0.0	-	-	0.2	98.4	1.4	0.0	-	-	-
Total %	0.1	0.0	0.4	0.0	-	0.5	0.1	0.0	0.0	0.0	-	0.1	1.3	51.3	0.0	0.0	-	52.6	0.1	46.0	0.7	0.0	-	46.7	-
PHF	0.250	0.000	0.500	0.000	-	0.625	0.250	0.000	0.000	0.000	-	0.250	0.600	0.882	0.000	0.000	-	0.884	0.250	0.938	0.750	0.000	-	0.928	0.903
Lights	1	0	4	0	-	5	1	0	0	0	-	1	12	467	0	0	-	479	1	420	6	0	-	427	912
% Lights	100.0	-	100.0	-	-	100.0	100.0	-	-	-	-	100.0	100.0	99.6	-	-	-	99.6	100.0	100.0	100.0	-	-	100.0	99.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	2
% Trucks	0.0	-	0.0	-	-	0.0	0.0	-	-	-	-	0.0	0.0	0.4	-	-	-	0.4	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Verona, NJ
Grove Ave & Hemlock Dr
Tuesday, February 10, 2026
Location: 40.84434, -74.237511

Delmont, PA, Pennsylvania, United States 15626
610-517-0990 TSTData@aol.com
Serving Transportation Professionals Since 1995

Count Name: Grove Ave &
Hemlock Dr
Site Code:
Start Date: 02/10/2026
Page No: 6



Turning Movement Peak Hour Data Plot (4:45 PM)

Verona, NJ
Grove Ave & 271 Grove Ave
Driveway
Tuesday, February 10 2026
Location: 40.844475, -
74.237337

Delmont, PA, Pennsylvania, United States 15626
610-517-0990 TSTData@aol.com
Serving Transportation Professionals Since 1995

Count Name: Grove Ave & 271
Grove Ave Driveway
Site Code:
Start Date: 02/10/2026
Page No: 1

