



TRAFFIC IMPACT STUDY

PROPOSED WAREHOUSE DEVELOPMENT: BUILDINGS A & B

Proposed Warehouse
Development
Block 88.02, Lot 13.01
NJSH Route 27
Township of Franklin,
Somerset County, New Jersey

Prepared For:
Elion Partners

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STONEFIELD

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INTRODUCTION

This Traffic Impact Study was prepared to investigate the potential impacts of the proposed warehouse development on the adjacent roadway network. The subject property is located along NJSH Route 27 southbound, between Veronica Avenue and Bennetts Lane, in the Township of Franklin, Somerset County, New Jersey. The site location is shown on appended **Figure I**.

The subject property is designated as Block 88.02, Lot 13.01 as depicted on the Township of Franklin Tax Map. The site has approximately 210 feet of frontage along NJSH Route 27. The existing site is currently undeveloped. The Township of Franklin Planning Board has approved two (2) warehouse buildings totaling 544,050 square feet located on Block 88.02, Lot 71.01, which would provide access via one (1) full-movement driveway along Veronica Avenue. Under the proposed development program, two (2) warehouse buildings totaling 150,000 square feet would be constructed on Lot 13.01. Access to the warehouse buildings is proposed via a cross-access connection to the approved warehouse development on Block 88.02, Lot 71.01.

METHODOLOGY

Stonefield Engineering & Design, LLC has prepared this Traffic Impact Study in accordance with the recommended guidelines and practices outlined by the Institute of Transportation Engineers (ITE) within Transportation Impact Analyses for Site Development. A detailed field investigation was performed to assess the existing conditions of the adjacent roadway network. A data collection effort was completed to identify the existing traffic volumes at the study intersections to serve as a base for the traffic analyses. Capacity analysis, a procedure used to estimate the traffic-carrying ability of roadway facilities over a range of defined operating conditions, was performed using the Highway Capacity Manual, 6th Edition (HCM) and the /Synchro 10 Software for all study conditions to assess the roadway operations.

For an unsignalized intersection, Level of Service (LOS) A indicates operations with delay of less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay of less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 80 seconds per vehicle. The Technical Appendix contains the Highway Capacity Analysis Detail Sheets for the study intersections analyzed in this assessment. The traffic signal timing utilized within the signalized analysis is based signal timing directives provided by the New Jersey Department of Transportation (NJDOT).

2021 EXISTING CONDITION

2021 EXISTING ROADWAY CONDITIONS

The proposed warehouse development is located along NJSH Route 27 southbound, between Veronica Avenue and Bennetts Lane, in the Township of Franklin, Somerset County, New Jersey. The subject property is designated as Block 88.02, Lot 13 as depicted on the Township of Franklin Tax Map. The site has approximately 210 feet of frontage along NJSH Route 27. Land uses in the area are a mix of retail, commercial, residential, and industrial uses.

NJSH Route 27 is classified as an Urban Principal Arterial roadway with a general north-south orientation and is under the jurisdiction of the NJDOT. Along site frontage, the roadway provides one (1) lane of travel in each direction and has a posted speed limit of 40 mph. Curb and sidewalk are provided along both sides of the roadway, shoulders are provided along both sides of the roadway, and on-street parking is not permitted. NJSH Route 27 provides north-south mobility through the Township of Franklin and surrounding municipalities and provides access to U.S. Route 206 to the south of the site for a mix of commercial, retail, and residential uses along its length.

Veronica Avenue is classified as an Urban Minor Arterial roadway with a general east-west orientation and is under the jurisdiction of the Township of Franklin. Along the site frontage, the roadway provides one (1) lane of travel in each direction and has a posted speed limit of 40 mph. Curb is provided along both sides of the roadway, sidewalk is provided along the southerly side of the roadway, shoulders are not provided along either side of the roadway, and on-street parking is not permitted along either side of the roadway. Veronica Avenue connects Hamilton Street at its western terminus to NJSH Route 27 at its eastern terminus for a mix of commercial and industrial uses along its length.

How Lane (County Road 680) is classified as an Urban Minor Arterial roadway with a general east-west orientation and is under the jurisdiction of Middlesex County. Along the site frontage, the roadway provides one (1) lane of travel in each direction and has a posted speed limit of 40 mph. Curb and sidewalk are provided along the northerly side of the roadway and are not provided along the southerly side of the roadway, shoulders are not provided along either side of the roadway, and on-street parking is not permitted along either side of the roadway. How Lane connects NJSH Route 27 at its western terminus to Livingston Avenue at its eastern terminus and provides access to NJSH Route 91. Land uses along How Lane are a mix of commercial, industrial, and residential.

Bennetts Lane is classified as an Urban Minor Arterial roadway with a general east-west orientation and is under the jurisdiction of the Township of Franklin. Along site frontage the roadway provides one (1) lane of travel in each direction and has a posted speed limit of 40 mph. Curb and sidewalk are not provided along either side of the roadway, shoulders are not provided, and on-street parking is not permitted. Bennetts Lane

provides east-west mobility within the Township of Franklin and provides access to NJSH Route 27 at its easterly terminus for a mix of retail, agricultural, and industrial uses along its length.

NJSH Route 27, Veronica Avenue, and How Lane intersect to form a four (4)-leg intersection controlled by a four (4)-phase traffic signal operating on a 100-second fixed background. The northbound approach of NJSH Route 27 provides one (1) exclusive left-turn lane, one (1) exclusive through lane, and one (1) shared through/right-turn lane and the southbound approach of NJSH Route 27 provides one (1) exclusive left-turn lane, one (1) exclusive through lane, and one (1) exclusive right-turn lane. The eastbound approach of Veronica Avenue and westbound approach of How Lane each provide one (1) exclusive left-turn lane and one (1) shared through/right-turn lane. Crosswalks and pedestrian signals are provided across all legs of the intersection.

2021 EXISTING TRAFFIC VOLUMES

Manual turning movement counts were collected during the typical weekday morning and weekday evening time periods to evaluate existing traffic conditions and identify the specific hours when traffic activity on the adjacent roadways is at a maximum and could be potentially impacted by the development of the site. Turning movement counts were collected at the intersection of NJSH Route 27, Veronica Avenue, and How Lane. Specifically, manual turning movement counts were conducted at the intersection of NJSH Route 27, Veronica Avenue, and How Lane on Wednesday, November 17, 2021 from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.

The study time periods were chosen as they are representative of the peak periods of both the adjacent roadway network and the proposed development. The traffic volume data was collected and analyzed to identify the design peak hour in accordance with HCM and ITE guidelines. Based on the review of the count data the weekday morning peak hour occurred from 7:15 a.m. to 8:15 a.m. and the weekday evening peak hour occurred from 5:00 p.m. to 6:00 p.m. The 2021 Existing Traffic Volumes are summarized on appended **Figure 2**.

2021 EXISTING LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the 2021 Existing Condition during the weekday morning and weekday evening peak hours at the study intersection. Under the existing condition, the signalized intersection of NJSH Route 27, Veronica Avenue, and How Lane is calculated to operate at overall Level of Service E during the weekday morning and evening peak hours. The eastbound through/right-turn movements of Veronica Avenue during the weekday morning and weekday evening peak hours and the southbound through movement of NJSH Route 27 during the weekday evening peak hour are calculated to operate under capacity constraints.

2024 NO-BUILD CONDITION

BACKGROUND GROWTH

The 2021 Existing Condition traffic volume data was grown to a future horizon year of 2024, which is a conservative estimate for when the proposed warehouse development is expected to be fully constructed. In accordance with industry guidelines, the existing traffic volumes at the study intersections were increased by 1.25% annually for three (3) years to generate the 2024 Base Traffic Volumes. These volumes are summarized on appended **Figure 3**. The 1.25% background growth rate was obtained from the NJDOT Annual Background Growth Rate Table.

OTHER PLANNED DEVELOPMENT PROJECTS

To evaluate the future traffic conditions, it is important to consider the potential site-generated traffic of other projects that could influence the traffic volume at the study intersections. Other planned development projects include those that are either in the entitlement process or have recently been approved for building permits in proximity to the proposed development. Based on research the following developments are anticipated to impact traffic volumes within the study area:

- ◆ Previously Approved Warehouse Development (Franklin Township) – Block 88.02, Lots 13 & 72: 544,050 square feet of warehouse space located along Veronica Avenue with access provided along Veroncia Avenue to the west of the site;
- ◆ Previously Approved Car Wash Development (City of New Brunswick) - Block 597.01, Lot 1.02: 3,500 square-foot car wash with one (1) car wash tunnel located at the northeasterly quadrant of the intersection of NJSH Route 27, How Lane, and Veronica Avenue to the northeast of the site.

Appended **Figure 4** illustrates the site-generated traffic associated with the previously approved developments assigned to the study area network.

2024 NO-BUILD TRAFFIC VOLUMES

The site-generated trips associated with the previously approved developments were added to the 2024 Base Traffic Volumes to calculate the 2024 No-Build Traffic Volumes for the weekday morning and weekday evening peak hours. These volumes are summarized on appended **Figure 5**.

2024 NO-BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2024 No-Build Condition during the weekday morning and weekday evening peak hours at the study intersection. The signalized intersection of NJSH Route 27, Veronica Avenue, and How Lane is calculated to operate overall Level of Service F during the weekday morning and weekday evening peak hours. The eastbound and westbound

through/right-turn movements and the southbound through movement during the weekday morning and weekday evening peak hours are calculated to operate under capacity constraints. The turning movements at the site driveway along Veronica Avenue are calculated to operate at Level of Service B or better during the weekday morning peak hour and Level of Service C or better during the weekday evening peak hour.

2024 BUILD CONDITION

The site-generated traffic volume of the proposed warehouse development was estimated to identify the potential impacts of the project. For the purpose of this analysis, a complete project “build out” is assumed within two (2) years of the preparation of this study.

TRIP GENERATION

Trip generation projections for the proposed warehouse development were prepared utilizing the ITE’s Trip Generation Manual, 11th Edition. Trip generation rates associated with Land Use 150 “Warehousing,” were cited for the proposed warehouse development consisting of 150,000 total square feet of warehouse space. **Table 1** provides the weekday morning and weekday evening trip generation volumes associated with the proposed development.

TABLE 1 – PROPOSED TRIP GENERATION

Land Use	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
150,000 SF Warehouse <i>ITE Land Use 150</i>	20	6	26	8	19	27

It is noted, ITE’s Trip Generation Manual, 11th Edition provides trip generation in terms of truck trips for Land Use 150 “Warehousing.” **Table 2** provides the weekday morning and weekday evening peak-hour trip generation volumes associated with the warehouse portion of the warehouse development in terms of vehicle type.

TABLE 2 – PROPOSED WAREHOUSE TRIP GENERATION BY VEHICLE TYPE

Land Use	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Passenger Vehicle Trips	18	5	23	6	16	22
Truck Trips	2	1	3	2	3	5
Total Warehouse Trips	20	6	26	8	19	27

TRIP GENERATION COMPARISON

Driveway counts were conducted at the LGE US Distributions warehouse located at 50 Veronica Avenue from 7:00 a.m. to 9:00 a.m. on Wednesday, November 17, 2021. Counts were conducted to provide a

comparison between the ITE peak hour trip generation and the actual peak hour trip generation of the development when fully operational. **Table 3** provides the weekday morning and weekday evening peak-hour trip generation comparison between the ITE trip generation and the as-counted trip generation.

