TRAFFIC IMPACT STUDY

PROPOSED MIXED-USE DEVELOPMENT

Proposed Mixed-Use
Development
682 NJSH Route 440
City of Jersey City
Hudson County, New Jersey

Prepared For: Myneni
Properties, LLC

Date: October 5, 2021
SE&D Job No. RUT-200343

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INTRODUCTION

This Traffic Impact Study was prepared to investigate the potential impacts of the proposed mixed-use development on the adjacent roadway network. The subject property is bounded by Bennett Street to the east, NJSH Route 440 to the west, Virgina Avenue to the north, and Ege Avenue to the south in the City of Jersey City, Hudson County, New Jersey. The site location is shown on appended **Figure 1**.

The subject property is designated as Block 20403, Lots 1 & 2 as depicted on the City of Jersey City Tax Map. The site has approximately 314 feet of frontage along NJSH Route 440, 192 feet of frontage along Ege Avenue, 194 feet of frontage along Bennett Street, and approximately 184 feet of frontage along Virginia Avenue. The existing site is occupied by multiple retail buildings totaling approximately 20,758 square feet. Access is presently provided via one (1) curb-cut along NJSH Route 440 and one (1) egress-only driveway along Bennett Street. Under the proposed development program, the existing structures would be razed, and a 15-story mixed-use development consisting of 218 residential units and 2,025 square-feet of ground-floor retail space would be constructed. Access is proposed via one (1) right-in/right-out driveway along NJSH Route 440, one (1) ingress-only driveway along Virginia Avenue, and one (1) egress-only driveway along Ege Avenue.

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 11 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 on field recordings.

2020 EXISTING CONDITION

2020 EXISTING ROADWAY CONDITIONS

The proposed mixed-use development is bounded by Bennett Street to the east, NJSH Route 440 to the west, Virgina Avenue to the north, and Ege Avenue to the south in the City of Jersey City, Hudson County, New Jersey. The subject property is designated as Block 20403, Lots 1 & 2 as depicted on the City of Jersey City Tax Map. The site has approximately 314 feet of frontage along NJSH Route 440, 192 feet of frontage along Ege Avenue, 194 feet of frontage along Bennett Street, and approximately 184 feet of frontage along Virginia Avenue. Land uses in the area are a mix of residential, retail, commercial, educational, and industrial uses.

NJSH Route 440 is classified as an Urban Principal Arterial roadway with a general north-south orientation and is under the jurisdiction of the New Jersey Department of Transportation (NJDOT). Along the site frontage, the roadway provides two (2) lanes of travel each direction, separated by a grass median, and has a posted speed limit of 45 mph. Curb and sidewalk are generally 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 440 provides north-south mobility throughout Hudson County and provides access to US Route 1/9 to the north and the New Jersey Turnpike (I-78) to the south for primarily commercial and retail uses along its length.

Ege Avenue is classified as a local roadway with a general east-west orientation and is under the jurisdiction of the City of Jersey City. Along the site frontage, the roadway provides one (1) lane of travel in the eastbound direction and does not have a posted speed limit. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking is not permitted. Ege Avenue provides east-west mobility within the City of Jersey City and provides access to NJSH Route 440 at its westerly terminus for retail uses along its length.

Bennett Street is classified as a local roadway with a general north-south orientation and is under the jurisdiction of the City of Jersey City. Along the site frontage, the roadway provides one (1) lane of travel in the northbound direction and does not have a posted speed limit. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking is permitted. Bennett Street provides north-south mobility within the City of Jersey City for retail uses along its length.

Virginia Avenue is classified as a local roadway with a general east-west orientation and is under the jurisdiction of the City of Jersey City. Along the site frontage, the roadway provides two (2) lanes of travel in the westbound direction, inclusive of one (1) left turn only lane and does not have a posted speed limit. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking

is not permitted. Virginia Avenue provides east-west mobility within the City of Jersey City and provides access to NJSH Route 440 at its westerly terminus for retail uses along its length.

NJSH Route 440, Virginia Avenue, and the Hudson Mall driveway intersect to form a four (4)-leg intersection controlled by a two (2)-phase traffic signal operating on a 150-second fixed background cycle. The northbound and southbound approaches of NJSH Route 440 each provide two (2) exclusive through lanes. The eastbound approach of the Hudson Mall driveway provides one (1) exclusive right-turn lane. The westbound approach of Virginia Avenue provides one (1) exclusive left-turn lane and one (1) shared through/right-turn lane. Crosswalks and pedestrian signals are provided across the eastern, western, and northern legs of the intersection.

NJSH Route 440 and Ege Avenue intersect to form an unsignalized T-intersection. The northbound approach of NJSH Route 440 provides two (2) exclusive through lanes and one (1) exclusive right-turn lane. Ege Avenue provides one (1) eastbound receiving lane. Crosswalks and pedestrian signals are provided across the easterly leg of the intersection.

2020 EXISTING TRANSIT SERVICE

The subject site is located within 0.6 miles (12-minute walk) from West Side Avenue Light Rail Station which serves NJ Transit's Hudson-Bergen Light Rail Line and provides direct service to Hoboken Terminal, Exchange Place, Tonnelle Avenue as well as transfer service to other lines on the NJ Transit system. At Hoboken Terminal, transfers are available to the Port Authority Trans-Hudson (PATH) trains and NY Waterway ferries. Further, the proposed development is located within 0.5 miles (10-minute walk) from bus stops that service two (2) NJ Transit bus routes, with the nearest stop located at the intersection of West Side Avenue and Virginia Avenue. NJ Transit Bus Routes 1 and 80 provide service to Newark Penn Station, Exchange Place, Journal Square, and various points of interest throughout Hudson and Essex counties. The non-vehicular transportation modes available in the general vicinity of the subject site are summarized on **Table 1**.

TABLE 1: MULTI-MODAL TRANSPORTATION OPTIONS

Travel Mode	Proximity to Site	Peak Commuter Period Headways	Destination(s)	Time Travel to Major Destination
West Side Avenue Light Rail Station	0.6 miles	Inbound: 15-20 minutes Outbound: 10-15 minutes	Hoboken Terminal Exchange Place Tonnelle Avenue	30-40 minutes
NJ Transit Bus Route 1	0.5 miles	Inbound: 15-25 minutes Outbound: 15-35 minutes	Newark Penn Station Exchange Place Journal Square	15-20 minutes
NJ Transit Bus Route 80	0.5 miles	Inbound: 10-15 minutes Outbound: 10-20 minutes	Exchange Place Journal Square	30-35 minutes

2020 EXISTING TRAFFIC VOLUMES

Manual turning movement counts were collected during the typical weekday morning, weekday evening, and Saturday midday 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 following intersections:

- NJSH Route 440, Virginia Avenue, and the Hudson Mall driveway
- NJSH Route 440 and Ege Avenue

Specifically, manual turning movement counts were conducted on the following dates and during the following times:

- Tuesday, December 15, 2020 from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.
- Saturday, December 19, 2020 from 11:00 a.m. to 2:00 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.; the weekday evening peak hour occurred from 4:30 p.m. to 5:30 p.m.; and the Saturday midday peak hour occurred from 12:45 p.m. to 1:45 p.m. The Technical Appendix contains a summary of the turning movement count data.

PANDEMIC TRAFFIC VOLUME ADJUSTMENT

Due to the current COVID-19 health crisis, vehicular volumes along the roadway network are atypical and as such, the collected turning movement counts were adjusted accordingly. Our office conducted turning movement counts at the intersection of NJSH Route 440 and Culver Avenue on June 11, 2019 during the weekday morning and weekday evening peak hours. The traffic volumes along NJSH Route 440 northbound and southbound, between Culver Avenue and Virginia Avenue, were used for comparison purposes. **Table 2**

summarizes the peak hour count comparison between the 2019 turning movement count data and 2020 turning movement count data.

TABLE 2 – COUNT COMPARISON

	Time Period	2019 Turning Movement Counts	2020 Turning Movement Counts	Percent Difference
NJSH Route 440 Traffic Volumes	Weekday Morning Peak Hour	2,744	2,711	-1.2%
	Weekday Evening Peak Hour	2,832	3,343	+18.0%

As shown in Table 2, the turning movement counts conducted were approximately 1.2% lower during the weekday morning peak hour and 18% higher during the weekday evening peak hour than expected under typical conditions. As such, the turning movement counts conducted were not increased/decreased to account for COVID traffic volumes. The 2020 Existing weekday morning, weekday evening, and Saturday midday peak-hour volumes are summarized on appended **Figure 2**.

2020 EXISTING LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the 2020 Existing Condition during the weekday morning, weekday evening, and Saturday midday peak hours at the study intersection. Under the existing condition, the signalized intersection of NJSH Route 440, Virginia Avenue, and the Hudson Mall driveway is calculated to operate at overall Level of Service B during the weekday morning peak hour and overall Level of Service C during the weekday evening and Saturday midday peak hours.

2023 NO-BUILD CONDITION

BACKGROUND GROWTH

The 2020 Existing Condition traffic volume data was grown to a future horizon year of 2023, which is a conservative estimate for when the proposed mixed-use development is expected to be fully constructed. In accordance with industry guidelines, the existing traffic volumes at the study intersections were increased by 1.00% annually for three (3) years. The 1.00% 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. Other planned projects in the vicinity of the site could

not be determined at the time of this report. As such, the application of the background growth rate was utilized to account for background traffic growth.