Turning Movement Data

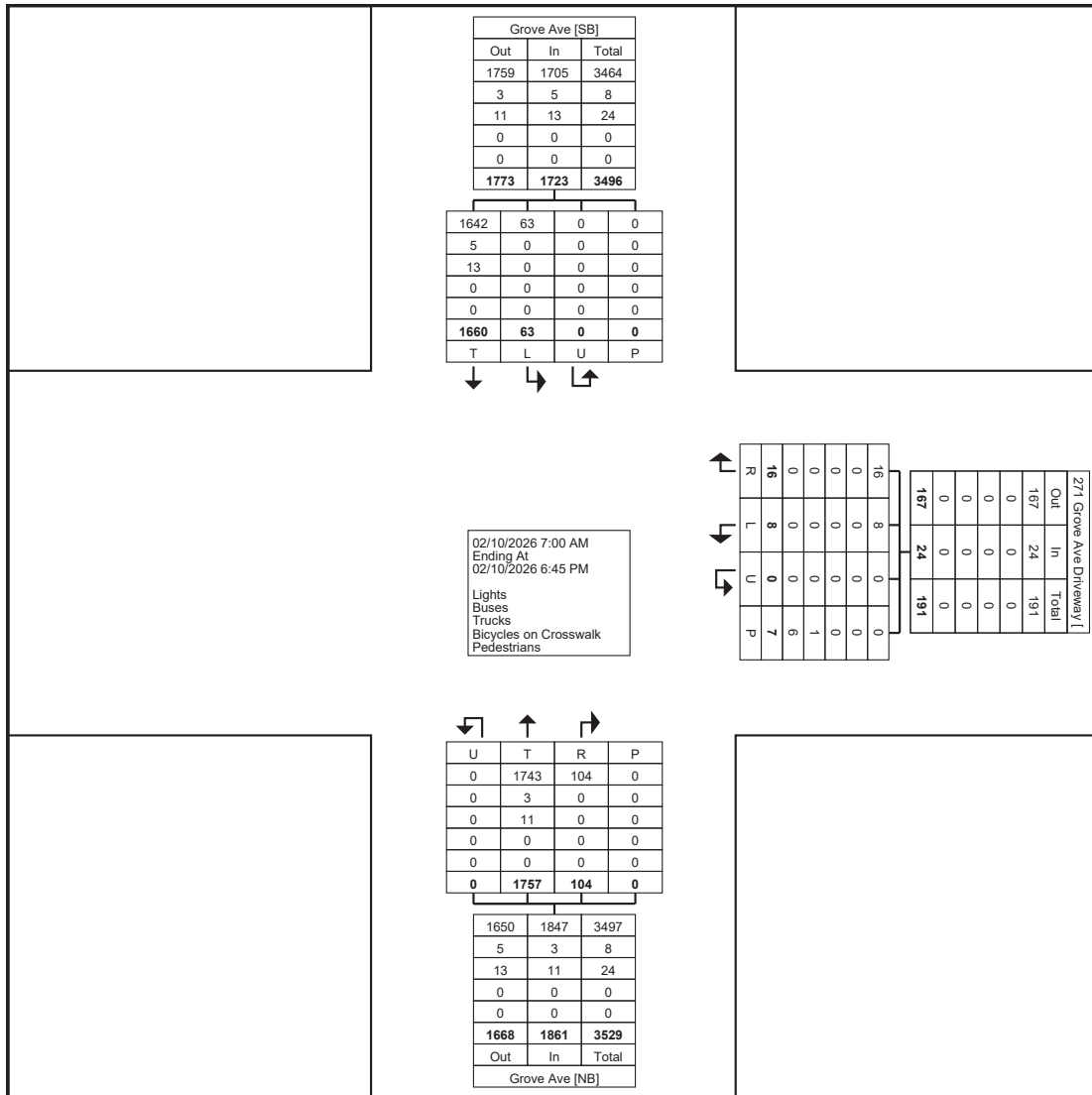
Start Time	271 Grove Ave Driveway Westbound					Grove Ave Northbound					Grove Ave Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	
7:00 AM	0	0	0	0	0	87	4	0	0	91	3	43	0	0	46	137
7:15 AM	1	0	0	1	1	92	6	0	0	98	0	52	0	0	52	151
7:30 AM	0	1	0	0	1	89	8	0	0	97	3	70	0	0	73	171
7:45 AM	0	2	0	0	2	108	12	0	0	120	7	115	0	0	122	244
Hourly Total	1	3	0	1	4	376	30	0	0	406	13	280	0	0	293	703
8:00 AM	1	0	0	0	1	84	6	0	0	90	4	84	0	0	88	179
8:15 AM	1	0	0	0	1	82	11	0	0	93	5	91	0	0	96	190
8:30 AM	0	0	0	0	0	118	11	0	0	129	4	91	0	0	95	224
8:45 AM	0	0	0	0	0	104	13	0	0	117	11	93	0	0	104	221
Hourly Total	2	0	0	0	2	388	41	0	0	429	24	359	0	0	383	814
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	1	0	0	2	105	5	0	0	110	3	108	0	0	111	223
4:15 PM	0	2	0	1	2	99	5	0	0	104	3	120	0	0	123	229
4:30 PM	0	2	0	3	2	96	4	0	0	100	6	105	0	0	111	213
4:45 PM	0	0	0	2	0	119	5	0	0	124	1	108	0	0	109	233
Hourly Total	1	5	0	6	6	419	19	0	0	438	13	441	0	0	454	898
5:00 PM	0	4	0	0	4	113	6	0	0	119	4	100	0	0	104	227
5:15 PM	0	0	0	0	0	102	1	0	0	103	2	106	0	0	108	211
5:30 PM	1	0	0	0	1	125	2	0	0	127	1	106	0	0	107	235
5:45 PM	1	1	0	0	2	97	1	0	0	98	3	98	0	0	101	201
Hourly Total	2	5	0	0	7	437	10	0	0	447	10	410	0	0	420	874
6:00 PM	2	2	0	0	4	69	2	0	0	71	1	86	0	0	87	162
6:15 PM	0	1	0	0	1	68	2	0	0	70	2	84	0	0	86	157
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	8	16	0	7	24	1757	104	0	0	1861	63	1660	0	0	1723	3608
Approach %	33.3	66.7	0.0	-	-	94.4	5.6	0.0	-	-	3.7	96.3	0.0	-	-	-
Total %	0.2	0.4	0.0	-	0.7	48.7	2.9	0.0	-	51.6	1.7	46.0	0.0	-	47.8	-
Lights	8	16	0	-	24	1743	104	0	-	1847	63	1642	0	-	1705	3576
% Lights	100.0	100.0	-	-	100.0	99.2	100.0	-	-	99.2	100.0	98.9	-	-	99.0	99.1
Buses	0	0	0	-	0	3	0	0	-	3	0	5	0	-	5	8
% Buses	0.0	0.0	-	-	0.0	0.2	0.0	-	-	0.2	0.0	0.3	-	-	0.3	0.2
Trucks	0	0	0	-	0	11	0	0	-	11	0	13	0	-	13	24
% Trucks	0.0	0.0	-	-	0.0	0.6	0.0	-	-	0.6	0.0	0.8	-	-	0.8	0.7
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	14.3	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	6	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	85.7	-	-	-	-	-	-	-	-	-	-	-	-