TABLE 3 – LGE DISTRIBUTION WAREHOUSE TRIP GENERATION COMPARISON

Land Use	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
<i>Previously Approved Trip Generation</i>	72	22	94	28	77	105
<i>As-Counted Trip Generation</i>	13	10	23	20	26	46
Trip Generation Difference	-59	-12	-71	-8	-51	-59

As shown in Table 3, the as-counted peak hour trip generation of the LG Distribution warehouse located across from Veronica Avenue was significantly less than the projected ITE trip generation. The comparison shows that ITE trip generation projections for sites similar to the one proposed often overestimate the actual peak hour trip generation and provide a conservative trip generation estimate. For the purpose of this analysis and to maintain a conservative analysis, the entirety of the ITE trip generation projections for the proposed development were utilized within the analysis.

TRIP ASSIGNMENT/DISTRIBUTION

The trips generated by the proposed warehouse were distributed according to the locations of major arterial roadways and highways relative to the site and the access management plan of the site. It is expected that a majority of passenger vehicles and trucks would travel from Interstate 95 and Interstate 287 to access the site. The Warehouse Passenger Vehicle Site-Generated Traffic Volumes and Warehouse Truck Site-Generated Traffic Volumes are depicted on **Figures 6** and **7**, respectively. **Table 4** provides the proposed warehouse site-generated trip distribution.

TABLE 4 –SITE-GENERATED TRIP DISTRIBUTION

Destination	Percentage
To/From North – via NJSH Route 27	30%
To/From South – via NJSH Route 27	30%
To/From East – via Veronica Avenue/How Lane	20%
To/From West – via Veronica Avenue and Bennetts Lane	20%
TOTAL	100%

2024 BUILD TRAFFIC VOLUMES

The site-generated trips were added to the 2024 No-Build Traffic Volumes to calculate the 2024 Build Traffic Volumes and are shown on appended **Figure 8**.

2024 BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2024 Build Condition during the weekday morning and weekday evening peak hours at the study intersection and proposed site driveways. Appended **Table AI** compares the Existing, No-Build, and Build Conditions Level of Service and delay values.

The signalized intersection of NJSH Route 27, Veronica Avenue, and How Lane is calculated to operate at overall Level of Service F during the weekday morning and weekday evening peak hours. The eastbound and westbound through/right-turn movements and the southbound through movement during the weekday morning and weekday evening peak hours are calculated to operate under capacity constraints. The turning movements at the unsignalized site driveways along NJSH Route 27 and Veronica Avenue are calculated to operate at Level of Service B or better during the weekday morning peak hour and at Level of Service C or better during the weekday evening peak hour.

It is noted at the intersection of NJSH Route 27, Veronica Avenue, and How Lane, the proposed development would result in a 1.9% increase in overall delay during the weekday morning peak hour and a 3.6% increase in overall delay during the weekday evening peak hour compared to the No-Build Condition. In addition, the proposed development would result in a 0.7% increase in total traffic volume at the intersection during the weekday morning and weekday evening peak hours. As such, the proposed development does not result in a significant adverse impact to the intersection of NJSH Route 27, Veronica Avenue, and How Lane.

SITE CIRCULATION/PARKING SUPPLY

A review was conducted of the proposed warehouse development using the Conceptual Site Plan, dated December 21, 2021 prepared by Paulus, Sokolowski, and Sartor, LLC. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Under the proposed development plan two (2) warehouse buildings totaling 150,000 square feet would be constructed on Lot 13.01. The warehouse space would be divided into two (2) buildings with Building 'A' totaling 75,000 square feet and Building 'B' totaling 75,000 square feet located to the east of Building 'A'. Access to the proposed warehouse buildings is proposed via a cross-access connection to the approved warehouse development on Block 88.02, Lot 71.01, which provides access via one (1) full-movement driveway along Veronica Avenue. Surface passenger vehicle spaces would be located along the drive aisles to the west of Building 'A' and to the east of Building 'B' and truck loading spaces would be located between Buildings 'A' and 'B'. Two-way vehicular circulation throughout the site would be facilitated via a minimum of 26-foot-wide drive aisles.

Regarding the parking requirements for the proposed development, the Township of Franklin Ordinance requires one (1) parking space per 1,000 square feet of warehouse space for the first 5,000 square feet, one (1) space per 2,500 square feet after 5,000, and one (1) space per 250 square feet of office space. For the

proposed 150,000 square feet of total warehouse space with 135,000 square feet of usable warehouse space and 15,000 square feet of office space, this equates to 120 required parking spaces. The site would provide 275 total parking spaces, inclusive of 16 ADA-accessible spaces, which meets the parking requirement for the proposed development and would be sufficient to support this project's parking demand. The site would also provide a total of 66 loading docks.

CONCLUSIONS

This report was prepared to examine the potential traffic impact of the proposed warehouse development. The analysis findings, which have been based on industry-standard guidelines, indicate that the proposed development would not have a significant impact on the traffic operations of the adjacent roadway network. Due to the low trip generation of the proposed warehouse, the proposed development is not expected to have a significant impact on the intersection of NJSH Route 27, Veronica Avenue, and How Lane. The site driveways and on-site layout have been designed to provide for effective access to and from the subject property. Based on the Township of Franklin Ordinance, industry data, and local characteristics of the site and surrounding area, the parking supply would be sufficient to support this project.

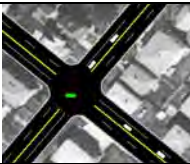
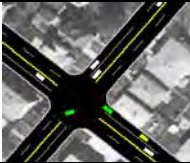

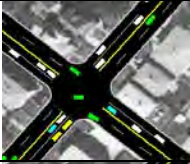
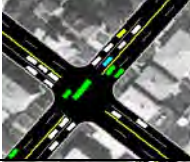

TECHNICAL APPENDIX

LEVEL OF SERVICE/AVERAGE CONTROL DELAY CRITERIA

LEVEL OF SERVICE /AVERAGE CONTROL DELAY CRITERIA

The ability of a roadway to effectively accommodate traffic demand is determined through an assessment of the volume-to-capacity ratio, delay and Level of Service of the lane group and/or intersection. The volume-to-capacity ratio is the ratio of traffic flow rate to capacity for a given transportation facility. As defined within the Highway Capacity Manual, 6th Edition (HCM), intersection delay is the total additional travel time experienced by drivers, passengers, or pedestrians as a result of control measures and interaction with other users of the facility, divided by the volume departing from the corresponding cross section of the facility. Level of service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

For an unsignalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle and LOS F denotes operations with delay in excess of 80 seconds per vehicle.

	Level Of Service (LOS)	Signalized Delay Range (average control delay in sec/veh)	Unsignalized Delay Range (average control delay in sec/veh)
	A	<=10	<=10
	B	>10 and <=20	>10 and <=15
	C	>20 and <=35	>15 and <=25
	D	>35 and <=55	>25 and <=35
	E	>55 and <=80	>35 and <=50
	F	>80	>50

Source: Highway Capacity Manual, 6th Edition

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Table A1: Comparative Level of Service (Delay) Table

Township of Franklin, Somerset County, New Jersey

X (n) = Level of Service (seconds of delay)

Intersection	Lane Group	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		2021 Existing Condition	2024 No-Build Condition	2024 Build Condition	2021 Existing Condition	2024 No-Build Condition	2024 Build Condition
Veronica Avenue/How Lane (E/W) & NJSH Route 27 (N/S)	EB Left	C (29.2)	C (29.7)	C (29.7)	C (28.3)	C (33.4)	C (34.4)
	EB Through/Right	F (285.4)	F (316.8)	F (321.8)	F (269.9)	F (332.8)	F (345.8)
	WB Left	C (28.6)	C (28.8)	C (28.8)	C (32.4)	D (47.9)	D (49.0)
	WB Through/Right	E (65.6)	F (96.5)	F (100.5)	D (49.2)	F (93.3)	F (97.4)
	NB Left	C (20.3)	C (21.9)	C (22.0)	C (21.8)	C (23.7)	C (23.8)
	NB Through	C (26.0)	C (28.2)	C (28.3)	C (24.4)	C (26.3)	C (26.4)
	NB Through/Right	C (26.2)	C (28.4)	C (28.5)	C (24.4)	C (26.3)	C (26.4)
	SB Left	B (17.5)	B (19.1)	B (19.3)	B (16.2)	B (18.7)	B (19.0)
	SB Through	E (71.0)	F (83.0)	F (84.4)	F (98.8)	F (119.8)	F (121.7)
	SB Right	B (17.3)	B (19.0)	B (19.3)	B (17.6)	B (18.8)	B (19.0)
Overall	E (76.8)	F (88.7)	F (90.4)	E (79.2)	F (102.6)	F (106.3)	
Veronica Avenue (E/W) & Site Driveway (N)	WB Left/Through		A (8.4)	A (8.7)		A (8.5)	A (8.5)
	NB Left/Right		B (12.9)	B (12.8)		C (15.1)	C (16.4)

TURNING MOVEMENT COUNT DATA



Project: Route 27 & Veronica Avenue
 Municipality: New Brunswick, Middlesex County, NJ
 Setup: MAK
 Location: 40.474466, -74.489521

Imperial Traffic & Data Collection
 www.imperialtdc.com
 PO BOX 4637
 Cherry Hill, New Jersey, United States 08034
 609-706-6100 htrey@imperialtdc.com

Count Name: 1. Route 27, Veronica Avenue, and How Lane
 Site Code: 1
 Start Date: 11/17/2021
 Page No: 1