2023 NO-BUILD TRAFFIC VOLUMES

The background growth rate was applied to the 2020 Existing Traffic Volumes to calculate the 2023 No-Build Traffic Volumes for the weekday morning, weekday evening, and Saturday midday study peak hours. These volumes are summarized on appended **Figure 3**.

2023 NO-BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2023 No-Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours at the study intersection. The signalized intersection of NJSH Route 440, Virginia Avenue, and the Hudson Mall driveway is calculated to operate generally consistently with the findings of the Existing Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

2023 BUILD CONDITION

The site-generated traffic volume of the proposed mixed-use 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 three (3) years of the preparation of this study.

TRIP GENERATION

Trip generation projections for the proposed mixed-use development were prepared utilizing the ITE's Trip Generation Manual, 10th Edition. Trip generation rates associated with Land Use 222 "Multifamily Housing (High-Rise)" and Land Use 820 "Shopping Center" were cited for the proposed 218 residential units and 2,025 square feet of retail space, respectively. **Table 3** provides the weekday morning, weekday evening, and Saturday midday trip generation volumes associated with the proposed development.

TABLE 3 – PROPOSED TRIP GENERATION

	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
Land Use	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
218 Unit Multifamily Housing (High-Rise) *ITE Land Use 222*	16	52	68	48	30	78	43	35	78
2,025 SF Shopping Center *ITE Land Use 820*	1	1	2	17	17	34	15	13	28
Total	**17**	**53**	**70**	**65**	**47**	**86**	**58**	**48**	**106**

As stated within Chapter 6 of ITE's Trip Generation Handbook, 3rd Edition, internally captured trips can be a component of the travel patterns at mixed-use developments, such as the one proposed. When combined within a single development, individual land uses tend to interact, and thus attract a portion of each other's trip generation, such as residents visiting the retail stores. Based on the nature of the proposed uses, an internal capture credit would be applicable, however, in order to maintain a conservative analysis, no internal capture credit was taken.

As stated within Chapter 10 of ITE's Trip Generation Handbook, 3rd Edition, there are instances when the total number of trips generated by a site is different from the amount of new traffic added to the street system by the generator. Retail uses are specifically located on or adjacent to busy streets to attract motorists already on the roadway. Therefore, the proposed retail use associated with the development would be expected to attract a portion of its trips from the traffic passing the site on the way from an origin to an ultimate destination. These trips do not add new traffic to the adjacent roadway system and are referred to as pass-by trips.

Based upon the published ITE data for Land Use 820 "Shopping Center," 34% of the site-generated traffic during the weekday evening peak hour and 26% of the site-generated traffic during the Saturday midday peak hour is comprised of pass-by traffic. **Table 4** shows the additional site generated traffic in terms of newly generated traffic and pass-by traffic.

TABLE 4 – PROPOSED TRIP GENERATION – NEW & PASS-BY TRIPS

	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
Land Use	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
"New" Trips	1	1	2	9	11	20	12	10	22
"Pass-By" Trips	--	--	--	5	5	10	3	3	6
Total	**1**	**1**	**2**	**14**	**16**	**30**	**15**	**13**	**28**

At the site driveways, the calculated number of pass-by trips is shown as a negative number at the through movement as the vehicles are temporarily diverted from the through travel stream into and out of the site access point.

TRIP ASSIGNMENT/DISTRIBUTION

The trips generated by the proposed development were distributed according to the existing travel pattern along NJSH Route 440 and the access management plan of the site. The retail site-generated traffic volumes were distributed to the right-in/right-out driveway along NJSH Route 440, which would provide access to the retail surface parking lot. The "New" Site-Generated Traffic Volumes are illustrated on **Figure 4** and the "Pass-By" Site-Generated Traffic Volumes expected to access the site are depicted on **Figure 5**.

2023 BUILD TRAFFIC VOLUMES

The site-generated trips were added to the 2023 No-Build Traffic Volumes to calculate the 2023 Build Traffic Volumes and are shown on appended **Figure 6**.

2023 BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2023 Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours at the study intersections and proposed site driveways. **Tables 5** through **9** compare the Existing, No-Build, and Build Conditions Level of Service and delay values.

The signalized intersection of NJSH Route 440, Virginia Avenue, and the Hudson Mall driveway is calculated to operate generally consistently with the findings of the No-Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours. The approaches of the unsignalized intersection of Ege Avenue and the site driveway are calculated to operate at Level of Service A during the weekday morning peak hour and Level of Service B during the weekday evening and Saturday midday peak hours. The approaches of the unsignalized intersection of NJSH Route 440 and the site driveway are calculated to operate at Level of Service C during the weekday morning and weekday evening peak hours and Level of Service B during the Saturday midday peak hour.

COMPARATIVE LEVEL OF SERVICE (DELAY) TABLES

NJSH ROUTE 440, VIRGINIA AVENUE, & HUDSON MALL DRIVEWAY

EB (Eastbound) is the Hudson Mall Driveway approach
WB (Westbound) approach is the Virginia Avenue approaches
NB (Northbound) and SB (Southbound) approaches are the NJSH Route 440 approaches
X (n) = Level of Service (seconds of delay)

TABLE 5 – WEEKDAY MORNING PEAK HOUR

Lane Group	2020 Existing	2023 No-Build	2023 Build
EB Left*	D (52.4)	D (52.5)	D (52.5)
EB Right	D (51.6)	D (51.7)	D (51.7)
WB Left	D (52.5)	D (52.6)	D (53.3)
WB Through/Right	D (51.0)	D (51.0)	D (52.3)
NB Through	B (11.5)	B (11.8)	B (11.8)
SB Through	B (10.4)	B (10.6)	B (10.7)
Intersection	**B (14.1)**	**B (14.4)**	**B (15.0)**

TABLE 6 – WEEKDAY EVENING PEAK HOUR

Lane Group	2020 Existing	2023 No-Build	2023 Build
EB Left*	E (57.7)	E (58.1)	E (58.1)
EB Right	E (55.2)	E (55.4)	E (55.4)
WB Left	D (54.6)	D (54.7)	E (55.3)
WB Through/Right	E (55.2)	E (55.4)	E (56.9)
NB Through	B (11.3)	B (11.6)	B (11.6)
SB Through	B (11.3)	B (11.5)	B (11.8)
Intersection	**C (20.5)**	**C (20.8)**	**C (21.2)**

TABLE 7 – SATURDAY MIDDAY PEAK HOUR

Lane Group	2020 Existing	2023 No-Build	2023 Build
EB Left*	E (58.5)	E (58.8)	E (58.8)
EB Right	E (58.2)	E (58.5)	E (58.5)
WB Left	E (55.8)	E (56.0)	E (56.7)
WB Through/Right	E (57.3)	E (57.6)	E (59.7)
NB Through	A (9.9)	B (10.1)	B (10.1)
SB Through	A (10.0)	B (10.2)	B (10.4)
Intersection	**C (22.7)**	**C (23.0)**	**C (23.5)**

*EB Left of Virginia Avenue is denoted as SEL in the Synchro analysis output sheets

EGE AVENUE & SITE DRIVEWAY
EB (Eastbound) approach is the Ege Avenue approach
SB (Southbound) approach is the site driveway approach
X (n) = Level of Service (seconds of delay)

TABLE 8 – 2023 BUILD CONDITION

Lane Group	Weekday Morning Peak Hour	Weekday Evening Peak Hour	Saturday Midday Peak Hour
SB Left	A (9.4)	B (11.8)	B (13.2)

NJSH ROUTE 440 & SITE DRIVEWAY
WB (Westbound) approach is the site driveway approach
NB (Northbound) approach is the NJSH Route 440 approach
X (n) = Level of Service (seconds of delay)

TABLE 9 – 2023 BUILD CONDITION

Lane Group	Weekday Morning Peak Hour	Weekday Evening Peak Hour	Saturday Midday Peak Hour
WB Right	C (16.3)	C (16.5)	B (14.9)

SITE CIRCULATION/PARKING SUPPLY

A review was conducted of the proposed mixed-use development using the Architectural Plan prepared by Minervini Vandermark Melia Kelly Architecture and Design, dated October 5, 2021. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Under the proposed development plan, a 15-story mixed-use development consisting of 218 residential units and 2,025 square-feet of ground-floor retail space would be constructed on the easterly portion of the subject property. The retail portions of the development would occupy the northwesterly and southwesterly portions of the ground floor. A surface parking lot would be provided on the westerly portion of the site. Access is proposed via one (1) right-in/right-out driveway along NJSH Route 440, one (1) ingress-only driveway along Virginia Avenue, and one (1) egress-only driveway along Bennet Street. Vehicles accessing the retail portions of the proposed development would utilize the right-in/right-out driveway along NJSH Route 440 to access the surface parking lot. Vehicles accessing the residential portion of the site would utilize the one-way driveways along Virginia Avenue and Bennett Street to access the ground-floor parking garage. Vehicular circulation throughout the garage would be provided via 24-foot-wide two-way drive aisles. A trash enclosure would be located at the southwesterly portion of the parking garage.