Verona, NJ
Grove Ave & 271 Grove Ave
Driveway
Tuesday, February 10 2026
Location: 40.844475, -
74.237337

www.TSTData.com
Tri-State Traffic Data, Inc

Delmont, PA, Pennsylvania, United States 15626
610-517-0990 TSTData@aol.com
Serving Transportation Professionals Since 1995

Count Name: Grove Ave & 271
Grove Ave Driveway
Site Code:
Start Date: 02/10/2026
Page No: 2



Turning Movement Data Plot

Verona, NJ
Grove Ave & 271 Grove Ave
Driveway
Tuesday, February 10 2026
Location: 40.844475, -
74.237337

Delmont, PA, Pennsylvania, United States 15626
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Count Name: Grove Ave & 271
Grove Ave Driveway
Site Code:
Start Date: 02/10/2026
Page No: 3

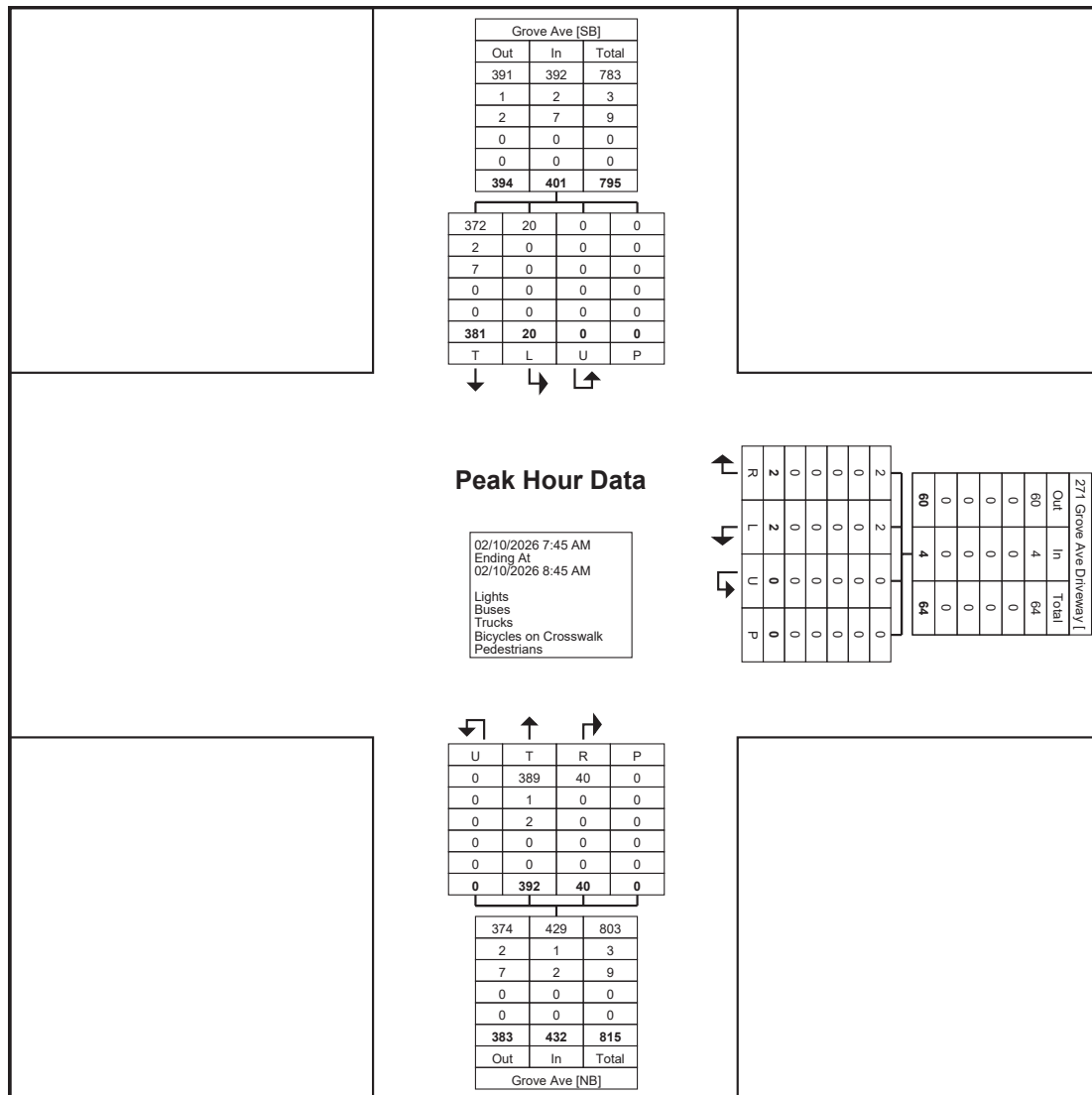
Turning Movement Peak Hour Data (7:45 AM)