Turning Movement Data

Start Time	Veronica Avenue Eastbound					How Lane Westbound					Route 27 Northbound					Route 27 Southbound													
	U-Turn	Left	Thru	Right on Red	App. Total	U-Turn	Left	Thru	Right on Red	App. Total	U-Turn	Left	Thru	Right on Red	App. Total	U-Turn	Left	Thru	Right on Red	App. Total	U-Turn	Left	Thru	Right on Red	App. Total				
7:00 AM	0	7	54	12	3	0	76	0	20	69	28	1	0	118	0	37	93	29	2	0	161	0	36	74	3	5	0	118	473
7:15 AM	0	13	66	11	2	0	92	0	27	75	19	0	1	121	0	25	121	47	1	0	194	0	45	86	6	7	0	144	551
7:30 AM	0	16	66	14	0	0	96	0	24	83	25	0	1	132	0	25	127	36	0	0	188	0	54	86	10	2	0	152	568
7:45 AM	0	20	94	8	1	0	123	0	14	87	14	0	1	115	0	52	130	42	2	0	226	0	50	103	8	6	0	167	631
Hourly Total	0	56	280	45	6	0	387	0	65	314	86	1	3	488	0	139	471	154	5	0	769	0	185	349	27	20	0	581	2223
8:00 AM	0	12	68	13	0	0	93	0	21	65	27	0	0	113	0	36	145	43	3	0	227	0	53	99	18	2	0	172	605
8:15 AM	0	10	55	12	0	0	77	0	19	77	14	0	0	110	0	50	152	24	6	0	232	0	34	71	10	11	0	126	545
8:30 AM	0	17	83	9	1	0	110	0	21	67	11	1	0	100	0	46	152	25	0	0	223	0	38	74	13	4	0	129	562
8:45 AM	0	19	83	11	0	0	113	0	15	93	8	1	2	117	0	39	143	23	4	1	209	0	45	91	12	3	0	151	590
Hourly Total	0	58	289	45	1	0	393	0	76	302	60	2	2	440	0	171	592	115	13	1	891	0	170	335	53	20	0	578	2302
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	27	75	14	0	1	116	0	35	80	12	2	0	129	0	21	127	12	3	0	163	0	48	123	7	5	0	183	591
4:15 PM	0	23	64	16	1	0	104	0	32	80	17	6	2	135	0	40	141	14	7	1	202	0	42	125	7	11	0	185	626
4:30 PM	0	25	54	20	4	2	103	0	39	78	19	4	0	140	0	26	130	13	6	0	175	0	41	137	9	8	0	195	613
4:45 PM	0	24	60	15	4	0	103	0	47	74	17	4	0	142	0	23	104	15	5	1	147	0	35	128	9	13	0	185	577
Hourly Total	0	99	253	65	9	3	426	0	153	312	65	16	2	546	0	110	502	54	21	2	687	0	166	513	32	37	0	748	2407
5:00 PM	0	28	66	14	4	0	112	0	29	89	13	4	0	135	0	23	116	10	9	0	158	0	47	132	9	2	0	190	595
5:15 PM	0	31	71	26	2	0	130	0	27	77	17	4	0	125	0	33	144	15	5	0	197	0	60	130	5	2	0	197	649
5:30 PM	0	23	77	18	5	0	123	0	43	81	12	6	1	142	0	18	117	30	2	0	167	0	48	119	12	4	0	183	615
5:45 PM	0	15	61	12	7	0	95	0	50	86	16	2	0	154	0	36	120	14	5	0	175	0	49	116	2	8	0	175	599
Hourly Total	0	97	275	70	18	0	460	0	149	333	58	16	1	556	0	110	497	69	21	0	697	0	204	497	28	16	0	745	2458
6:00 PM	0	12	71	11	4	0	98	1	30	81	25	1	0	138	0	19	87	15	2	0	123	0	35	133	9	0	0	177	536
6:15 PM	0	16	79	10	2	0	107	0	37	63	31	1	0	132	0	20	104	19	4	0	147	0	45	117	7	3	0	172	558
6:30 PM	0	15	67	17	1	0	100	0	31	70	23	4	0	128	0	28	96	18	8	0	150	0	45	121	6	1	0	173	551
6:45 PM	0	13	48	14	1	0	76	0	36	58	34	3	0	131	0	13	101	19	3	0	136	0	40	122	6	5	0	173	516
Hourly Total	0	56	265	52	8	0	381	1	134	272	113	9	0	529	0	80	388	71	17	0	556	0	165	483	28	9	0	695	2161
Grand Total	0	366	1362	277	42	3	2047	1	597	1533	382	44	8	2557	0	610	2450	463	77	3	3600	0	890	2187	168	102	0	3347	11551
Approach %	0.0	17.9	66.5	13.5	2.1	-	-	0.0	23.3	60.0	14.9	1.7	-	-	0.0	16.9	68.1	12.9	2.1	-	-	0.0	26.6	65.3	5.0	3.0	-	-	-
Total %	0.0	3.2	11.8	2.4	0.4	-	17.7	0.0	5.2	13.3	3.3	0.4	-	22.1	0.0	5.3	21.2	4.0	0.7	-	31.2	0.0	7.7	18.9	1.5	0.9	-	29.0	-
Lights	0	348	1227	264	42	-	1881	1	579	1406	364	39	-	2389	0	590	2353	446	75	-	3464	0	859	2119	159	99	-	3236	10970
% Lights	-	95.1	90.1	95.3	100.0	-	91.9	100.0	97.0	91.7	95.3	88.6	-	93.4	-	96.7	96.0	96.3	97.4	-	96.2	-	96.5	96.9	94.6	97.1	-	96.7	95.0
Buses	0	4	10	6	0	-	20	0	8	6	3	0	-	17	0	2	66	7	0	-	75	0	12	39	2	0	-	53	165
% Buses	-	1.1	0.7	2.2	0.0	-	1.0	0.0	1.3	0.4	0.8	0.0	-	0.7	-	0.3	2.7	1.5	0.0	-	2.1	-	1.3	1.8	1.2	0.0	-	1.6	1.4
Trucks	0	14	125	7	0	-	146	0	10	121	15	5	-	151	0	18	31	10	2	-	61	0	19	29	7	3	-	58	416
% Trucks	-	3.8	9.2	2.5	0.0	-	7.1	0.0	1.7	7.9	3.9	11.4	-	5.9	-	3.0	1.3	2.2	2.6	-	1.7	-	2.1	1.3	4.2	2.9	-	1.7	3.6



Project: Route 27 & Veronica
 Municipality: New Brunswick, Middlesex County,
 NJ
 Setup: MAK
 Location: 40.474466, -74.489521

Imperial Traffic & Data Collection
 www.imperialtdc.com
 PO BOX 4637
 Cherry Hill, New Jersey, United States 08034
 609-706-6100 htrey@imperialtdc.com

Count Name: 1. Route 27, Veronica Avenue,
 and How Lane
 Site Code: 1
 Start Date: 11/17/2021
 Page No: 4

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Veronica Avenue Eastbound						How Lane Westbound						Route 27 Northbound						Route 27 Southbound																
	U-Turn	Left	Thru	Right on Red	Peds on Red	App. Total	U-Turn	Left	Thru	Right on Red	Peds on Red	App. Total	U-Turn	Left	Thru	Right on Red	Peds on Red	App. Total	U-Turn	Left	Thru	Right on Red	Peds on Red	App. Total	U-Turn	Left	Thru	Right on Red	Peds on Red	App. Total					
7:15 AM	0	13	66	11	2	0	92	0	27	75	19	0	1	121	0	25	121	47	1	0	194	0	45	86	6	7	0	144	0	54	86	10	2	0	152
7:30 AM	0	16	66	14	0	0	96	0	24	83	25	0	1	132	0	25	127	36	0	0	188	0	54	86	10	2	0	152	0	50	103	8	6	0	167
7:45 AM	0	20	94	8	1	0	123	0	14	87	14	0	1	115	0	52	130	42	2	0	226	0	53	99	18	2	0	172	0	53	99	18	2	0	172
8:00 AM	0	12	68	13	0	0	93	0	21	65	27	0	0	113	0	36	145	43	3	0	227	0	202	374	42	17	0	635	0	202	374	42	17	0	635
Total	0	61	294	46	3	0	404	0	86	310	85	0	3	481	0	138	523	168	6	0	835	0	31.8	58.9	6.6	2.7	-	-	0	31.8	58.9	6.6	2.7	-	-
Approach %	0.0	15.1	72.8	11.4	0.7	-	-	0.0	17.9	64.4	17.7	0.0	-	-	0.0	16.5	62.6	20.1	0.7	-	-	0.0	8.6	15.9	1.8	0.7	-	-	0.0	8.6	15.9	1.8	0.7	-	-
Total %	0.0	2.6	12.5	2.0	0.1	-	17.2	0.0	3.7	13.2	3.6	0.0	-	20.4	0.0	5.9	22.2	7.1	0.3	-	35.5	0.0	0.935	0.908	0.583	0.607	-	0.923	0.000	0.935	0.908	0.583	0.607	-	0.923
PHF	0.000	0.763	0.782	0.821	0.375	-	0.821	0.000	0.796	0.891	0.787	0.000	-	0.911	0.000	0.663	0.902	0.894	0.500	-	0.920	0.000	0.189	0.355	0.39	0.17	-	0.600	0.000	0.189	0.355	0.39	0.17	-	0.600
Lights	0	58	266	42	3	-	369	0	79	268	80	0	-	427	0	131	508	159	6	-	804	0	189	355	39	17	-	600	0	189	355	39	17	-	600
% Lights	-	95.1	90.5	91.3	100.0	-	91.3	-	91.9	86.5	94.1	-	-	88.8	-	94.9	97.1	94.6	100.0	-	96.3	-	93.6	94.9	92.9	100.0	-	94.5	-	93.6	94.9	92.9	100.0	-	94.5
Buses	0	1	6	2	0	-	9	0	4	1	2	0	-	7	0	2	8	4	0	-	14	0	5	13	1	0	-	19	0	5	13	1	0	-	19
% Buses	-	1.6	2.0	4.3	0.0	-	2.2	-	4.7	0.3	2.4	-	-	1.5	-	1.4	1.5	2.4	0.0	-	1.7	-	2.5	3.5	2.4	0.0	-	3.0	-	2.5	3.5	2.4	0.0	-	3.0
Trucks	0	2	22	2	0	-	26	0	3	41	3	0	-	47	0	5	7	5	0	-	17	0	8	6	2	0	-	16	0	8	6	2	0	-	16
% Trucks	-	3.3	7.5	4.3	0.0	-	6.4	-	3.5	13.2	3.5	-	-	9.8	-	3.6	1.3	3.0	0.0	-	2.0	-	4.0	1.6	4.8	0.0	-	2.5	-	4.0	1.6	4.8	0.0	-	2.5
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	-	-		
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	33.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	2	-	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	-	-		
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	66.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		



Project: Route 27 & Veronica Avenue
 Municipality: New Brunswick, Middlesex County, NJ
 Setup: MAK
 Location: 40.474466, -74.489521

Imperial Traffic & Data Collection
 www.imperialtdc.com
 PO BOX 4637
 Cherry Hill, New Jersey, United States 08034
 609-706-6100 htrey@imperialtdc.com

Count Name: 1. Route 27, Veronica Avenue, and How Lane
 Site Code: 1
 Start Date: 11/17/2021
 Page No: 6

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Veronica Avenue Eastbound						How Lane Westbound						Route 27 Northbound						Route 27 Southbound										
	U-Turn	Left	Thru	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right on Red	Peds
5:00 PM	0	28	66	14	4	0	112	0	29	89	13	4	0	135	0	23	116	10	9	0	158	0	47	132	9	2	0	190	595
5:15 PM	0	31	71	26	2	0	130	0	27	77	17	4	0	125	0	33	144	15	5	0	197	0	60	130	5	2	0	197	649
5:30 PM	0	23	77	18	5	0	123	0	43	81	12	6	1	142	0	18	117	30	2	0	167	0	48	119	12	4	0	183	615
5:45 PM	0	15	61	12	7	0	95	0	50	86	16	2	0	154	0	36	120	14	5	0	175	0	49	116	2	8	0	175	599
Total	0	97	275	70	18	0	460	0	149	333	58	16	1	556	0	110	497	69	21	0	697	0	204	497	28	16	0	745	2458
Approach %	0.0	21.1	59.8	15.2	3.9	-	-	0.0	26.8	59.9	10.4	2.9	-	-	0.0	15.8	71.3	9.9	3.0	-	-	0.0	27.4	66.7	3.8	2.1	-	-	-
Total %	0.0	3.9	11.2	2.8	0.7	-	18.7	0.0	6.1	13.5	2.4	0.7	-	22.6	0.0	4.5	20.2	2.8	0.9	-	28.4	0.0	8.3	20.2	1.1	0.7	-	30.3	-
PHF	0.000	0.782	0.893	0.673	0.643	-	0.885	0.000	0.745	0.935	0.853	0.867	-	0.903	0.000	0.764	0.863	0.575	0.583	-	0.885	0.000	0.850	0.941	0.583	0.500	-	0.945	0.947
Lights	0	94	256	69	18	-	437	0	147	311	57	16	-	531	0	103	481	69	21	-	674	0	201	486	27	15	-	729	2371
% Lights	-	96.9	93.1	98.6	100.0	-	95.0	-	98.7	93.4	98.3	100.0	-	95.5	-	93.6	96.8	100.0	100.0	-	96.7	-	98.5	97.8	96.4	93.8	-	97.9	96.5
Buses	0	1	1	0	0	-	2	0	1	0	0	0	-	1	0	0	8	0	0	-	8	0	0	2	0	0	-	2	13
% Buses	-	1.0	0.4	0.0	0.0	-	0.4	-	0.7	0.0	0.0	0.0	-	0.2	-	0.0	1.6	0.0	0.0	-	1.1	-	0.0	0.4	0.0	0.0	-	0.3	0.5
Trucks	0	2	18	1	0	-	21	0	1	22	1	0	-	24	0	7	8	0	0	-	15	0	3	9	1	1	-	14	74
% Trucks	-	2.1	6.5	1.4	0.0	-	4.6	-	0.7	6.6	1.7	0.0	-	4.3	-	6.4	1.6	0.0	0.0	-	2.2	-	1.5	1.8	3.6	6.3	-	1.9	3.0
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SIGNAL TIMING DIRECTIVE

Route NJ 27 & How Lane/Veronica Avenue
 New Brunswick City/North Brunswick Twp., Middlesex Co.
 Franklin, Twp., Somerset Co.