Regarding the parking requirements for the proposed development, the City of Jersey City Ordinance requires a minimum of 0.5 parking spaces per residential unit and does not require retail parking. For the proposed 218-unit mixed-use development, this equates to 109 required spaces. The site would provide 105 total parking spaces, inclusive of two (2) garage ADA-accessible parking spaces, 85 mechanical lift spaces, and 18 surface parking lot spaces. Of the 105 total proposed parking spaces, 103 spaces would be dedicated to

the residential portion of the development and two (2) spaces would be provided for the retail portion of the development. In addition, the site would provide 109 total bicycle parking spaces. The spaces would be nine (9) feet wide by 18 feet deep in accordance with City of Jersey City Ordinance and industry standards.

It is important to consider the urban/suburban setting of the proposed development, the availability of nearby transit options, and the characteristics of the proposed use when assessing the adequacy of parking supply. Based on the ITE Journal article, "Do Land Use, Transit, and Walk Access Affect Residential Parking Demand," there is a direct correlation between land use (i.e. rural/suburban/urban) and parking utilization, which "suggests that low auto ownership households often self-select locations than can support their transportation needs without a private vehicle."

Based on American Community Survey data provided by the U.S. Census Bureau, approximately 56% of Jersey City residents, use public transportation, walk, or use means other than single-passenger vehicles to commute to work and approximately 29% of households do not own a vehicle. The location of the proposed development is particularly suited to provide transit options for its occupants as it is located within an approximate 12-minute walk from West Side Avenue Light Rail Station which serves NJ Transit's Hudson-Bergen Light Rail Line and provides direct service to Hoboken Terminal, Exchange Place, and Tonnelle Avenue as well as transfer service to other lines on the NJ Transit system. Further, the subject site is located within an approximate 10-minute walk from bus stops serving NJ Transit Bus Routes 1 and 80. These bus routes provide access to Newark Penn Station, Exchange Place, Journal Square, and various points of interest throughout Hudson and Essex counties. These available transit options within walking distance of the proposed development would likely reduce vehicular travel by residents to and from the subject property, thus reducing the parking demand of the proposed development.

Based on the nearby transit options for the site's residents and ITE Journal article research, the proposed parking supply of 105 spaces would be sufficient to support the expected parking demand of the proposed development.

CONCLUSIONS

This report was prepared to examine the potential traffic impact of the proposed mixed-use development on the adjacent roadway network. 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. The site driveways and on-site layout have been designed to provide for effective access to and from the subject property. Based on nearby transit options for the site's residents, ITE Journal article research, and local characteristics of the site and surrounding area, the parking supply would be sufficient to support this project.

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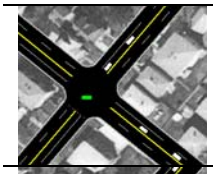
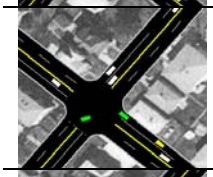
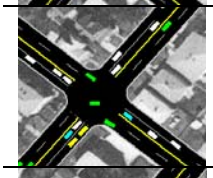
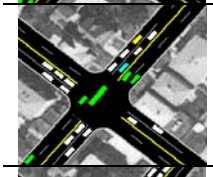
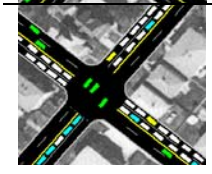
TECHNICAL APPENDIX

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

TURNING MOVEMENT COUNT DATA

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Intersection of Bennet Street/Hudson Mall Driveway (E/W)
and NJ Route 440 (N/S)
Jersey City, Hudson County, New Jersey
Tuesday, December 15, 2020

File Name : RUT-200343.01
Site Code : 00200343
Start Date : 12/15/2020
Page No : 1

Groups Printed- Auto - HV - B/SB

	Hudson Mall Driveway Eastbound					Bennet Street Westbound					NJ Route 440 Northbound					NJ Route 440 Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
07:00 AM	20	0	2	0	22	5	13	1	0	19	0	329	0	0	329	0	264	1	0	265	635
07:15 AM	26	0	6	0	32	7	6	1	0	14	0	350	0	0	350	0	274	0	0	274	670
07:30 AM	26	0	5	0	31	13	5	3	1	22	0	362	0	0	362	0	279	1	0	280	695
07:45 AM	17	0	4	0	21	17	16	3	0	36	0	359	0	0	359	0	333	2	0	335	751
Total	89	0	17	0	106	42	40	8	1	91	0	1400	0	0	1400	0	1150	4	0	1154	2751
08:00 AM	26	0	7	1	34	6	20	3	0	29	0	370	0	0	370	0	318	0	0	318	751
08:15 AM	31	0	6	0	37	5	18	0	2	25	0	306	0	0	306	0	248	0	0	248	616
08:30 AM	29	0	7	0	36	9	20	1	0	30	0	365	0	0	365	0	252	1	0	253	684
08:45 AM	46	0	6	0	52	25	40	3	0	68	0	290	0	0	290	0	314	2	0	316	726
Total	132	0	26	1	159	45	98	7	2	152	0	1331	0	0	1331	0	1132	3	0	1135	2777
*** BREAK ***																					
04:00 PM	70	0	23	0	93	29	73	0	0	102	0	361	0	0	361	0	367	0	0	367	923
04:15 PM	82	1	23	3	109	11	50	0	0	61	0	344	0	0	344	0	337	0	0	337	851
04:30 PM	82	0	28	3	113	25	74	3	0	102	0	359	0	0	359	0	346	0	0	346	920
04:45 PM	62	0	20	1	83	15	73	0	0	88	0	354	0	0	354	0	395	0	0	395	920
Total	296	1	94	7	398	80	270	3	0	353	0	1418	0	0	1418	0	1445	0	0	1445	3614
05:00 PM	96	0	24	2	122	23	56	2	0	81	0	368	0	0	368	0	391	0	0	391	962
05:15 PM	78	0	15	6	99	24	59	2	0	85	0	357	0	0	357	0	368	0	0	368	909
05:30 PM	96	0	19	0	115	12	58	1	0	71	0	326	0	0	326	0	379	0	0	379	891
05:45 PM	83	0	20	2	105	17	61	1	0	79	0	367	0	0	367	0	361	0	0	361	912
Total	353	0	78	10	441	76	234	6	0	316	0	1418	0	0	1418	0	1499	0	0	1499	3674
06:00 PM	99	0	12	0	111	22	52	4	0	78	0	349	0	0	349	0	381	0	0	381	919
06:15 PM	64	0	38	0	102	21	71	3	0	95	0	330	0	0	330	0	397	0	0	397	924
06:30 PM	64	0	13	3	80	23	43	0	0	66	0	325	0	0	325	0	388	0	0	388	859
06:45 PM	156	0	10	5	171	12	57	0	0	69	0	274	0	0	274	0	369	0	0	369	883
Total	383	0	73	8	464	78	223	7	0	308	0	1278	0	0	1278	0	1535	0	0	1535	3585
Grand Total	1253	1	288	26	1568	321	865	31	3	1220	0	6845	0	0	6845	0	6761	7	0	6768	16401
Apprch %	79.9	0.1	18.4	1.7		26.3	70.9	2.5	0.2		0	100	0	0		0	99.9	0.1	0		
Total %	7.6	0	1.8	0.2	9.6	2	5.3	0.2	0	7.4	0	41.7	0	0	41.7	0	41.2	0	0	41.3	
Auto	1218	1	284	26	1529	316	852	30	3	1201	0	6288	0	0	6288	0	6235	7	0	6242	15260
% Auto	97.2	100	98.6	100	97.5	98.4	98.5	96.8	100	98.4	0	91.9	0	0	91.9	0	92.2	100	0	92.2	93
HV	34	0	3	0	37	5	5	1	0	11	0	552	0	0	552	0	521	0	0	521	1121
% HV	2.7	0	1	0	2.4	1.6	0.6	3.2	0	0.9	0	8.1	0	0	8.1	0	7.7	0	0	7.7	6.8
B/SB	1	0	1	0	2	0	8	0	0	8	0	5	0	0	5	0	5	0	0	5	20
% B/SB	0.1	0	0.3	0	0.1	0	0.9	0	0	0.7	0	0.1	0	0	0.1	0	0.1	0	0	0.1	0.1

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Bennet Street/Hudson Mall Driveway (E/W)
and NJ Route 440 (N/S)
Jersey City, Hudson County, New Jersey
Tuesday, December 15, 2020

File Name : RUT-200343.01
Site Code : 00200343
Start Date : 12/15/2020
Page No : 2