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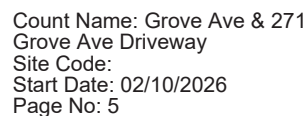
Verona, NJ
Grove Ave & 271 Grove Ave
Driveway
Tuesday, February 10 2026
Location: 40.844475, -
74.237337

Delmont, PA, Pennsylvania, United States 15626
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Count Name: Grove Ave & 271
Grove Ave Driveway
Site Code:
Start Date: 02/10/2026
Page No: 4



Turning Movement Peak Hour Data Plot (7:45 AM)

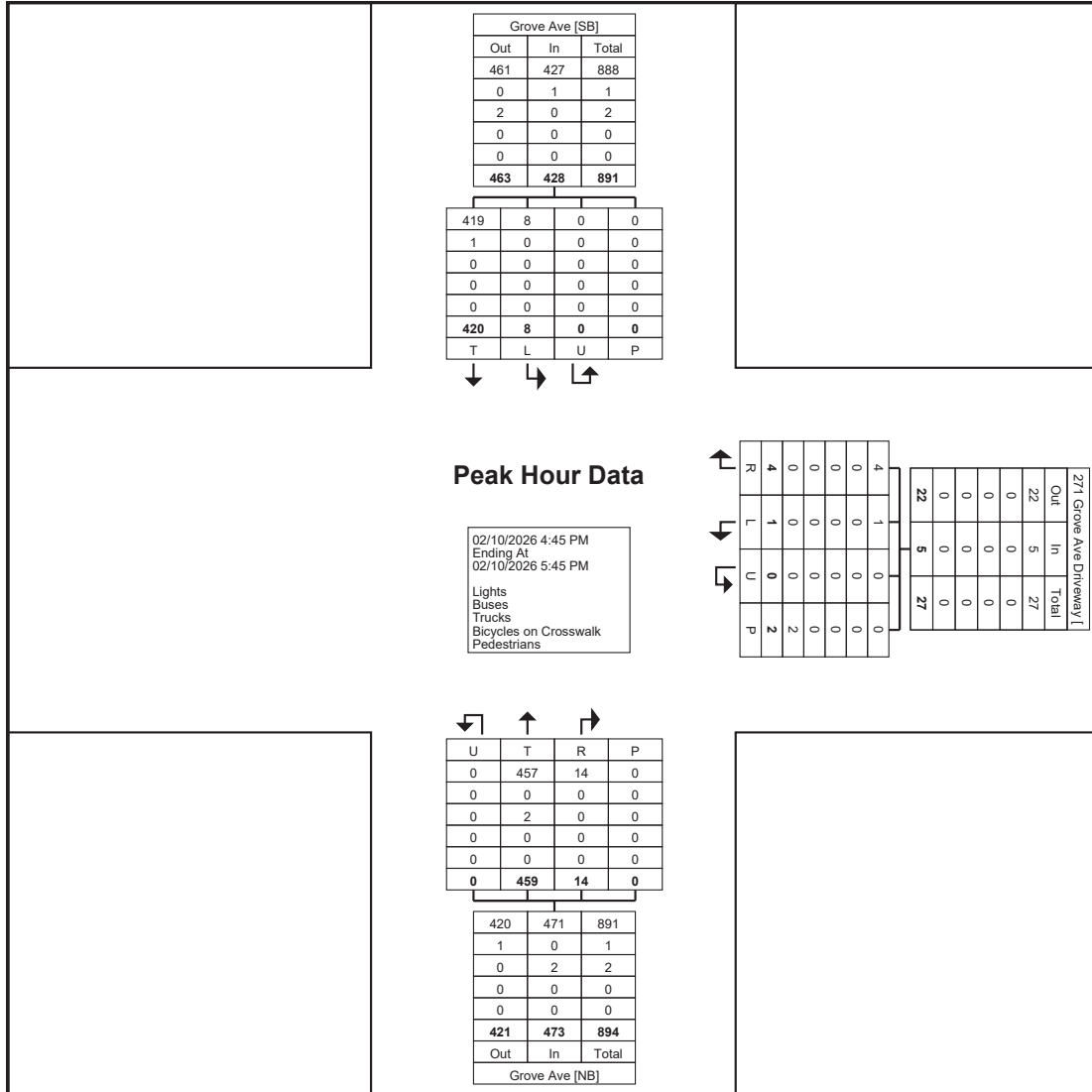
[illegible]