100 SECOND BACKGROUND AND 67-86 SECOND VARIABLE CYCLES

NORMAL OPERATION

PHASE	SIGNAL INDICATIONS										TIME (SECONDS)				
	1-3	4	5-7	8	11-12	13	10-22	9	14-17	18-21	Plan I (100)	Plan II (100)	Plan III (100)	Plan IV (100)	Plan V (67-77)
A. Route NJ 27 Lead Lefts Change	R/<G- R/<Y-	R R	R/<G- R/<Y-	R R	R R	R R	R R	R R	DW DW	DW DW	5-11 3	5-9 3	5-9 3	5-9 3	5 3
B. Route NJ 27 ROW Pedestrian Clearance Change Clearance	G G Y R	G G Y R	G G Y R	G G Y R	R R R R	R R R R	R R R R	R R R R	W FDW DW DW	DW DW DW DW	40-12 23 5* 2	40-14 23 5* 2	40-14 23 5* 2	40-14 23 5* 2	7 min. 23 5 2
C. How Lane/Veronica Ave Lead Lefts Change	R R	R R	R R	R R	R/<G- R/<Y-	R R	R/<G- R/<Y-	R R	DW DW	DW DW	5-8 3	5-8 3	5-8 3	5-8 3	5 3
D. How Lane/Veronica Avenue ROW Change Clearance	R R R	R R R	R R R	R R R	G Y R	G Y R	G Y R	G Y R	DW DW DW	DW DW DW	7-26 4 3	7-26 4 3	7-26 4 3	7-26 4 3	7-17 4 3
Emergency Flash	Y	Y	Y	Y	R	R	R	R	DARK	DARK	-	-	-	-	-
*OFFSETS											0	0	0	0	-

Route NJ 27 & How Lane/Veronica Avenue
 New Brunswick City/North Brunswick Twp., Middlesex Co.
 Franklin, Twp., Somerset Co.

WITH PEDESTRIAN ACTUATION

PHASE	SIGNAL INDICATIONS										TIME (SECONDS)				
	1-3	4	5-7	8	11-12	13	10,22	9	14-17	18-21	Plan I (100)	Plan II (100)	Plan III (100)	Plan IV (100)	Plan V (86)
A. Route NJ 27 Lead Lefts Change	R/ R/ G- Y- R	R R G G Y R	R/ R/ G G Y R	R R G G Y R	R R G G Y R	R R G G Y R	R R G G Y R	R R G G Y R	DW DW W FDW DW DW	DW DW W FDW DW DW	5-11 3	5-9 3	5-9 3	5-9 3	5 3
B. Route NJ 27 ROW Pedestrian Clearance Change Clearance	G G Y R	G G Y R	G G Y R	G G Y R	R R R R	R R R R	R R R R	R R R R	W FDW DW DW	DW DW W FDW DW DW	21-12 23 5*	21-14 23 5*	21-14 23 5*	21-14 23 5*	7 min. 23 5 2
C. How Lane/Veronica Ave Lead Lefts Change	R R	R R	R R	R R	R/ R/ G- Y- R	R R	R/ R/ G- Y- R	R R	DW DW	DW DW	5-8 3	5-8 3	5-8 3	5-8 3	5 3
D. How Lane/Veronica Avenue ROW Pedestrian Clearance Change Clearance	R R R R	R R R R	R R R R	R R R R	G G Y R	G G Y R	G G Y R	G G Y R	DW DW DW DW	DW DW DW DW	7 19 4 3	7 19 4 3	7 19 4 3	7 19 4 3	7 19 4 3
Emergency Flash	Y	Y	Y	Y	R	R	R	R	DARK	DARK	-	-	-	-	-
*OFFSETS											0	0	0	0	-

Route NJ 27 & How Lane/Veronica Avenue
New Brunswick City/North Brunswick Twp., Middlesex Co.
Franklin, Twp., Somerset Co.

NOTES:

1. * Offsets are measured from the beginning of yellow to Route NJ 27 traffic at this intersection.
2. The Route NJ 27 left-turn slots are to be wired separately but concurrently timed if actuation occurs in both slots. Each slot shall have the capability of terminating or extending independently of the other, thereby reverting the timing to the non-conflicting Phase B movements.
3. The How Lane/Veronica Avenue left-turn slots are to be wired separately but concurrently timed if actuation occurs in both slots. Each slot shall have the capability of terminating or extending independently of the other, thereby reverting the timing to the non-conflicting Phase D movements.
4. Detector switching is to be employed so that the Phase C left turn detection may extend Phase D.
5. If Phase C is called, Phase D must follow.
6. Phase A can only follow Phase D.
7. The manual control cord is to be removed.
8. The vehicle interval is to be 2 seconds.
9. The memory circuit is to be OFF.

HOURS OF OPERATION

- PLAN I -- Monday thru Friday, 6:00 AM – 9:30 AM
- PLAN II -- ALL OTHER TIMES
- PLAN III -- Monday thru Friday, 3:00 PM – 7:00 PM
- PLAN IV -- Saturday and Sunday, 8:00 AM – 9:00 PM
- PLAN V -- Monday thru Sunday, 11:00 PM – 6:00 AM

CYCLE LENGTH

- 100 SECOND BACKGROUND CYCLE
- 100 SECOND BACKGROUND CYCLE
- 100 SECOND BACKGROUND CYCLE
- 100 SECOND BACKGROUND CYCLE
- 67-86 SECOND VARIABLE CYCLE

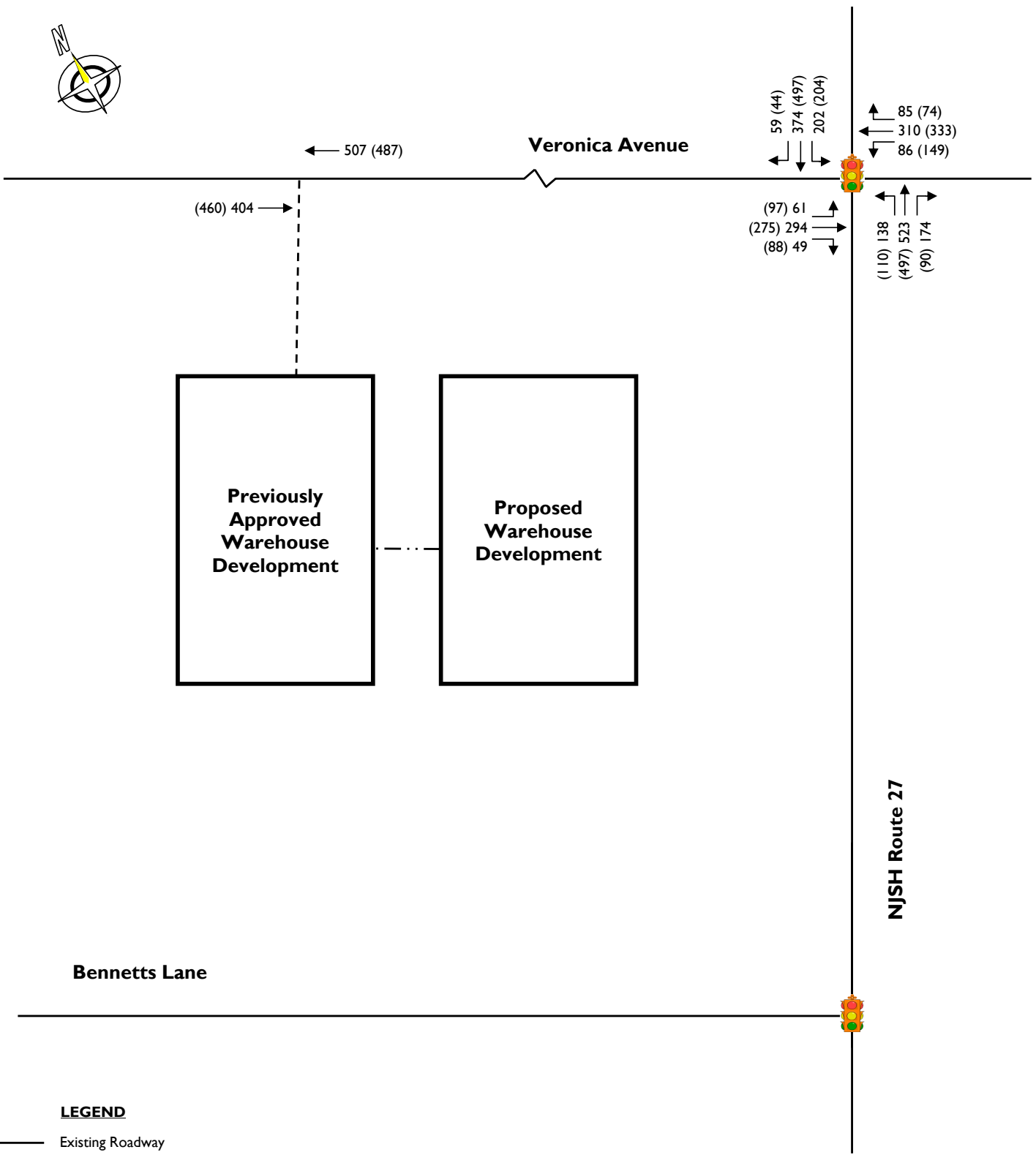
FIGURES



STONEFIELD

Proposed Warehouse Development
NJSH Route 27 & Veronica Avenue
 Township of Franklin, Somerset County, New Jersey
Traffic Impact Study

FIGURE I
Site Location Map



← 507 (487)

Veronica Avenue

(460) 404 →

**Previously
Approved
Warehouse
Development**

**Proposed
Warehouse
Development**

59 (44)
374 (497)
202 (204)

85 (74)
310 (333)
86 (149)