	Hudson Mall Driveway Eastbound					Bennet Street Westbound					NJ Route 440 Northbound					NJ Route 440 Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	26	0	6	0	32	7	6	1	0	14	0	350	0	0	350	0	274	0	0	274	670
07:30 AM	26	0	5	0	31	13	5	3	1	22	0	362	0	0	362	0	279	1	0	280	695
07:45 AM	17	0	4	0	21	17	16	3	0	36	0	359	0	0	359	0	333	2	0	335	751
08:00 AM	26	0	7	1	34	6	20	3	0	29	0	370	0	0	370	0	318	0	0	318	751
Total Volume	95	0	22	1	118	43	47	10	1	101	0	1441	0	0	1441	0	1204	3	0	1207	2867
% App. Total	80.5	0	18.6	0.8		42.6	46.5	9.9	1		0	100	0	0		0	99.8	0.2	0		
PHF	.913	.000	.786	.250	.868	.632	.588	.833	.250	.701	.000	.974	.000	.000	.974	.000	.904	.375	.000	.901	.954
Auto	86	0	20	1	107	40	45	10	1	96	0	1309	0	0	1309	0	1031	3	0	1034	2546
% Auto	90.5	0	90.9	100	90.7	93.0	95.7	100	100	95.0	0	90.8	0	0	90.8	0	85.6	100	0	85.7	88.8
HV	9	0	1	0	10	3	2	0	0	5	0	132	0	0	132	0	168	0	0	168	315
% HV	9.5	0	4.5	0	8.5	7.0	4.3	0	0	5.0	0	9.2	0	0	9.2	0	14.0	0	0	13.9	11.0
B/SB	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	6
% B/SB	0	0	4.5	0	0.8	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0.4	0.2
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	82	0	28	3	113	25	74	3	0	102	0	359	0	0	359	0	346	0	0	346	920
04:45 PM	62	0	20	1	83	15	73	0	0	88	0	354	0	0	354	0	395	0	0	395	920
05:00 PM	96	0	24	2	122	23	56	2	0	81	0	368	0	0	368	0	391	0	0	391	962
05:15 PM	78	0	15	6	99	24	59	2	0	85	0	357	0	0	357	0	368	0	0	368	909
Total Volume	318	0	87	12	417	87	262	7	0	356	0	1438	0	0	1438	0	1500	0	0	1500	3711
% App. Total	76.3	0	20.9	2.9		24.4	73.6	2	0		0	100	0	0		0	100	0	0		
PHF	.828	.000	.777	.500	.855	.870	.885	.583	.000	.873	.000	.977	.000	.000	.977	.000	.949	.000	.000	.949	.964
Auto	312	0	87	12	411	86	260	7	0	353	0	1330	0	0	1330	0	1443	0	0	1443	3537
% Auto	98.1	0	100	100	98.6	98.9	99.2	100	0	99.2	0	92.5	0	0	92.5	0	96.2	0	0	96.2	95.3
HV	5	0	0	0	5	1	0	0	0	1	0	107	0	0	107	0	57	0	0	57	170
% HV	1.6	0	0	0	1.2	1.1	0	0	0	0.3	0	7.4	0	0	7.4	0	3.8	0	0	3.8	4.6
B/SB	1	0	0	0	1	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	4
% B/SB	0.3	0	0	0	0.2	0	0.8	0	0	0.6	0	0.1	0	0	0.1	0	0	0	0	0	0.1

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070
201.340.4468 t. 201.340.4472 f.

Intersection of Ege Avenue (E/W)
and NJ Route 440 (N/S)
Jersey City, Hudson County, New Jersey
Tuesday, December 15, 2020

File Name : RUT-200343.02
Site Code : 00200343
Start Date : 12/15/2020
Page No : 1

Groups Printed- Auto - HV - B/SB

	NJ Route 440 Northbound				
Start Time	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	329	17	346	346
07:15 AM	0	350	14	364	364
07:30 AM	0	362	16	378	378
07:45 AM	0	359	33	392	392
Total	0	1400	80	1480	1480
08:00 AM	0	370	32	402	402
08:15 AM	0	306	25	331	331
08:30 AM	0	365	27	392	392
08:45 AM	0	290	58	348	348
Total	0	1331	142	1473	1473
*** BREAK ***					
04:00 PM	0	361	84	445	445
04:15 PM	0	344	73	417	417
04:30 PM	0	359	86	445	445
04:45 PM	0	354	75	429	429
Total	0	1418	318	1736	1736
05:00 PM	0	368	67	435	435
05:15 PM	0	357	82	439	439
05:30 PM	0	326	61	387	387
05:45 PM	0	367	66	433	433
Total	0	1418	276	1694	1694
06:00 PM	0	349	72	421	421
06:15 PM	0	330	75	405	405
06:30 PM	0	325	59	384	384
06:45 PM	0	274	57	331	331
Total	0	1278	263	1541	1541
Grand Total	0	6845	1079	7924	7924
Apprch %	0	86.4	13.6		
Total %	0	86.4	13.6	100	
Auto	0	6288	1060	7348	7348
% Auto	0	91.9	98.2	92.7	92.7
HV	0	552	11	563	563
% HV	0	8.1	1	7.1	7.1
B/SB	0	5	8	13	13
% B/SB	0	0.1	0.7	0.2	0.2

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Ege Avenue (E/W)
and NJ Route 440 (N/S)
Jersey City, Hudson County, New Jersey
Tuesday, December 15, 2020

File Name : RUT-200343.02
Site Code : 00200343
Start Date : 12/15/2020
Page No : 2

	NJ Route 440 Northbound				
Start Time	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1					
Peak Hour for Entire Intersection Begins at 07:15 AM					
07:15 AM	0	350	14	364	364
07:30 AM	0	362	16	378	378
07:45 AM	0	359	33	392	392
08:00 AM	0	370	32	402	402
Total Volume	0	1441	95	1536	1536
% App. Total	0	93.8	6.2		
PHF	.000	.974	.720	.955	.955
Auto	0	1309	92	1401	1401
% Auto	0	90.8	96.8	91.2	91.2
HV	0	132	3	135	135
% HV	0	9.2	3.2	8.8	8.8
B/SB	0	0	0	0	0
% B/SB	0	0	0	0	0
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1					
Peak Hour for Entire Intersection Begins at 04:30 PM					
04:30 PM	0	359	86	445	445
04:45 PM	0	354	75	429	429
05:00 PM	0	368	67	435	435
05:15 PM	0	357	82	439	439
Total Volume	0	1438	310	1748	1748
% App. Total	0	82.3	17.7		
PHF	.000	.977	.901	.982	.982
Auto	0	1330	306	1636	1636
% Auto	0	92.5	98.7	93.6	93.6
HV	0	107	2	109	109
% HV	0	7.4	0.6	6.2	6.2
B/SB	0	1	2	3	3
% B/SB	0	0.1	0.6	0.2	0.2

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Bennet Street/Hudson Mall Driveway (E/W)
and NJ Route 440 (N/S)
Jersey City, Hudson County, New Jersey
Saturday, December 19, 2020

File Name : RUT-200343.01_SAT
Site Code : 00200343
Start Date : 12/19/2020
Page No : 1

Groups Printed- Auto - HV - B/SB

	Hudson Mall Driveway Eastbound					Bennet Street Westbound					NJ Route 440 Northbound					NJ Route 440 Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
11:00 AM	76	0	11	7	94	25	74	1	0	100	0	286	0	0	286	0	241	2	0	243	723
11:15 AM	76	0	9	0	85	14	75	0	0	89	0	324	0	0	324	0	265	5	0	270	768
11:30 AM	68	0	12	3	83	27	73	0	0	100	0	264	0	0	264	0	326	6	0	332	779
11:45 AM	94	0	13	6	113	35	92	4	0	131	0	281	0	0	281	0	259	3	0	262	787
Total	314	0	45	16	375	101	314	5	0	420	0	1155	0	0	1155	0	1091	16	0	1107	3057
12:00 PM	79	0	28	2	109	37	69	0	0	106	0	287	0	0	287	0	284	5	0	289	791
12:15 PM	97	0	27	2	126	29	60	1	1	91	0	280	0	0	280	0	336	0	0	336	833
12:30 PM	76	0	20	2	98	18	77	3	0	98	0	340	0	0	340	0	324	3	0	327	863
12:45 PM	85	0	25	7	117	27	99	0	0	126	0	310	0	0	310	0	314	6	0	320	873
Total	337	0	100	13	450	111	305	4	1	421	0	1217	0	0	1217	0	1258	14	0	1272	3360
01:00 PM	89	0	25	6	120	38	88	0	0	126	0	324	0	0	324	0	328	1	0	329	899
01:15 PM	90	0	33	4	127	23	84	1	0	108	0	305	0	0	305	0	319	4	0	323	863
01:30 PM	85	0	25	2	112	20	79	2	0	101	0	339	0	0	339	0	311	0	0	311	863
01:45 PM	79	0	19	6	104	22	82	1	0	105	0	296	0	0	296	0	331	2	0	333	838
Total	343	0	102	18	463	103	333	4	0	440	0	1264	0	0	1264	0	1289	7	0	1296	3463
Grand Total	994	0	247	47	1288	315	952	13	1	1281	0	3636	0	0	3636	0	3638	37	0	3675	9880
Apprch %	77.2	0	19.2	3.6		24.6	74.3	1	0.1		0	100	0	0		0	99	1	0		
Total %	10.1	0	2.5	0.5	13	3.2	9.6	0.1	0	13	0	36.8	0	0	36.8	0	36.8	0.4	0	37.2	
Auto	985	0	245	47	1277	313	943	13	1	1270	0	3545	0	0	3545	0	3471	36	0	3507	9599
% Auto	99.1	0	99.2	100	99.1	99.4	99.1	100	100	99.1	0	97.5	0	0	97.5	0	95.4	97.3	0	95.4	97.2
HV	9	0	2	0	11	2	5	0	0	7	0	89	0	0	89	0	166	1	0	167	274
% HV	0.9	0	0.8	0	0.9	0.6	0.5	0	0	0.5	0	2.4	0	0	2.4	0	4.6	2.7	0	4.5	2.8
B/SB	0	0	0	0	0	0	4	0	0	4	0	2	0	0	2	0	1	0	0	1	7
% B/SB	0	0	0	0	0	0	0.4	0	0	0.3	0	0.1	0	0	0.1	0	0	0	0	0	0.1