Verona, NJ
Grove Ave & 271 Grove Ave
Driveway
Tuesday, February 10 2026
Location: 40.844475, -
74.237337

www.TSTData.com
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Delmont, PA, Pennsylvania, United States 15626
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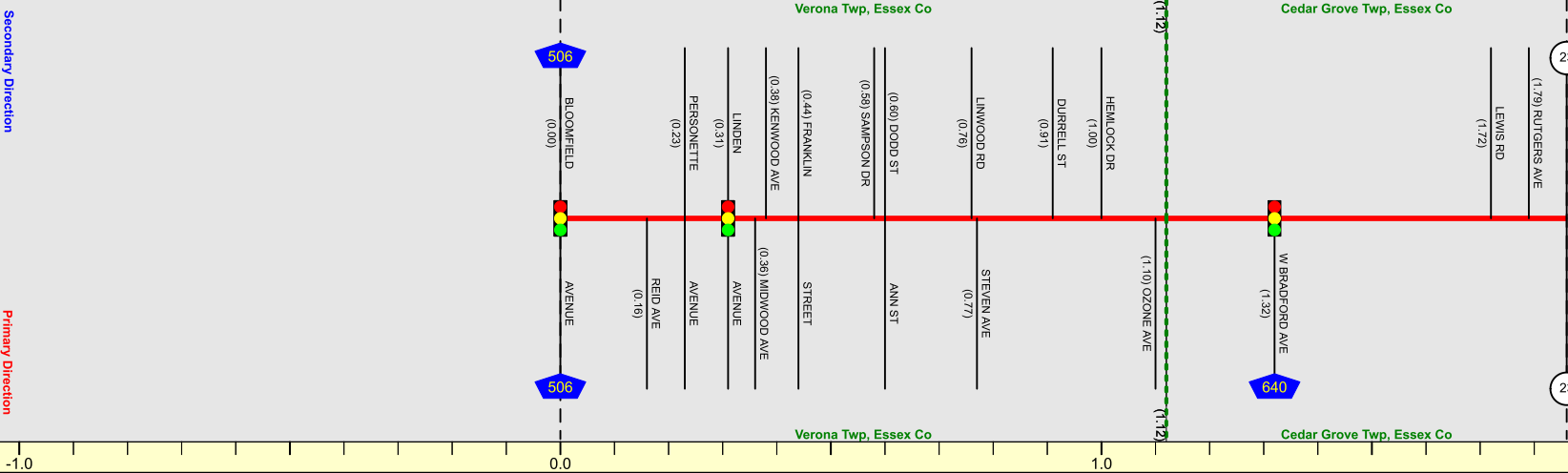
Count Name: Grove Ave & 271
Grove Ave Driveway
Site Code:
Start Date: 02/10/2026
Page No: 6