(97) 61
(275) 294
(88) 49

(110) 138
(497) 523
(90) 174

NJSH Route 27

Bennetts Lane

LEGEND

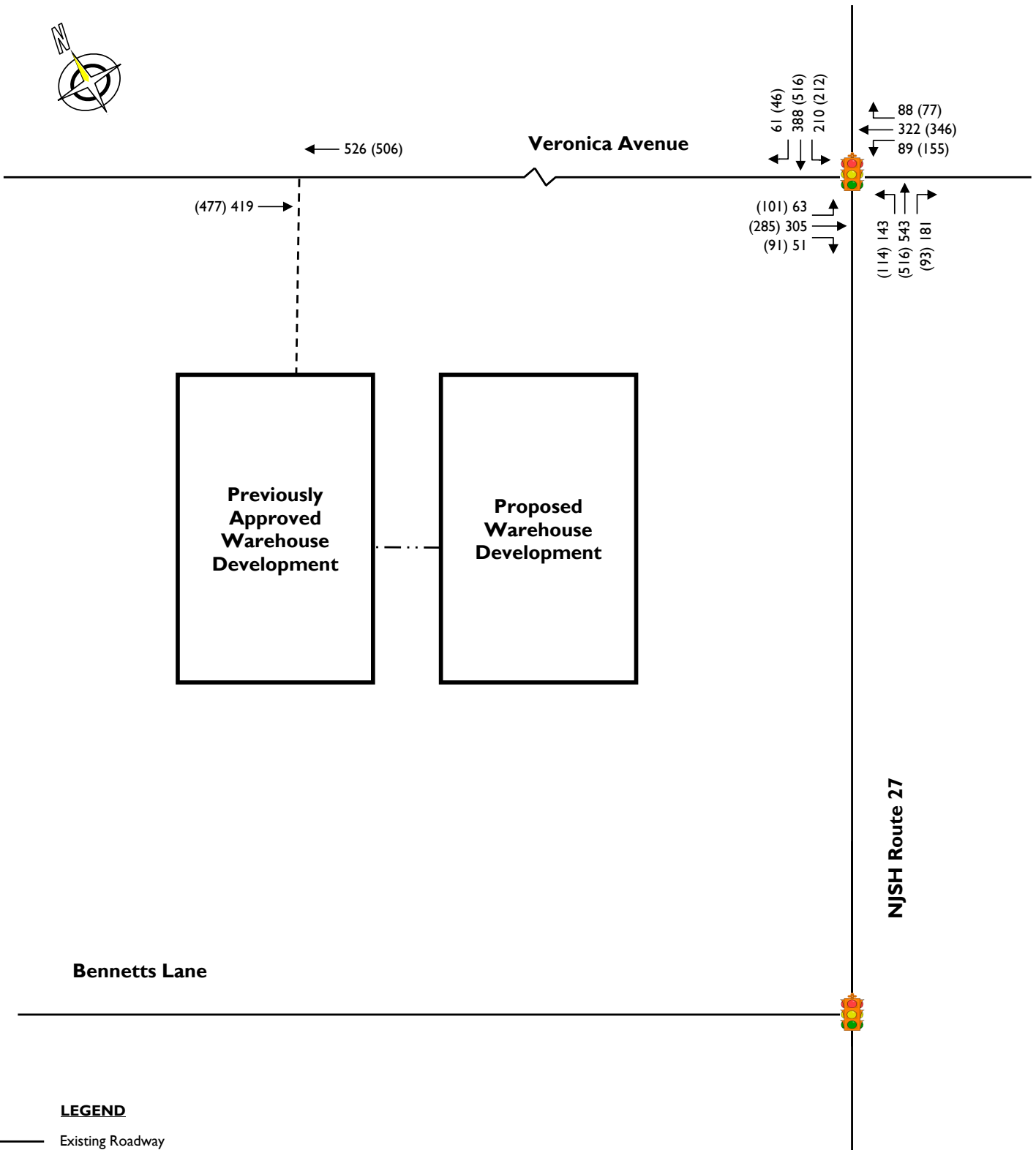
- Existing Roadway
- - - Proposed Driveway
- · · - Cross-Access Driveway
- ← AM (PM) Peak Hour Volumes
- Signalized Intersection

not to scale

STONEFIELD


**Proposed Warehouse Development
NJSH Route 27 & Veronica Avenue
Township of Franklin, Somerset County, New Jersey
Traffic Impact Study**

**FIGURE 2
2021 Existing Traffic
Volumes**



Bennetts Lane

NJSH Route 27

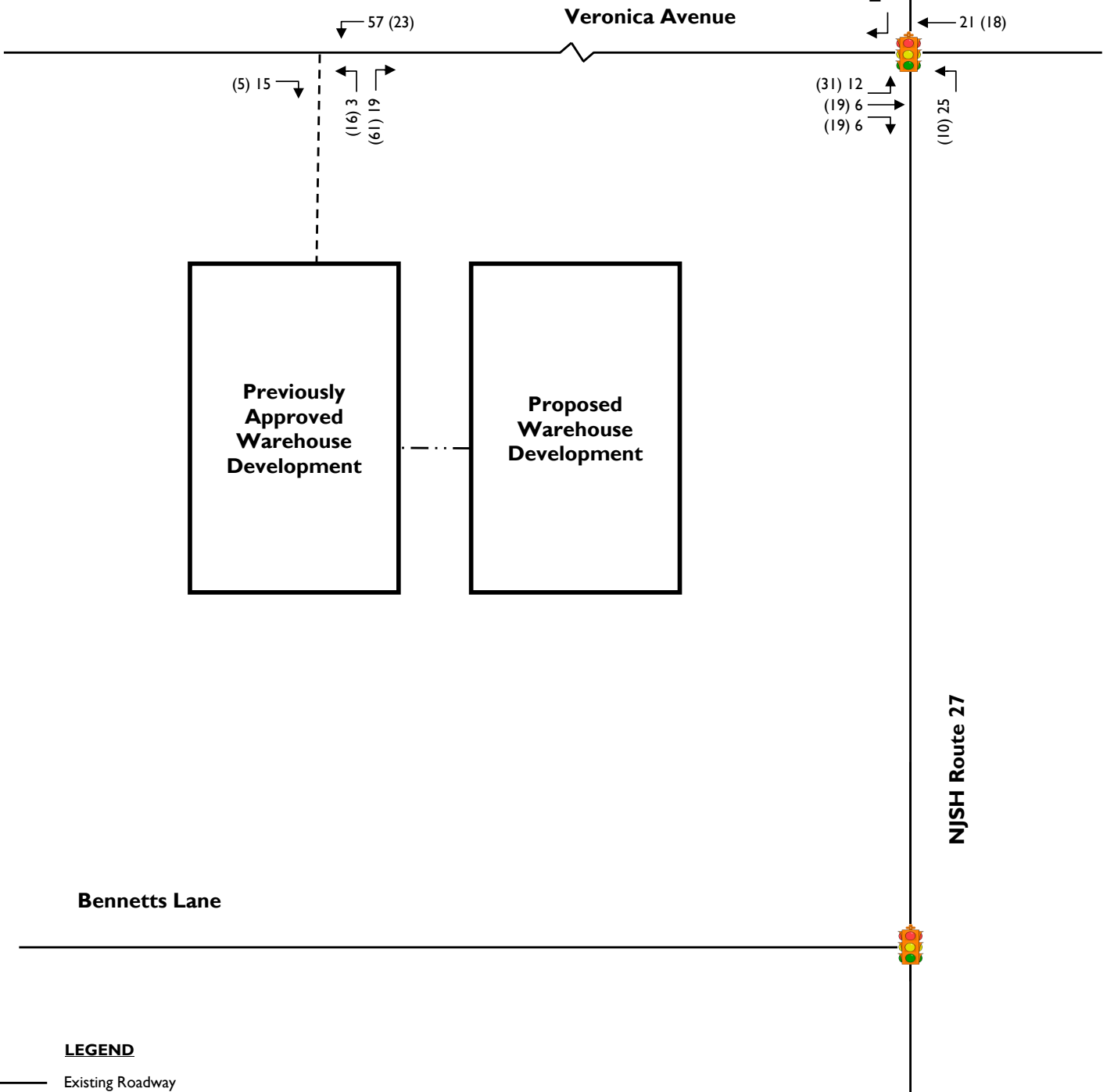
- LEGEND**
- Existing Roadway
 - - - Proposed Driveway
 - · · - Cross-Access Driveway
 - ← AM (PM) Peak Hour Volumes
 -  Signalized Intersection

not to scale

STONEFIELD

Proposed Warehouse Development
NJSH Route 27 & Veronica Avenue
 Township of Franklin, Somerset County, New Jersey
Traffic Impact Study

FIGURE 3
2024 Base Traffic Volumes



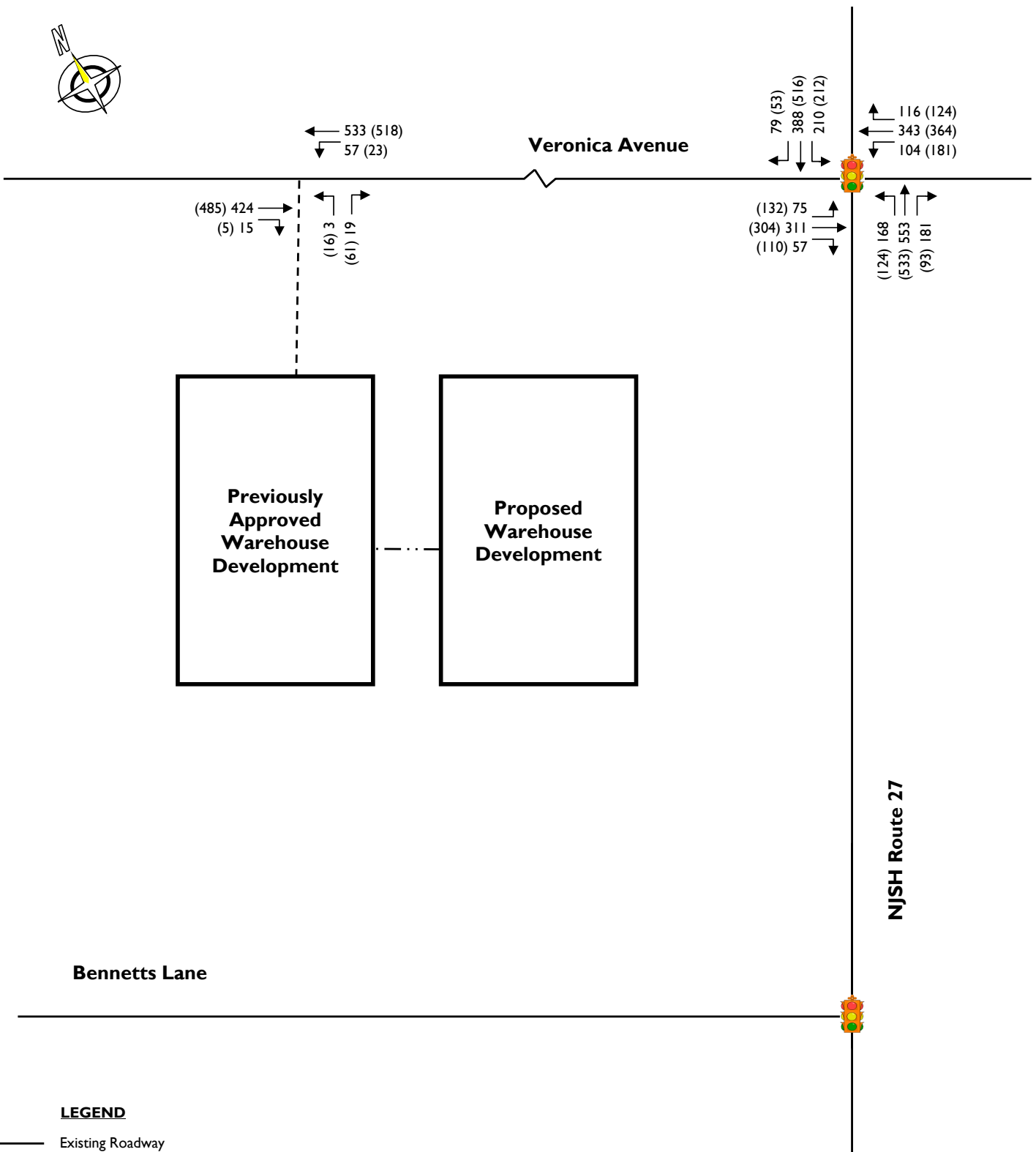
- LEGEND**
- Existing Roadway
 - - - Proposed Driveway
 - · - · Cross-Access Driveway
 - ← AM (PM) Peak Hour Volumes
 - Signalized Intersection

not to scale

STONEFIELD

**Proposed Warehouse Development
NJSH Route 27 & Veronica Avenue
Township of Franklin, Somerset County, New Jersey
Traffic Impact Study**