	Hudson Mall Driveway Eastbound					Bennet Street Westbound					NJ Route 440 Northbound					NJ Route 440 Southbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	76	0	20	2	98	18	77	3	0	98	0	340	0	0	340	0	324	3	0	327	863
12:45 PM	85	0	25	7	117	27	99	0	0	126	0	310	0	0	310	0	314	6	0	320	873
01:00 PM	89	0	25	6	120	38	88	0	0	126	0	324	0	0	324	0	328	1	0	329	899
01:15 PM	90	0	33	4	127	23	84	1	0	108	0	305	0	0	305	0	319	4	0	323	863
Total Volume	340	0	103	19	462	106	348	4	0	458	0	1279	0	0	1279	0	1285	14	0	1299	3498
% App. Total	73.6	0	22.3	4.1		23.1	76	0.9	0		0	100	0	0		0	98.9	1.1	0		
PHF	.944	.000	.780	.679	.909	.697	.879	.333	.000	.909	.000	.940	.000	.000	.940	.000	.979	.583	.000	.987	.973
Auto	339	0	102	19	460	104	345	4	0	453	0	1246	0	0	1246	0	1231	14	0	1245	3404
% Auto	99.7	0	99.0	100	99.6	98.1	99.1	100	0	98.9	0	97.4	0	0	97.4	0	95.8	100	0	95.8	97.3
HV	1	0	1	0	2	2	1	0	0	3	0	33	0	0	33	0	53	0	0	53	91
% HV	0.3	0	1.0	0	0.4	1.9	0.3	0	0	0.7	0	2.6	0	0	2.6	0	4.1	0	0	4.1	2.6
B/SB	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
% B/SB	0	0	0	0	0	0	0.6	0	0	0.4	0	0	0	0	0	0	0.1	0	0	0.1	0.1

Stonefield Engineering & Design, LLC

92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Ege Avenue (E/W)
and NJ Route 440 (N/S)
Jersey City, Hudson County, New Jersey
Saturday, December 19, 2020

File Name : RUT-200343.02_SAT
Site Code : 00200343
Start Date : 12/19/2020
Page No : 1

Groups Printed- Auto - HV - B/SB

	NJ Route 440 Northbound				
Start Time	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	286	84	370	370
11:15 AM	0	324	77	401	401
11:30 AM	0	264	72	336	336
11:45 AM	0	281	109	390	390
Total	0	1155	342	1497	1497
12:00 PM	0	287	96	383	383
12:15 PM	0	280	70	350	350
12:30 PM	0	340	92	432	432
12:45 PM	0	310	91	401	401
Total	0	1217	349	1566	1566
01:00 PM	0	324	100	424	424
01:15 PM	0	305	74	379	379
01:30 PM	0	339	107	446	446
01:45 PM	0	296	116	412	412
Total	0	1264	397	1661	1661
Grand Total	0	3636	1088	4724	4724
Apprch %	0	77	23		
Total %	0	77	23	100	
Auto	0	3545	1076	4621	4621
% Auto	0	97.5	98.9	97.8	97.8
HV	0	89	8	97	97
% HV	0	2.4	0.7	2.1	2.1
B/SB	0	2	4	6	6
% B/SB	0	0.1	0.4	0.1	0.1

	NJ Route 440 Northbound				
Start Time	Left	Thru	Right	App. Total	Int. Total

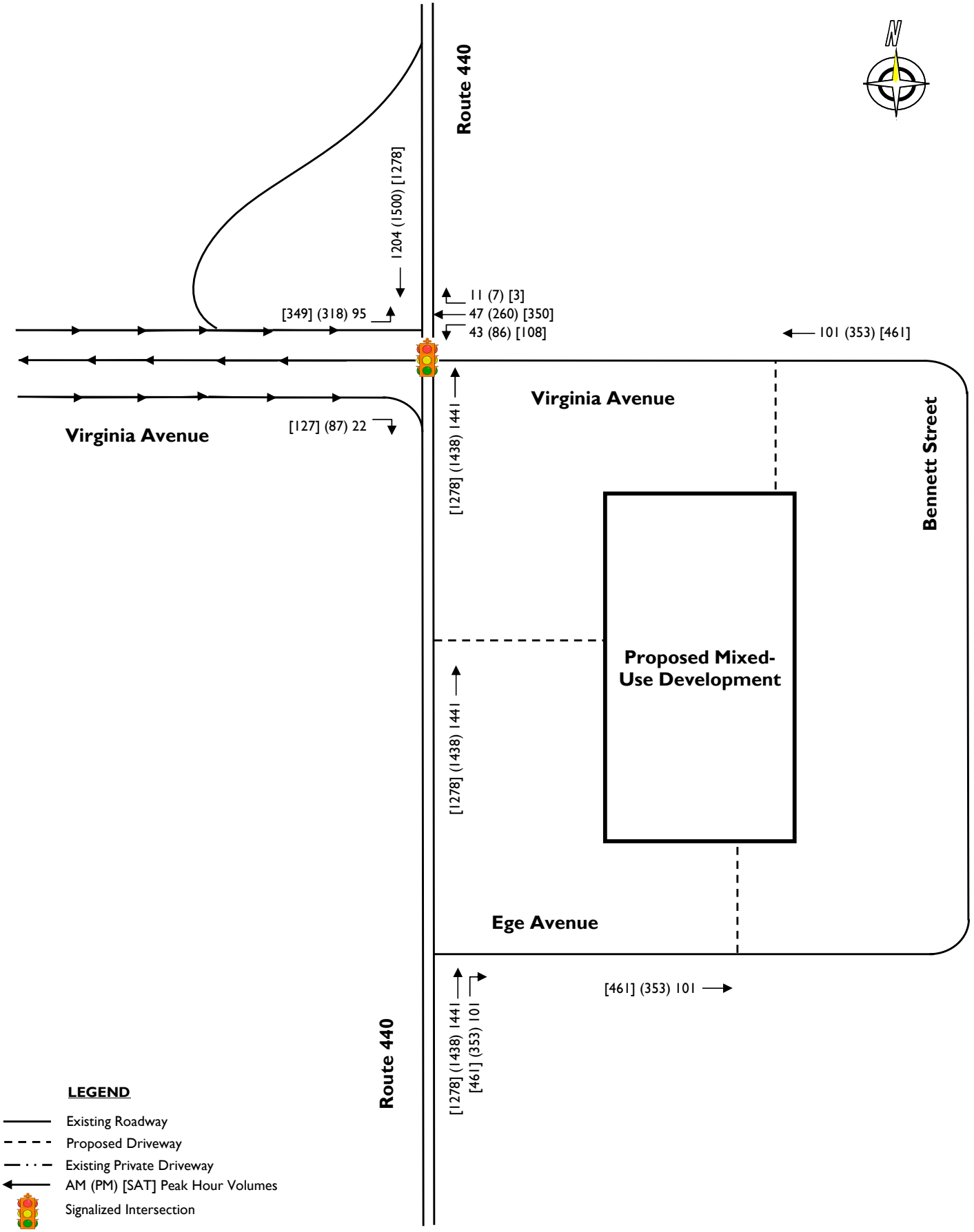
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 01:00 PM