ESSEX COUNTY 639 (South to North)

Mile Posts: 0.000 - 1.860



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	
Interstate Route  287 US Route  22 NJ Route  33 County Road  689 Interchange Number  2 Grade Separated Interchange  Traffic Signal  Traffic Monitoring Sites  Road Underpass  Road Overpass  Dyn Msg Sign  Secondary Direction Primary Direction	
Street Name	Grove Avenue
Jurisdiction	County
Functional Class	Urban Major Collector
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	25
Number of Lanes	2
Med. Type	None
Med. Width	
Pavement	22
Shoulder	6
Traffic Volume	7,912 (2019) 8,247 (2023)
Traffic Sta. ID	160729 110751
Structure No.	
Enlarged Views	

SRI = 07000639

Date last inventoried: June 2011

Appendix C

Capacity Analysis

10: Grove Avenue (CR 639) & Hemlock Road/Site Driveway

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	15	1	0	0	9	422	1	1	380	2
Future Vol, veh/h	10	0	15	1	0	0	9	422	1	1	380	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	-2	-	-	2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	11	0	17	1	0	0	10	480	1	1	432	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	935	936	433	935	937	480	434	0	0	481	0	0
Stage 1	435	435	-	501	501	-	-	-	-	-	-	-
Stage 2	500	501	-	434	436	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	6.7	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	275	296	642	275	296	606	1136	-	-	1092	-	-
Stage 1	633	613	-	588	577	-	-	-	-	-	-	-
Stage 2	588	577	-	634	612	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	271	292	642	264	292	606	1136	-	-	1092	-	-
Mov Cap-2 Maneuver	271	292	-	264	292	-	-	-	-	-	-	-
Stage 1	632	612	-	581	570	-	-	-	-	-	-	-
Stage 2	581	570	-	616	611	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	14.31		18.69		0.17		0.02					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	37	-	-	415	264	5	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.068	0.004	0.001	-	-				
HCM Ctrl Dly (s/v)	8.2	0	-	14.3	18.7	8.3	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-				

10: Grove Avenue (CR 639) & Hemlock Road/Site Driveway

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	4	1	0	0	12	472	0	1	420	6
Future Vol, veh/h	1	0	4	1	0	0	12	472	0	1	420	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	-2	-	-	2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	1	0	4	1	0	0	13	524	0	1	467	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1023	1023	470	1020	1027	524	473	0	0	524	0	0
Stage 1	472	472	-	551	551	-	-	-	-	-	-	-
Stage 2	551	551	-	469	476	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	6.7	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	242	266	613	243	265	573	1099	-	-	1052	-	-
Stage 1	607	592	-	555	551	-	-	-	-	-	-	-
Stage 2	555	551	-	610	591	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	237	261	613	237	260	573	1099	-	-	1052	-	-
Mov Cap-2 Maneuver	237	261	-	237	260	-	-	-	-	-	-	-
Stage 1	606	592	-	546	542	-	-	-	-	-	-	-
Stage 2	546	542	-	604	590	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	12.82		20.28		0.21		0.02					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	45	-	-	466	237	4	-	-				
HCM Lane V/C Ratio	0.012	-	-	0.012	0.005	0.001	-	-				
HCM Ctrl Dly (s/v)	8.3	0	-	12.8	20.3	8.4	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

10: Grove Avenue (CR 639) & Hemlock Road/Site Driveway

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	15	1	0	0	9	431	1	1	388	2
Future Vol, veh/h	10	0	15	1	0	0	9	431	1	1	388	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	-2	-	-	2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	11	0	17	1	0	0	10	490	1	1	441	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	955	956	442	954	956	490	443	0	0	491	0	0
Stage 1	444	444	-	511	511	-	-	-	-	-	-	-
Stage 2	510	511	-	443	445	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	6.7	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	267	289	635	267	289	598	1128	-	-	1083	-	-
Stage 1	627	608	-	581	572	-	-	-	-	-	-	-
Stage 2	582	572	-	628	607	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	263	285	635	257	285	598	1128	-	-	1083	-	-
Mov Cap-2 Maneuver	263	285	-	257	285	-	-	-	-	-	-	-
Stage 1	626	607	-	574	565	-	-	-	-	-	-	-
Stage 2	574	565	-	610	606	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	14.53		19.09		0.17		0.02					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	37	-	-	406	257	5	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.07	0.004	0.001	-	-				
HCM Ctrl Dly (s/v)	8.2	0	-	14.5	19.1	8.3	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-				