**FIGURE 4
Other Planned Projects
Future Traffic Volumes**

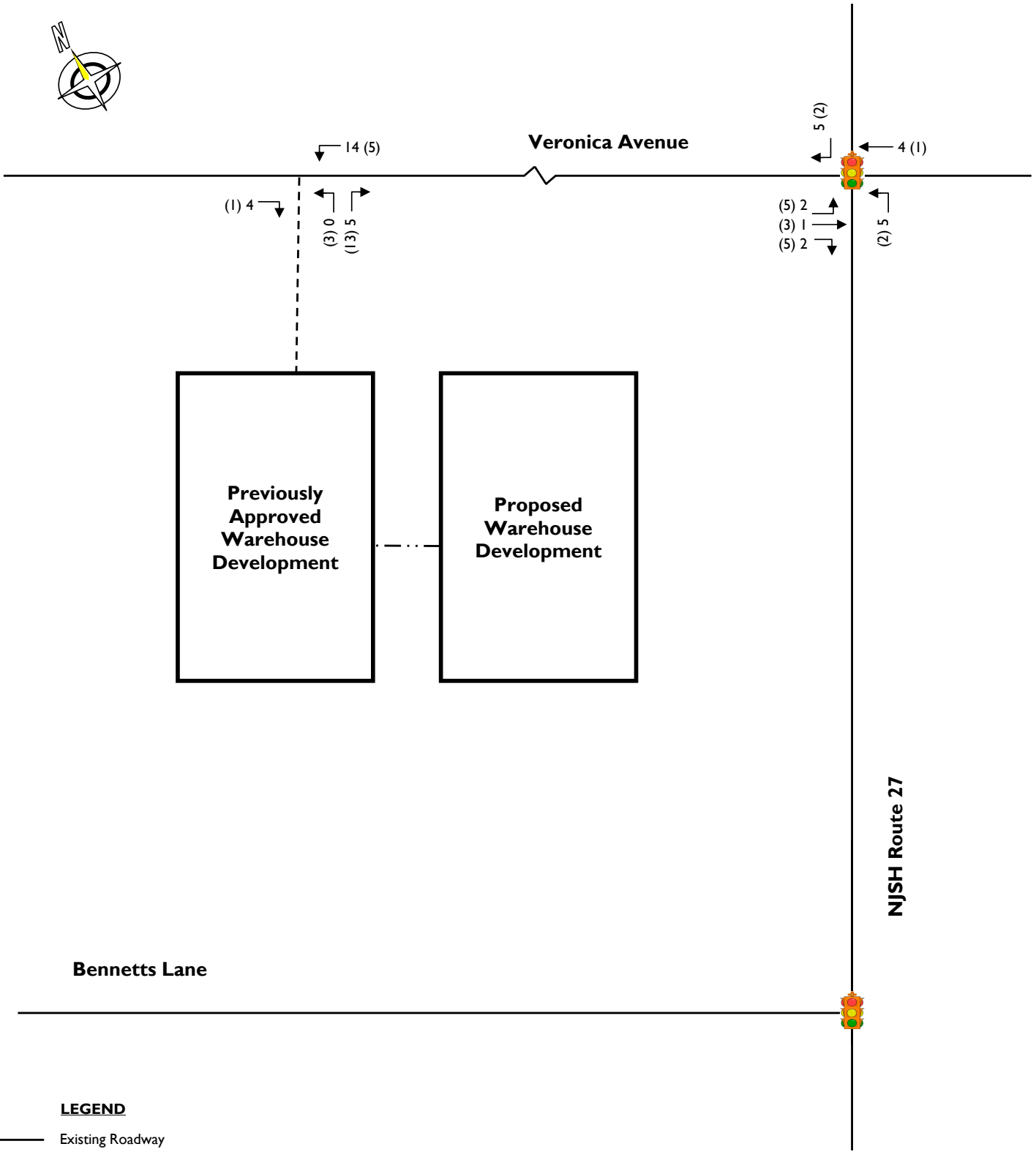


not to scale

STONEFIELD

Proposed Warehouse Development
NJSH Route 27 & Veronica Avenue
 Township of Franklin, Somerset County, New Jersey
Traffic Impact Study

FIGURE 5
2024 No-Build Traffic
Volumes

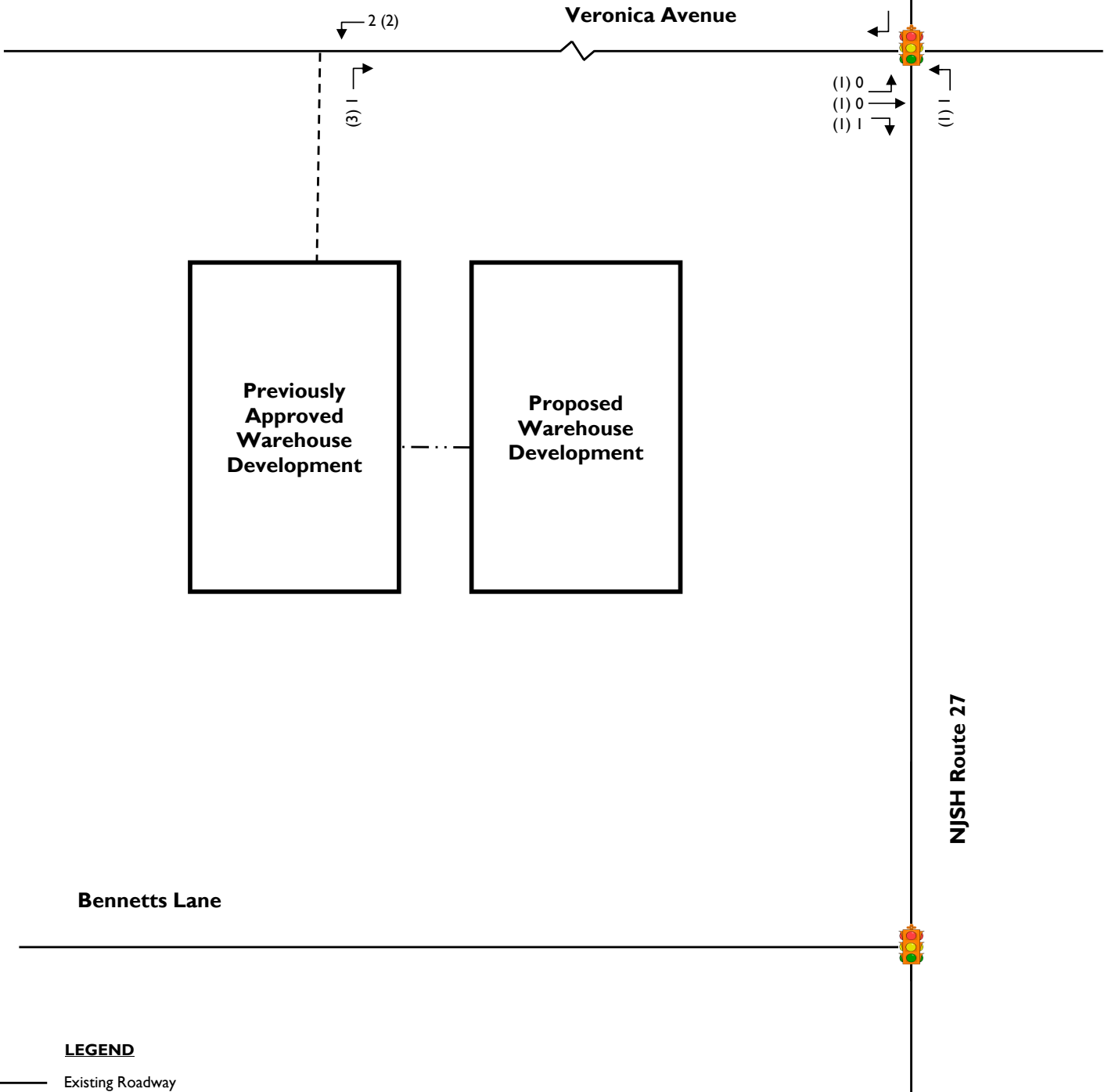


not to scale

STONEFIELD

Proposed Warehouse Development
NJSH Route 27 & Veronica Avenue
 Township of Franklin, Somerset County, New Jersey
Traffic Impact Study

FIGURE 6
Warehouse Passenger
Vehicle Site-Generated
Traffic Volumes



Bennetts Lane


NJSH Route 27

**Previously
Approved
Warehouse
Development**

**Proposed
Warehouse
Development**

Veronica Avenue

LEGEND

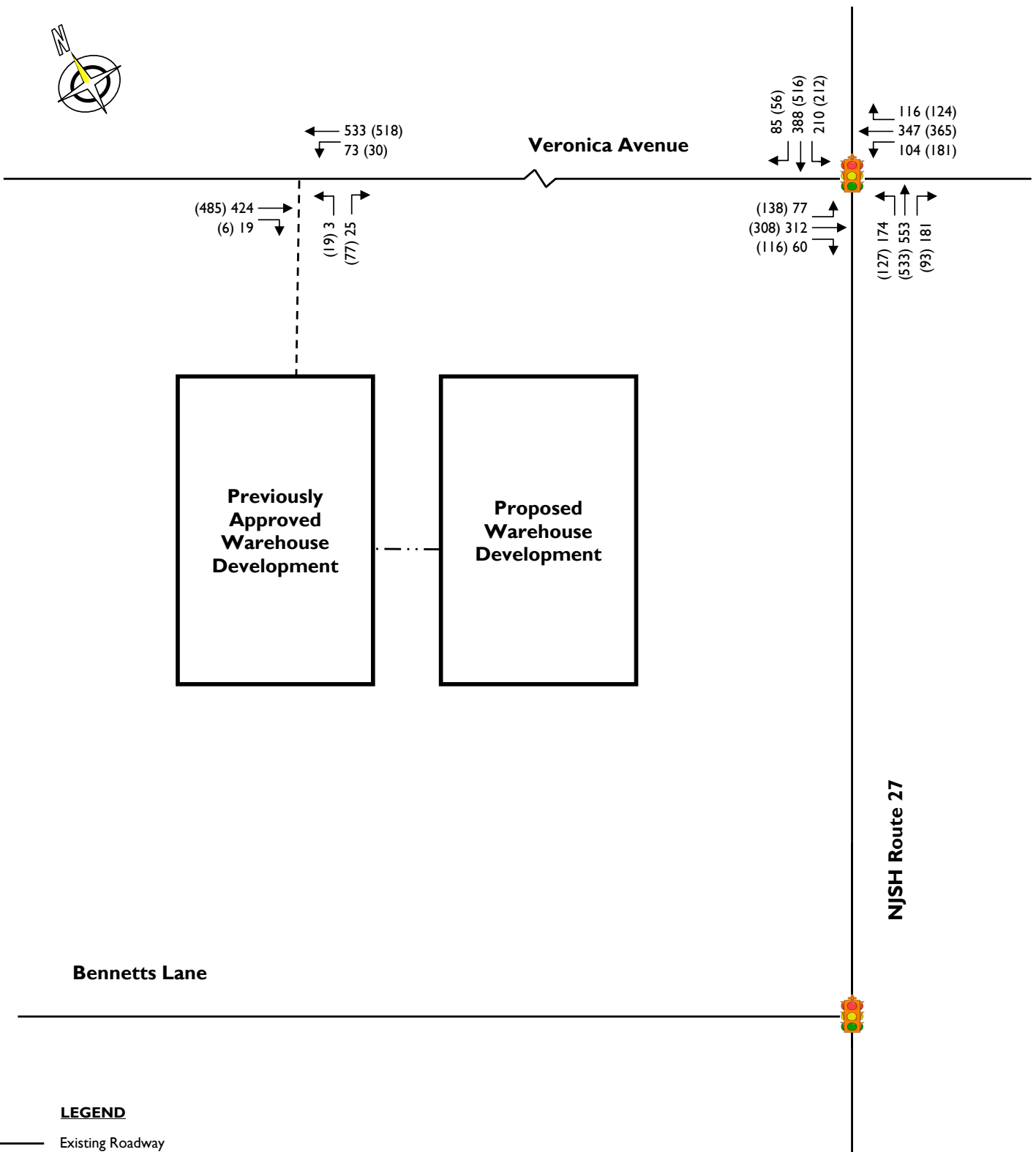
- Existing Roadway
- - - Proposed Driveway
- · - · Cross-Access Driveway
- ← AM (PM) Peak Hour Volumes
-  Signalized Intersection

not to scale

STONEFIELD

**Proposed Warehouse Development
NJSH Route 27 & Veronica Avenue
Township of Franklin, Somerset County, New Jersey
Traffic Impact Study**