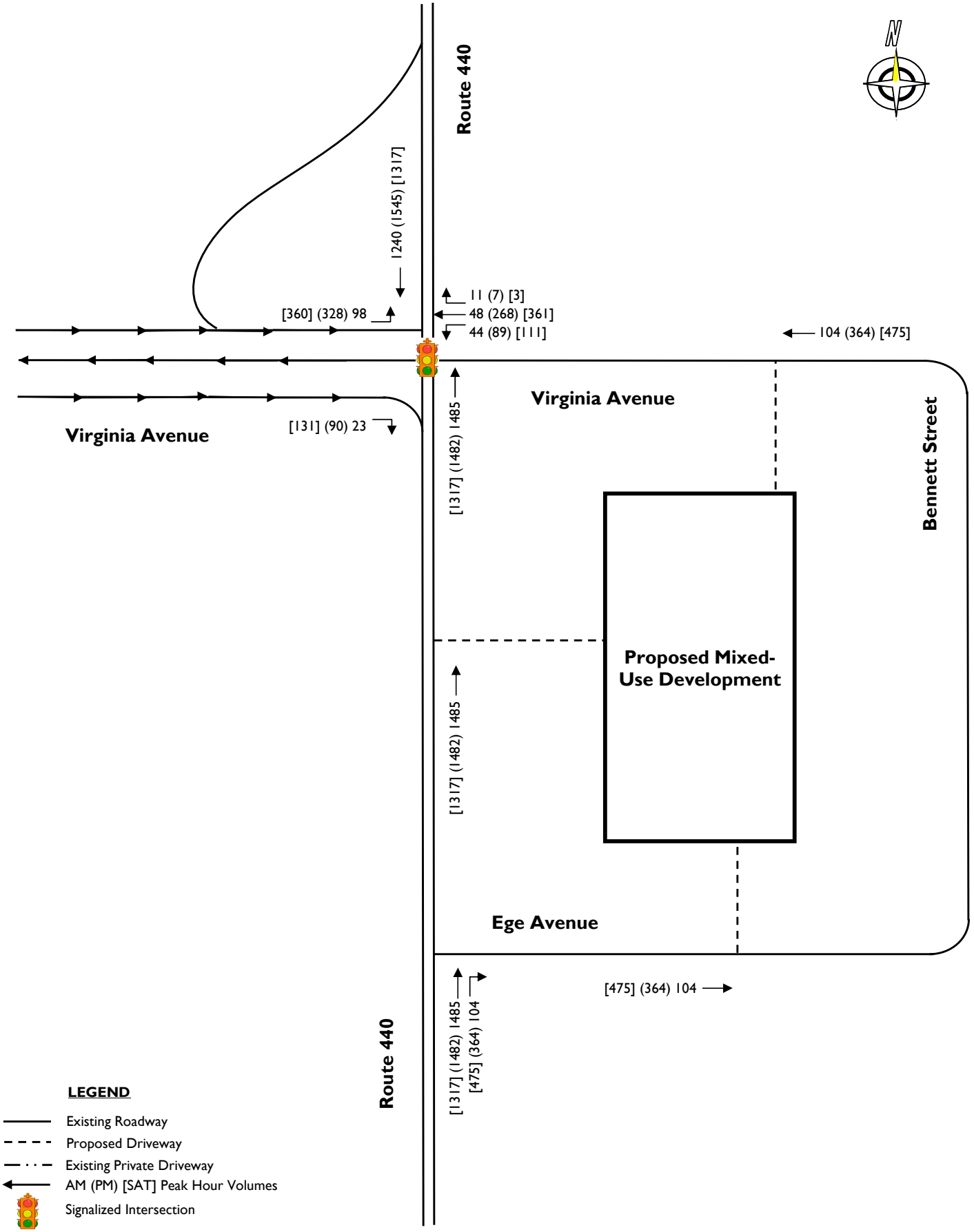
01:00 PM	0	324	100	424	424
01:15 PM	0	305	74	379	379
01:30 PM	0	339	107	446	446
01:45 PM	0	296	116	412	412
Total Volume	0	1264	397	1661	1661
% App. Total	0	76.1	23.9		
PHF	.000	.932	.856	.931	.931
Auto	0	1235	395	1630	1630
% Auto	0	97.7	99.5	98.1	98.1
HV	0	28	2	30	30
% HV	0	2.2	0.5	1.8	1.8
B/SB	0	1	0	1	1
% B/SB	0	0.1	0	0.1	0.1

FIGURES

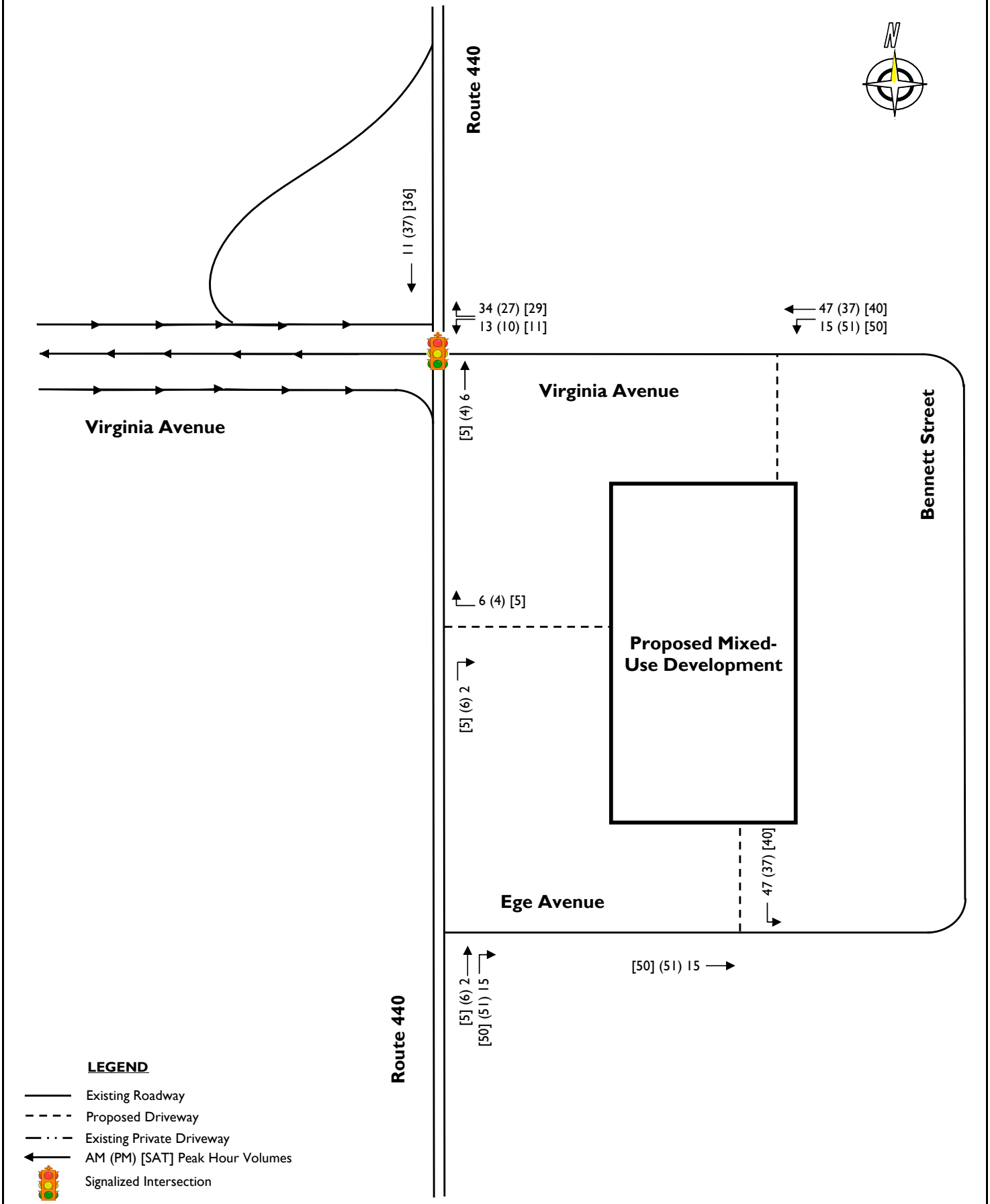
STONEFIELD	Proposed Mixed-Use Development City of Jersey City, Hudson County, New Jersey 682 Route 440 Traffic Impact Study	FIGURE 1 Site Location Map



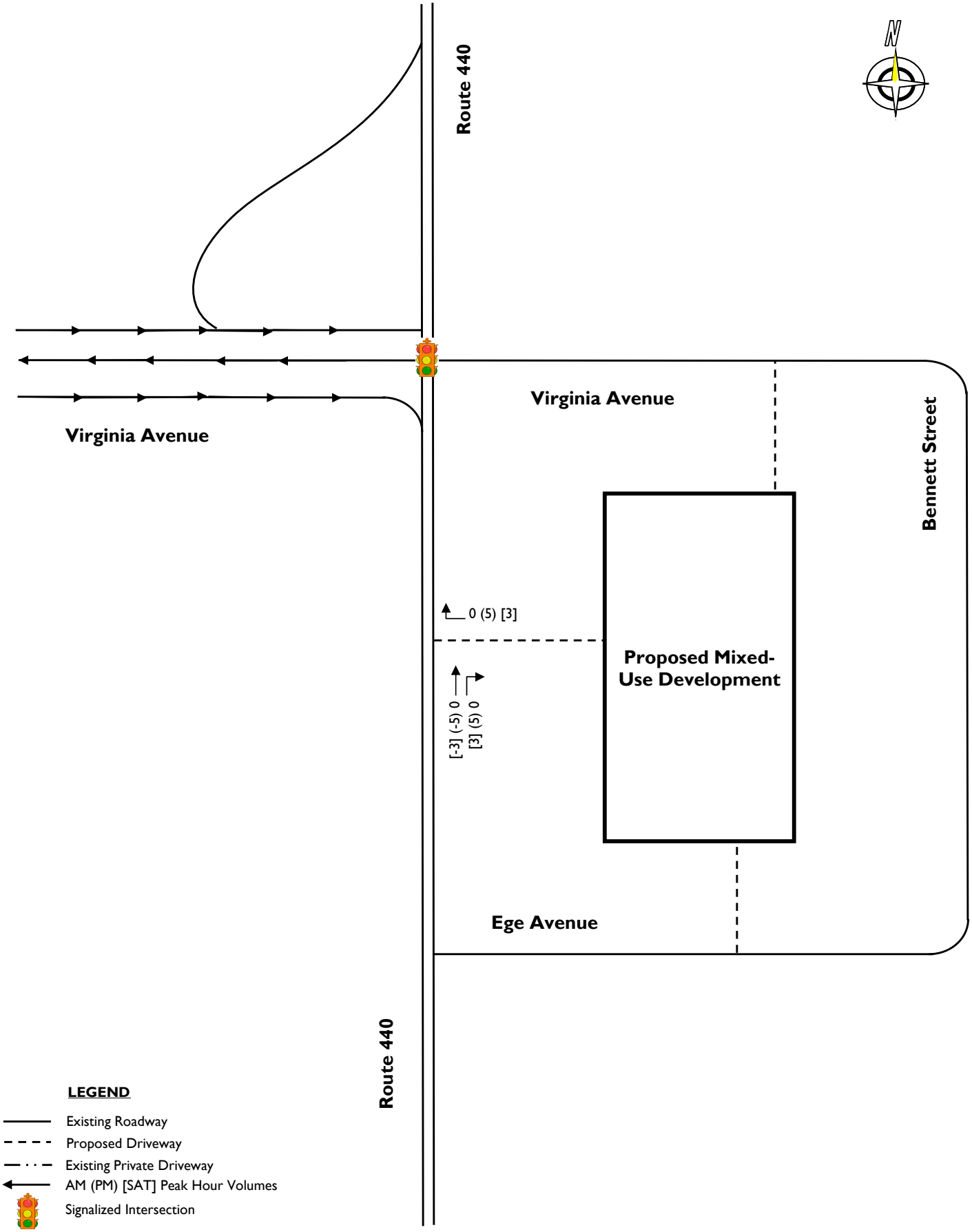
STONEFIELD	**Proposed Mixed-Use Development** **City of Jersey City, Hudson County, New Jersey** **682 Route 440** **Traffic Impact Study**	**FIGURE 2** **2020 Existing Traffic Volumes**