10: Grove Avenue (CR 639) & Hemlock Road/Site Driveway

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	4	1	0	0	12	481	0	1	429	6
Future Vol, veh/h	1	0	4	1	0	0	12	481	0	1	429	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	-2	-	-	2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	1	0	4	1	0	0	13	534	0	1	477	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1043	1043	480	1040	1047	534	483	0	0	534	0	0
Stage 1	482	482	-	561	561	-	-	-	-	-	-	-
Stage 2	561	561	-	479	486	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	6.7	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	235	260	606	236	258	566	1090	-	-	1044	-	-
Stage 1	600	587	-	549	546	-	-	-	-	-	-	-
Stage 2	549	546	-	603	585	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	230	255	606	230	254	566	1090	-	-	1044	-	-
Mov Cap-2 Maneuver	230	255	-	230	254	-	-	-	-	-	-	-
Stage 1	600	586	-	539	537	-	-	-	-	-	-	-
Stage 2	539	537	-	597	584	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	12.98		20.74		0.2		0.02					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	44	-	-	457	230	4	-	-				
HCM Lane V/C Ratio	0.012	-	-	0.012	0.005	0.001	-	-				
HCM Ctrl Dly (s/v)	8.3	0	-	13	20.7	8.5	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

10: Grove Avenue (CR 639) & Hemlock Road/Site Driveway

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	15	12	0	11	9	431	5	5	388	2
Future Vol, veh/h	10	0	15	12	0	11	9	431	5	5	388	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	-2	-	-	2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	11	0	17	14	0	13	10	490	6	6	441	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	964	969	442	965	968	493	443	0	0	495	0	0
Stage 1	453	453	-	513	513	-	-	-	-	-	-	-
Stage 2	510	516	-	452	455	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	6.7	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	264	284	635	263	285	596	1128	-	-	1079	-	-
Stage 1	620	603	-	580	571	-	-	-	-	-	-	-
Stage 2	582	569	-	621	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	253	279	635	251	280	596	1128	-	-	1079	-	-
Mov Cap-2 Maneuver	253	279	-	251	280	-	-	-	-	-	-	-
Stage 1	616	598	-	573	564	-	-	-	-	-	-	-
Stage 2	562	562	-	600	598	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	14.79		16.21		0.17		0.11					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	36	-	-	396	347	23	-					
HCM Lane V/C Ratio	0.009	-	-	0.072	0.075	0.005	-					
HCM Ctrl Dly (s/v)	8.2	0	-	14.8	16.2	8.4	0					
HCM Lane LOS	A	A	-	B	C	A	A					
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-					