**FIGURE 7
Warehouse Truck Site-
Generated Traffic Volumes**



LEGEND

- Existing Roadway
- Proposed Driveway
- Cross-Access Driveway
- AM (PM) Peak Hour Volumes
- Signalized Intersection

not to scale

STONEFIELD























Proposed Warehouse Development
NJSH Route 27 & Veronica Avenue
 Township of Franklin, Somerset County, New Jersey
Traffic Impact Study

FIGURE 8
2024 Build Traffic Volumes

CAPACITY ANALYSIS DETAIL SHEETS























HCM 6th Signalized Intersection Summary
 1: NJSH Route 27 & Veronica Avenue/How Lane

2021 Existing Condition
 Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	294	49	86	310	85	138	523	174	202	374	59
Future Volume (veh/h)	61	294	49	86	310	85	138	523	174	202	374	59
Initial Q (Qb), veh	0	44	0	0	0	0	0	0	0	3	44	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1874	1798	1813	1828	1737	1859	1874	1904	1874	1828	1874	1844
Adj Flow Rate, veh/h	65	313	49	91	330	90	147	556	179	215	398	45
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	10	9	8	14	6	5	3	5	8	5	7
Cap, veh/h	166	415	12	191	349	95	325	1057	339	408	795	661
Arrive On Green	0.04	0.25	0.25	0.05	0.26	0.26	0.07	0.41	0.41	0.09	0.43	0.43
Sat Flow, veh/h	1785	1518	238	1741	1314	358	1785	2694	864	1741	1874	1562
Grp Volume(v), veh/h	65	0	362	91	0	420	147	373	362	215	398	45
Grp Sat Flow(s),veh/h/ln	1785	0	1755	1741	0	1673	1785	1809	1749	1741	1874	1562
Q Serve(g_s), s	2.7	0.0	19.5	3.8	0.0	24.8	4.7	15.4	15.4	6.9	15.4	1.7
Cycle Q Clear(g_c), s	2.7	0.0	19.5	3.8	0.0	24.8	4.7	15.4	15.4	6.9	15.4	1.7
Prop In Lane	1.00		0.14	1.00		0.21	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	166	0	465	191	0	445	325	710	686	408	795	661
V/C Ratio(X)	0.39	0.00	0.78	0.48	0.00	0.94	0.45	0.53	0.53	0.53	0.50	0.07
Avail Cap(c_a), veh/h	226	0	456	264	0	435	531	739	714	443	807	673
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	37.0	28.0	0.0	36.0	19.9	23.3	23.3	16.3	24.5	17.1
Incr Delay (d2), s/veh	0.6	0.0	7.8	0.7	0.0	29.6	0.4	2.8	2.9	0.4	2.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	240.6	0.0	0.0	0.0	0.0	0.0	0.0	0.8	44.2	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.0	48.6	2.8	0.0	19.2	3.4	11.2	11.0	4.9	27.2	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	285.4	28.6	0.0	65.6	20.3	26.0	26.2	17.5	71.0	17.3
LnGrp LOS	C	A	F	C	A	E	C	C	C	B	E	B
Approach Vol, veh/h		427			511			882			658	
Approach Delay, s/veh		246.4			59.0			25.1			49.9	
Approach LOS		F			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	47.9	8.4	31.8	9.8	50.1	7.2	33.0				
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0				
Max Green Setting (Gmax), s	11.0	35.0	8.0	26.0	11.0	35.0	8.0	26.0				
Max Q Clear Time (g_c+I1), s	8.9	17.4	5.8	21.5	6.7	17.4	4.7	26.8				
Green Ext Time (p_c), s	0.1	2.6	0.0	0.6	0.1	1.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			76.8									
HCM 6th LOS			E									























HCM 6th Signalized Intersection Summary
 1: NJSH Route 27 & Veronica Avenue/How Lane

2021 Existing Condition
 Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	275	88	149	333	74	110	497	90	204	497	44
Future Volume (veh/h)	97	275	88	149	333	74	110	497	90	204	497	44
Initial Q (Qb), veh	0	44	0	0	0	0	0	0	0	3	44	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1904	1844	1935	1935	1844	1920	1859	1904	1950	1920	1920	1889
Adj Flow Rate, veh/h	102	289	74	157	351	61	116	523	73	215	523	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	7	1	1	7	2	6	3	0	2	2	4
Cap, veh/h	226	401	19	231	410	71	255	1232	171	473	788	664
Arrive On Green	0.06	0.23	0.23	0.08	0.25	0.25	0.06	0.41	0.41	0.09	0.44	0.44
Sat Flow, veh/h	1814	1416	363	1843	1530	266	1770	3190	444	1828	1920	1601
Grp Volume(v), veh/h	102	0	363	157	0	412	116	296	300	215	523	29
Grp Sat Flow(s),veh/h/ln	1814	0	1778	1843	0	1796	1770	1809	1825	1828	1920	1601
Q Serve(g_s), s	4.3	0.0	19.9	6.4	0.0	22.4	3.7	11.6	11.6	6.5	21.1	1.0
Cycle Q Clear(g_c), s	4.3	0.0	19.9	6.4	0.0	22.4	3.7	11.6	11.6	6.5	21.1	1.0
Prop In Lane	1.00		0.20	1.00		0.15	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	226	0	476	231	0	481	255	699	705	473	788	664
V/C Ratio(X)	0.45	0.00	0.76	0.68	0.00	0.86	0.45	0.42	0.43	0.45	0.66	0.04
Avail Cap(c_a), veh/h	240	0	462	248	0	467	423	739	746	483	837	698
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	37.0	27.2	0.0	34.8	21.3	22.5	22.6	15.4	27.7	17.4
Incr Delay (d2), s/veh	0.5	0.0	6.9	5.2	0.0	14.4	0.5	1.9	1.9	0.3	4.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	226.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	66.8	0.0
%ile BackOfQ(95%),veh/ln	3.2	0.0	47.5	5.2	0.0	16.4	2.7	9.0	9.1	5.0	36.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	0.0	269.9	32.4	0.0	49.2	21.8	24.4	24.4	16.2	98.8	17.6
LnGrp LOS	C	A	F	C	A	D	C	C	C	B	F	B
Approach Vol, veh/h		465			569			712			767	
Approach Delay, s/veh		216.9			44.6			24.0			72.6	
Approach LOS		F			D			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.5	47.9	11.0	29.6	8.8	50.6	8.9	31.7				
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	26.0	9.0	37.0	8.0	26.0				
Max Q Clear Time (g_c+I1), s	8.5	13.6	8.4	21.9	5.7	23.1	6.3	24.4				
Green Ext Time (p_c), s	0.0	2.1	0.0	0.5	0.0	1.7	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay				79.2								
HCM 6th LOS				E								

HCM 6th Signalized Intersection Summary
 1: NJSH Route 27 & Veronica Avenue/How Lane

2024 No-Build Condition
 Weekday Morning Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	311	57	104	343	116	168	553	181	210	388	79
Future Volume (veh/h)	75	311	57	104	343	116	168	553	181	210	388	79
Initial Q (Qb), veh	0	44	0	0	0	0	0	0	0	3	44	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1874	1798	1813	1828	1737	1859	1874	1904	1874	1828	1874	1844
Adj Flow Rate, veh/h	80	331	58	111	365	123	179	588	187	223	413	64
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.96
Percent Heavy Veh, %	5	10	9	8	14	6	5	3	5	8	5	7
Cap, veh/h	156	420	15	191	336	116	296	1021	324	393	756	627
Arrive On Green	0.05	0.24	0.24	0.06	0.26	0.26	0.08	0.40	0.40	0.09	0.41	0.41
Sat Flow, veh/h	1785	1490	261	1741	1243	419	1785	2702	857	1741	1874	1562
Grp Volume(v), veh/h	80	0	389	111	0	488	179	393	382	223	413	64
Grp Sat Flow(s),veh/h/ln	1785	0	1751	1741	0	1662	1785	1809	1750	1741	1874	1562
Q Serve(g_s), s	3.3	0.0	21.6	4.7	0.0	26.0	5.8	16.7	16.8	7.4	16.6	2.5
Cycle Q Clear(g_c), s	3.3	0.0	21.6	4.7	0.0	26.0	5.8	16.7	16.8	7.4	16.6	2.5
Prop In Lane	1.00		0.15	1.00		0.25	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	156	0	465	191	0	458	296	684	661	393	756	627
V/C Ratio(X)	0.51	0.00	0.84	0.58	0.00	1.06	0.61	0.58	0.58	0.57	0.55	0.10
Avail Cap(c_a), veh/h	215	0	455	238	0	432	496	720	697	420	775	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	0.0	37.0	27.7	0.0	36.2	21.2	24.7	24.8	17.3	26.5	18.7
Incr Delay (d2), s/veh	1.0	0.0	12.4	1.0	0.0	60.3	0.7	3.5	3.6	0.8	2.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	267.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	53.7	0.0
%ile BackOfQ(95%),veh/ln	2.5	0.0	52.7	3.4	0.0	26.3	4.3	12.2	12.0	5.3	29.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	0.0	316.8	28.8	0.0	96.5	21.9	28.2	28.4	19.1	83.0	19.0
LnGrp LOS	C	A	F	C	A	F	C	C	C	B	F	B
Approach Vol, veh/h		469			599			954			700	
Approach Delay, s/veh		267.8			83.9			27.1			56.8	
Approach LOS		F			F			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.4	46.8	9.4	31.4	10.9	48.3	7.8	33.0				
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0				
Max Green Setting (Gmax), s	11.0	35.0	8.0	26.0	11.0	35.0	8.0	26.0				
Max Q Clear Time (g_c+I1), s	9.4	18.8	6.7	23.6	7.8	18.6	5.3	28.0				
Green Ext Time (p_c), s	0.1	2.7	0.0	0.4	0.1	1.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			88.7									
HCM 6th LOS			F									

HCM 6th TWSC
2: Site Driveway & Veronica Avenue

2024 No-Build Condition
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	424	15	57	533	3	19
Future Vol, veh/h	424	15	57	533	3	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	9	0	0	11	0	0
Mvmt Flow	451	16	61	567	3	20























Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	467	0	1148
Stage 1	-	-	-	-	459
Stage 2	-	-	-	-	689
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1105	-	222
Stage 1	-	-	-	-	641
Stage 2	-	-	-	-	502
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1105	-	204
Mov Cap-2 Maneuver	-	-	-	-	204
Stage 1	-	-	-	-	641
Stage 2	-	-	-	-	461