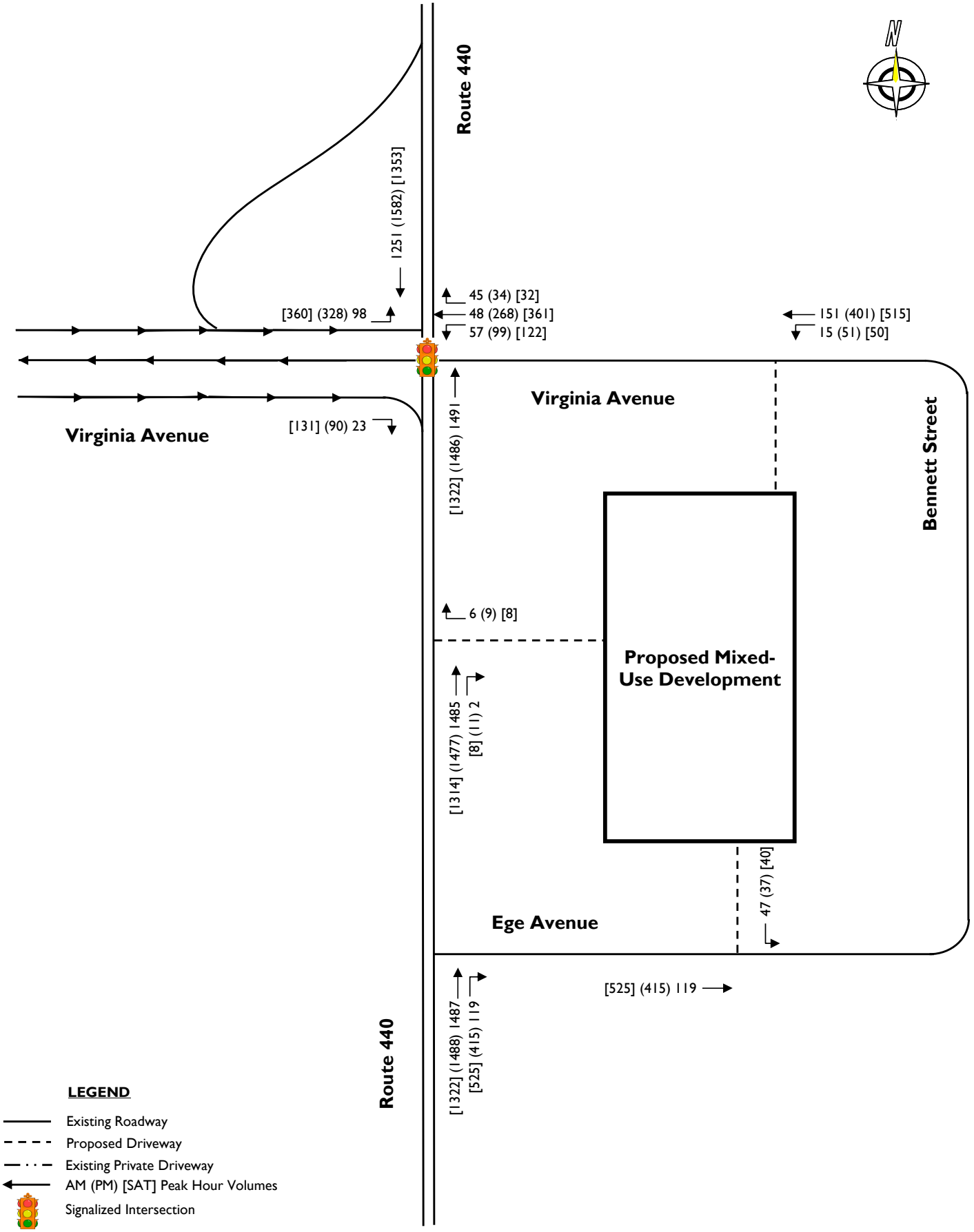
STONEFIELD	**Proposed Mixed-Use Development** **City of Jersey City, Hudson County, New Jersey** **682 Route 440** **Traffic Impact Study**	**FIGURE 3** **2023 No-Build Traffic Volumes**



STONEFIELD	**Proposed Mixed-Use Development** **City of Jersey City, Hudson County, New Jersey** **682 Route 440** **Traffic Impact Study**	**FIGURE 4** **"New" Site-Generated Traffic Volumes**



STONEFIELD	**Proposed Mixed-Use Development** **City of Jersey City, Hudson County, New Jersey** **682 Route 440** **Traffic Impact Study**	**FIGURE 5** **"Pass-By" Site-Generated Traffic Volumes**



STONEFIELD	**Proposed Mixed-Use Development** **City of Jersey City, Hudson County, New Jersey** **682 Route 440** **Traffic Impact Study**	**FIGURE 6** **2023 Build Traffic Volumes**