10: Grove Avenue (CR 639) & Hemlock Road/Site Driveway

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	4	9	0	8	12	481	11	12	429	6
Future Vol, veh/h	1	0	4	9	0	8	12	481	11	12	429	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-2	-	-	-2	-	-	2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	1	0	4	10	0	9	13	534	12	13	477	7
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1068	1080	480	1071	1077	541	483	0	0	547	0	0
Stage 1	507	507	-	567	567	-	-	-	-	-	-	-
Stage 2	561	573	-	503	510	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	6.7	6.1	6	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	227	248	606	226	249	562	1090	-	-	1033	-	-
Stage 1	584	574	-	545	543	-	-	-	-	-	-	-
Stage 2	549	540	-	586	572	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	215	239	606	216	240	562	1090	-	-	1033	-	-
Mov Cap-2 Maneuver	215	239	-	216	240	-	-	-	-	-	-	-
Stage 1	574	564	-	535	534	-	-	-	-	-	-	-
Stage 2	531	531	-	572	562	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Ctrl Dly, s/v	13.2		17.61			0.2			0.23			
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	43	-	-	445	304	48	-	-				
HCM Lane V/C Ratio	0.012	-	-	0.012	0.062	0.013	-	-				
HCM Ctrl Dly (s/v)	8.3	0	-	13.2	17.6	8.5	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	2	392	40	20	381
Future Vol, veh/h	2	2	392	40	20	381
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	2
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	2	2	456	47	23	443
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	969	479	0	0	502	0
Stage 1	479	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	5.8	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	333	615	-	-	1072	-
Stage 1	679	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	324	615	-	-	1072	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	13.58	0		0.42		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	424		90	-	
HCM Lane V/C Ratio	-	0.011		0.022	-	
HCM Ctrl Dly (s/v)	-	13.6		8.4	0	
HCM Lane LOS	-	B		A	A	
HCM 95th %tile Q(veh)	-	0		0.1	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	2	392	40	20	381
Future Vol, veh/h	2	2	392	40	20	381
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	2
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	2	2	456	47	23	443
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	969	479	0	0	502	0
Stage 1	479	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	5.8	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	333	615	-	-	1072	-
Stage 1	679	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	324	615	-	-	1072	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	13.58	0		0.42		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	424		90	-	
HCM Lane V/C Ratio	-	0.011		0.022	-	
HCM Ctrl Dly (s/v)	-	13.6		8.4	0	
HCM Lane LOS	-	B		A	A	
HCM 95th %tile Q(veh)	-	0		0.1	-	

20: Grove Avenue (CR 639) & 271 Grove Avenue Driveway

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	2	400	41	20	389
Future Vol, veh/h	2	2	400	41	20	389
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	2
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	2	2	465	48	23	452
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	988	489	0	0	513	0
Stage 1	489	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Critical Hdwy	5.8	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	326	607	-	-	1063	-
Stage 1	673	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	316	607	-	-	1063	-
Mov Cap-2 Maneuver	316	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Approach	WB	NB	SB			
HCM Ctrl Dly, s/v	13.75	0	0.41			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	416	88	-	
HCM Lane V/C Ratio	-	-	0.011	0.022	-	
HCM Ctrl Dly (s/v)	-	-	13.8	8.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0.1	-	

20: Grove Avenue (CR 639) & 271 Grove Avenue Driveway

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	4	468	14	8	435
Future Vol, veh/h	1	4	468	14	8	435
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	2
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	4	488	15	8	453
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	965	495	0	0	502	0
Stage 1	495	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Critical Hdwy	5.8	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	335	603	-	-	1073	-
Stage 1	670	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	332	603	-	-	1073	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	12.02	0		0.15		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	518	33	-	
HCM Lane V/C Ratio	-	-	0.01	0.008	-	
HCM Ctrl Dly (s/v)	-	-	12	8.4	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

20: Grove Avenue (CR 639) & 271 Grove Avenue Driveway

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	2	411	41	20	393
Future Vol, veh/h	2	2	411	41	20	393
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	2
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	2	2	478	48	23	457
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1005	502	0	0	526	0
Stage 1	502	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Critical Hdwy	5.8	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	319	598	-	-	1051	-
Stage 1	666	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	310	598	-	-	1051	-
Mov Cap-2 Maneuver	310	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	13.92	0		0.41		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	408	87	-	
HCM Lane V/C Ratio	-	-	0.011	0.022	-	
HCM Ctrl Dly (s/v)	-	-	13.9	8.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0.1	-	

20: Grove Avenue (CR 639) & 271 Grove Avenue Driveway

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	4	476	14	8	446
Future Vol, veh/h	1	4	476	14	8	446
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-3	-	-2	-	-	2
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	1	4	496	15	8	465
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	984	503	0	0	510	0
Stage 1	503	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Critical Hdwy	5.8	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	327	597	-	-	1065	-
Stage 1	665	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	324	597	-	-	1065	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	665	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Approach	WB	NB		SB		
HCM Ctrl Dly, s/v	12.12	0		0.15		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 511		32	-	
HCM Lane V/C Ratio	-	- 0.01		0.008	-	
HCM Ctrl Dly (s/v)	-	- 12.1		8.4	0	
HCM Lane LOS	-	- B		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	