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	478	-	-	1105	-
HCM Lane V/C Ratio	0.049	-	-	0.055	-
HCM Control Delay (s)	12.9	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

HCM 6th Signalized Intersection Summary
 1: NJSH Route 27 & Veronica Avenue/How Lane

2024 No-Build Condition
 Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	304	110	181	364	124	124	533	93	212	516	53
Future Volume (veh/h)	132	304	110	181	364	124	124	533	93	212	516	53
Initial Q (Qb), veh	0	44	0	0	0	0	0	0	0	3	44	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1904	1844	1935	1935	1844	1920	1859	1904	1950	1920	1920	1874
Adj Flow Rate, veh/h	139	320	97	191	383	114	131	561	76	223	543	36
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	7	1	1	7	2	6	3	0	2	2	5
Cap, veh/h	206	421	24	226	361	108	226	1190	161	433	759	629
Arrive On Green	0.07	0.25	0.25	0.08	0.26	0.26	0.07	0.38	0.38	0.09	0.40	0.40
Sat Flow, veh/h	1814	1358	412	1843	1364	406	1770	3203	433	1828	1920	1588
Grp Volume(v), veh/h	139	0	417	191	0	497	131	316	321	223	543	36
Grp Sat Flow(s),veh/h/ln	1814	0	1769	1843	0	1770	1770	1809	1826	1828	1920	1588
Q Serve(g_s), s	5.6	0.0	23.0	7.7	0.0	26.0	4.5	13.2	13.3	7.2	23.6	1.4
Cycle Q Clear(g_c), s	5.6	0.0	23.0	7.7	0.0	26.0	4.5	13.2	13.3	7.2	23.6	1.4
Prop In Lane	1.00		0.23	1.00		0.23	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	206	0	475	226	0	471	226	672	679	433	759	629
V/C Ratio(X)	0.67	0.00	0.88	0.84	0.00	1.05	0.58	0.47	0.47	0.51	0.71	0.06
Avail Cap(c_a), veh/h	217	0	460	244	0	460	368	680	686	434	769	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	37.0	27.7	0.0	36.7	22.8	23.9	23.9	17.5	29.3	18.6
Incr Delay (d2), s/veh	5.9	0.0	17.2	20.2	0.0	56.6	0.9	2.4	2.4	0.5	5.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	278.6	0.0	0.0	0.0	0.0	0.0	0.0	0.7	84.8	0.0
%ile BackOfQ(95%),veh/ln	4.7	0.0	56.1	7.9	0.0	26.2	3.2	9.8	9.9	5.6	41.5	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	0.0	332.8	47.9	0.0	93.3	23.7	26.3	26.3	18.7	119.8	18.8
LnGrp LOS	C	A	F	D	A	F	C	C	C	B	F	B
Approach Vol, veh/h		556			688			768			802	
Approach Delay, s/veh		257.9			80.7			25.8			87.2	
Approach LOS		F			F			C			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	44.6	11.0	32.4	9.5	47.1	10.4	33.0				
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	26.0	9.0	37.0	8.0	26.0				
Max Q Clear Time (g_c+I1), s	9.2	15.3	9.7	25.0	6.5	25.6	7.6	28.0				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.2	0.0	1.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	102.6											
HCM 6th LOS	F											

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	485	5	23	518	16	61
Future Vol, veh/h	485	5	23	518	16	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	5	0	0	7	0	0
Mvmt Flow	505	5	24	540	17	64

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	510	0	1096
Stage 1	-	-	-	-	508
Stage 2	-	-	-	-	588
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1065	-	238
Stage 1	-	-	-	-	608
Stage 2	-	-	-	-	559
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1065	-	230
Mov Cap-2 Maneuver	-	-	-	-	230
Stage 1	-	-	-	-	608
Stage 2	-	-	-	-	541

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	436	-	-	1065	-
HCM Lane V/C Ratio	0.184	-	-	0.022	-
HCM Control Delay (s)	15.1	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

HCM 6th Signalized Intersection Summary
 1: NJSH Route 27 & Veronica Avenue/How Lane

2024 Build Condition
 Weekday Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	312	60	104	347	116	174	553	181	210	388	85
Future Volume (veh/h)	77	312	60	104	347	116	174	553	181	210	388	85
Initial Q (Qb), veh	0	44	0	0	0	0	0	0	0	3	44	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1874	1798	1813	1828	1737	1859	1874	1904	1874	1828	1874	1844
Adj Flow Rate, veh/h	82	332	61	111	369	123	185	588	187	223	413	72
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	10	9	8	14	6	5	3	5	8	5	7
Cap, veh/h	158	419	15	191	336	114	297	1019	323	392	751	623
Arrive On Green	0.05	0.24	0.24	0.06	0.26	0.26	0.08	0.40	0.40	0.09	0.41	0.41
Sat Flow, veh/h	1785	1478	271	1741	1247	416	1785	2702	857	1741	1874	1562
Grp Volume(v), veh/h	82	0	393	111	0	492	185	393	382	223	413	72
Grp Sat Flow(s),veh/h/ln	1785	0	1749	1741	0	1662	1785	1809	1750	1741	1874	1562
Q Serve(g_s), s	3.4	0.0	21.9	4.7	0.0	26.0	6.0	16.8	16.8	7.4	16.7	2.8
Cycle Q Clear(g_c), s	3.4	0.0	21.9	4.7	0.0	26.0	6.0	16.8	16.8	7.4	16.7	2.8
Prop In Lane	1.00		0.16	1.00		0.25	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	158	0	465	191	0	457	297	683	660	392	751	623
V/C Ratio(X)	0.52	0.00	0.85	0.58	0.00	1.08	0.62	0.58	0.58	0.57	0.55	0.12
Avail Cap(c_a), veh/h	215	0	455	236	0	432	491	718	694	419	769	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	0.0	37.0	27.8	0.0	36.3	21.2	24.8	24.8	17.4	26.7	18.9
Incr Delay (d2), s/veh	1.0	0.0	13.4	1.0	0.0	64.2	0.8	3.5	3.7	0.8	2.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	271.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0	54.9	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	53.4	3.4	0.0	27.0	4.4	12.2	12.0	5.4	30.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	0.0	321.8	28.8	0.0	100.5	22.0	28.3	28.5	19.3	84.4	19.3
LnGrp LOS	C	A	F	C	A	F	C	C	C	B	F	B
Approach Vol, veh/h		475			603			960			708	
Approach Delay, s/veh		271.3			87.3			27.1			57.3	
Approach LOS		F			F			C			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	46.7	9.4	31.5	11.1	48.0	7.9	33.0				
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0				
Max Green Setting (Gmax), s	11.0	35.0	8.0	26.0	11.0	35.0	8.0	26.0				
Max Q Clear Time (g_c+I1), s	9.4	18.8	6.7	23.9	8.0	18.7	5.4	28.0				
Green Ext Time (p_c), s	0.1	2.7	0.0	0.3	0.1	1.5	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			90.4									
HCM 6th LOS			F									

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	424	19	73	533	3	25
Future Vol, veh/h	424	19	73	533	3	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	9	0	11	11	0	0
Mvmt Flow	451	20	78	567	3	27























Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	471	0	1184
Stage 1	-	-	-	-	461
Stage 2	-	-	-	-	723
Critical Hdwy	-	-	4.21	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.299	-	3.5
Pot Cap-1 Maneuver	-	-	1045	-	211
Stage 1	-	-	-	-	639
Stage 2	-	-	-	-	484
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1045	-	188
Mov Cap-2 Maneuver	-	-	-	-	188
Stage 1	-	-	-	-	639
Stage 2	-	-	-	-	431

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	489	-	-	1045	-
HCM Lane V/C Ratio	0.061	-	-	0.074	-
HCM Control Delay (s)	12.8	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

HCM 6th Signalized Intersection Summary
 1: NJSH Route 27 & Veronica Avenue/How Lane

2024 Build Condition
 Weekday Evening Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	308	116	181	365	124	127	533	93	212	516	56
Future Volume (veh/h)	138	308	116	181	365	124	127	533	93	212	516	56
Initial Q (Qb), veh	0	44	0	0	0	0	0	0	0	3	44	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1904	1844	1935	1935	1844	1920	1859	1904	1950	1920	1920	1874
Adj Flow Rate, veh/h	145	324	103	191	384	114	134	561	76	223	543	39
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	7	1	1	7	2	6	3	0	2	2	5
Cap, veh/h	211	420	26	225	359	107	226	1187	160	430	756	626
Arrive On Green	0.08	0.26	0.26	0.08	0.26	0.26	0.07	0.37	0.37	0.09	0.40	0.40
Sat Flow, veh/h	1814	1341	426	1843	1365	405	1770	3203	433	1828	1920	1588
Grp Volume(v), veh/h	145	0	427	191	0	498	134	316	321	223	543	39
Grp Sat Flow(s),veh/h/ln	1814	0	1767	1843	0	1771	1770	1809	1826	1828	1920	1588
Q Serve(g_s), s	5.8	0.0	23.7	7.7	0.0	26.1	4.6	13.3	13.4	7.3	23.8	1.5
Cycle Q Clear(g_c), s	5.8	0.0	23.7	7.7	0.0	26.1	4.6	13.3	13.4	7.3	23.8	1.5
Prop In Lane	1.00		0.24	1.00		0.23	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	211	0	475	225	0	467	226	671	677	430	756	626
V/C Ratio(X)	0.69	0.00	0.90	0.85	0.00	1.07	0.59	0.47	0.47	0.52	0.72	0.06
Avail Cap(c_a), veh/h	217	0	459	240	0	462	362	674	681	431	761	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	37.0	27.7	0.0	36.8	22.8	24.0	24.0	17.8	29.5	18.8
Incr Delay (d2), s/veh	7.0	0.0	20.4	21.3	0.0	60.6	0.9	2.4	2.4	0.5	5.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	288.5	0.0	0.0	0.0	0.0	0.0	0.0	0.7	86.4	0.0
%ile BackOfQ(95%),veh/ln	5.0	0.0	57.8	8.0	0.0	26.8	3.3	9.8	9.9	5.6	41.8	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	0.0	345.8	49.0	0.0	97.4	23.8	26.4	26.4	19.0	121.7	19.0
LnGrp LOS	C	A	F	D	A	F	C	C	C	B	F	B
Approach Vol, veh/h		572			689			771			805	
Approach Delay, s/veh		266.9			84.0			25.9			88.3	
Approach LOS		F			F			C			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	44.3	11.0	32.7	9.6	46.6	10.7	33.1				
Change Period (Y+Rc), s	3.0	7.0	3.0	7.0	3.0	7.0	3.0	7.0				
Max Green Setting (Gmax), s	9.0	37.0	8.0	26.0	9.0	37.0	8.0	26.0				
Max Q Clear Time (g_c+I1), s	9.3	15.4	9.7	25.7	6.6	25.8	7.8	28.1				
Green Ext Time (p_c), s	0.0	2.3	0.0	0.1	0.0	1.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	106.3											
HCM 6th LOS	F											

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	485	6	30	518	19	77
Future Vol, veh/h	485	6	30	518	19	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	5	0	0	7	0	17
Mvmt Flow	511	6	32	545	20	81

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	517	0	1123
Stage 1	-	-	-	-	514
Stage 2	-	-	-	-	609
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1059	-	230
Stage 1	-	-	-	-	605
Stage 2	-	-	-	-	547
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1059	-	220
Mov Cap-2 Maneuver	-	-	-	-	220
Stage 1	-	-	-	-	605
Stage 2	-	-	-	-	523

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	415	-	-	1059	-
HCM Lane V/C Ratio	0.244	-	-	0.03	-
HCM Control Delay (s)	16.4	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-