CAPACITY ANALYSIS DETAIL SHEETS

Movement	EBR	WBL	WBT	WBR2	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	22	43	47	11	1441	1204	95
Future Volume (vph)	22	43	47	11	1441	1204	95
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	0.97		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1667	1864	3752		3661	3500	3518
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1667	1864	3752		3661	3500	3518
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	45	49	12	1517	1267	100
RTOR Reduction (vph)	0	0	30	0	0	0	0
Lane Group Flow (vph)	23	45	31	0	1517	1267	100
Heavy Vehicles (%)	9%	7%	4%	0%	9%	14%	10%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	300	335	675		2611	2496	633
v/s Ratio Prot			0.01		c0.41	0.36	
v/s Ratio Perm	0.01	0.02					c0.03
v/c Ratio	0.08	0.13	0.05		0.58	0.51	0.16
Uniform Delay, d1	51.1	51.7	50.9		10.5	9.7	51.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.8	0.1		1.0	0.7	0.5
Delay (s)	51.6	52.5	51.0		11.5	10.4	52.4
Level of Service	D	D	D		B	B	D
Approach Delay (s)			51.6		11.5	10.4	
Approach LOS			D		B	B	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBR	WBL	WBT	WBR2	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	87	86	260	7	1438	1500	318
Future Volume (vph)	87	86	260	7	1438	1500	318
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	1.00		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1816	1975	3937		3694	3837	3794
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1816	1975	3937		3694	3837	3794
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	91	90	271	7	1498	1562	331
RTOR Reduction (vph)	0	0	30	0	0	0	0
Lane Group Flow (vph)	91	90	248	0	1498	1563	331
Heavy Vehicles (%)	0%	1%	1%	0%	8%	4%	2%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	326	355	708		2635	2737	682
v/s Ratio Prot			0.06		0.41	c0.41	
v/s Ratio Perm	0.05	0.05					c0.09
v/c Ratio	0.28	0.25	0.35		0.57	0.57	0.49
Uniform Delay, d1	53.1	52.8	53.8		10.4	10.4	55.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	1.7	1.4		0.9	0.9	2.5
Delay (s)	55.2	54.6	55.2		11.3	11.3	57.7
Level of Service	E	D	E		B	B	E
Approach Delay (s)			55.0		11.3	11.3	
Approach LOS			E		B	B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBR	WBL	WBT	WBR2	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	127	108	350	3	1278	1278	349
Future Volume (vph)	127	108	350	3	1278	1278	349
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	1.00		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1799	1956	3946		3912	3837	3832
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1799	1956	3946		3912	3837	3832
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	131	111	361	3	1318	1318	360
RTOR Reduction (vph)	0	0	30	0	0	0	0
Lane Group Flow (vph)	131	111	334	0	1318	1318	360
Heavy Vehicles (%)	1%	2%	1%	0%	2%	4%	1%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	323	352	710		2790	2737	689
v/s Ratio Prot			0.08		0.34	c0.34	
v/s Ratio Perm	0.07	0.06					c0.09
v/c Ratio	0.41	0.32	0.47		0.47	0.48	0.52
Uniform Delay, d1	54.4	53.5	55.1		9.3	9.4	55.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.7	2.3	2.2		0.6	0.6	2.8
Delay (s)	58.2	55.8	57.3		9.9	10.0	58.5
Level of Service	E	E	E		A	A	E
Approach Delay (s)			57.0		9.9	10.0	
Approach LOS			E		A	A	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBR	WBL	WBT	WBR2	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	23	44	48	11	1485	1240	98
Future Volume (vph)	23	44	48	11	1485	1240	98
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	0.97		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1667	1864	3754		3661	3500	3518
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1667	1864	3754		3661	3500	3518
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	46	51	12	1563	1305	103
RTOR Reduction (vph)	0	0	30	0	0	0	0
Lane Group Flow (vph)	24	46	33	0	1563	1305	103
Heavy Vehicles (%)	9%	7%	4%	0%	9%	14%	10%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	300	335	675		2611	2496	633
v/s Ratio Prot			0.01		c0.43	0.37	
v/s Ratio Perm	0.01	0.02					c0.03
v/c Ratio	0.08	0.14	0.05		0.60	0.52	0.16
Uniform Delay, d1	51.2	51.7	50.9		10.8	9.8	52.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.9	0.1		1.0	0.8	0.6
Delay (s)	51.7	52.6	51.0		11.8	10.6	52.5
Level of Service	D	D	D		B	B	D
Approach Delay (s)			51.7		11.8	10.6	
Approach LOS			D		B	B	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBR	WBL	WBT	WBR2	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	90	89	268	7	1482	1545	328
Future Volume (vph)	90	89	268	7	1482	1545	328
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	1.00		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1816	1975	3937		3694	3837	3794
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1816	1975	3937		3694	3837	3794
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	94	93	279	7	1544	1609	342
RTOR Reduction (vph)	0	0	30	0	0	0	0
Lane Group Flow (vph)	94	93	256	0	1544	1609	342
Heavy Vehicles (%)	0%	1%	1%	0%	8%	4%	2%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	326	355	708		2635	2737	682
v/s Ratio Prot			0.07		0.42	c0.42	
v/s Ratio Perm	0.05	0.05					c0.09
v/c Ratio	0.29	0.26	0.36		0.59	0.59	0.50
Uniform Delay, d1	53.2	52.9	53.9		10.6	10.6	55.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.2	1.8	1.4		1.0	0.9	2.6
Delay (s)	55.4	54.7	55.4		11.6	11.5	58.1
Level of Service	E	D	E		B	B	E
Approach Delay (s)			55.2		11.6	11.5	
Approach LOS			E		B	B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBR	WBL	WBT	WBR2	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	131	111	361	3	1317	1317	360
Future Volume (vph)	131	111	361	3	1317	1317	360
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	1.00		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1799	1956	3946		3912	3837	3832
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1799	1956	3946		3912	3837	3832
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	135	114	372	3	1358	1358	371
RTOR Reduction (vph)	0	0	30	0	0	0	0
Lane Group Flow (vph)	135	114	345	0	1358	1358	371
Heavy Vehicles (%)	1%	2%	1%	0%	2%	4%	1%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	323	352	710		2790	2737	689
v/s Ratio Prot			0.09		0.35	c0.35	
v/s Ratio Perm	0.08	0.06					c0.10
v/c Ratio	0.42	0.32	0.49		0.49	0.50	0.54
Uniform Delay, d1	54.5	53.6	55.3		9.4	9.5	55.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9	2.4	2.4		0.6	0.6	3.0
Delay (s)	58.5	56.0	57.6		10.1	10.2	58.8
Level of Service	E	E	E		B	B	E
Approach Delay (s)			57.3		10.1	10.2	
Approach LOS			E		B	B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBR	WBL	WBT	WBR	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	23	57	48	45	1491	1251	98
Future Volume (vph)	23	57	48	45	1491	1251	98
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	0.93		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1667	1864	3627		3661	3500	3518
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1667	1864	3627		3661	3500	3518
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	60	51	47	1569	1317	103
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	24	60	98	0	1569	1317	103
Heavy Vehicles (%)	9%	7%	4%	0%	9%	14%	10%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	300	335	652		2611	2496	633
v/s Ratio Prot			0.03		c0.43	0.38	
v/s Ratio Perm	0.01	c0.03					0.03
v/c Ratio	0.08	0.18	0.15		0.60	0.53	0.16
Uniform Delay, d1	51.2	52.1	51.8		10.8	9.9	52.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	1.2	0.5		1.0	0.8	0.6
Delay (s)	51.7	53.3	52.3		11.8	10.7	52.5
Level of Service	D	D	D		B	B	D
Approach Delay (s)			52.7		11.8	10.7	
Approach LOS			D		B	B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑			↰	
Traffic Vol, veh/h	0	119	0	0	47	0
Future Vol, veh/h	0	119	0	0	47	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	129	0	0	51	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	129	-
Stage 1	-	-	0	-
Stage 2	-	-	129	-
Critical Hdwy	-	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	-	3.518	-
Pot Cap-1 Maneuver	0	-	865	0
Stage 1	0	-	-	0
Stage 2	0	-	897	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	865	-
Mov Cap-2 Maneuver	-	-	865	-
Stage 1	-	-	-	-
Stage 2	-	-	897	-

Approach	EB	SB
HCM Control Delay, s	0	9.4
HCM LOS		A

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	865
HCM Lane V/C Ratio	-	0.059
HCM Control Delay (s)	-	9.4
HCM Lane LOS	-	A
HCM 95th %tile Q(veh)	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	6	1485	2	0	0
Future Vol, veh/h	0	6	1485	2	0	0
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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	1614	2	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	808	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	324	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	324	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	324	-
HCM Lane V/C Ratio	-	-	0.02	-
HCM Control Delay (s)	-	-	16.3	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Movement	EBR	WBL	WBT	WBR	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	90	99	268	34	1486	1582	328
Future Volume (vph)	90	99	268	34	1486	1582	328
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	0.98		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1816	1975	3889		3694	3837	3794
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1816	1975	3889		3694	3837	3794
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	94	103	279	35	1548	1648	342
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	94	103	314	0	1548	1648	342
Heavy Vehicles (%)	0%	1%	1%	0%	8%	4%	2%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	326	355	700		2635	2737	682
v/s Ratio Prot			0.08		0.42	c0.43	
v/s Ratio Perm	0.05	0.05					c0.09
v/c Ratio	0.29	0.29	0.45		0.59	0.60	0.50
Uniform Delay, d1	53.2	53.2	54.9		10.6	10.8	55.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.2	2.1	2.1		1.0	1.0	2.6
Delay (s)	55.4	55.3	56.9		11.6	11.8	58.1
Level of Service	E	E	E		B	B	E
Approach Delay (s)			56.5		11.6	11.8	
Approach LOS			E		B	B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑			↰	
Traffic Vol, veh/h	0	415	0	0	37	0
Future Vol, veh/h	0	415	0	0	37	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	451	0	0	40	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	451	-
Stage 1	-	-	0	-
Stage 2	-	-	451	-
Critical Hdwy	-	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	-	3.518	-
Pot Cap-1 Maneuver	0	-	566	0
Stage 1	0	-	-	0
Stage 2	0	-	642	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	566	-
Mov Cap-2 Maneuver	-	-	566	-
Stage 1	-	-	-	-
Stage 2	-	-	642	-

Approach	EB	SB
HCM Control Delay, s	0	11.8
HCM LOS		B

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	566
HCM Lane V/C Ratio	-	0.071
HCM Control Delay (s)	-	11.8
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	1477	11	0	0
Future Vol, veh/h	0	9	1477	11	0	0
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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	1605	12	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	809	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	323	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	323	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	323	-
HCM Lane V/C Ratio	-	-	0.03	-
HCM Control Delay (s)	-	-	16.5	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Movement	EBR	WBL	WBT	WBR	NBT	SBT	SEL2
Lane Configurations							
Traffic Volume (vph)	131	122	361	32	1322	1353	360
Future Volume (vph)	131	122	361	32	1322	1353	360
Ideal Flow (vphpl)	2100	2100	2100	2100	2100	2100	2100
Total Lost time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Util. Factor	1.00	1.00	0.95		0.95	0.95	0.97
Frt	0.86	1.00	0.99		1.00	1.00	1.00
Flt Protected	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (prot)	1799	1956	3905		3912	3837	3832
Flt Permitted	1.00	0.95	1.00		1.00	1.00	0.95
Satd. Flow (perm)	1799	1956	3905		3912	3837	3832
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	135	126	372	33	1363	1395	371
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	135	126	405	0	1363	1395	371
Heavy Vehicles (%)	1%	2%	1%	0%	2%	4%	1%
Turn Type	Perm	Perm	NA		NA	NA	Perm
Protected Phases			6		4	8	
Permitted Phases	2	6					2
Actuated Green, G (s)	27.0	27.0	27.0		107.0	107.0	27.0
Effective Green, g (s)	27.0	27.0	27.0		107.0	107.0	27.0
Actuated g/C Ratio	0.18	0.18	0.18		0.71	0.71	0.18
Clearance Time (s)	8.0	8.0	8.0		8.0	8.0	8.0
Lane Grp Cap (vph)	323	352	702		2790	2737	689
v/s Ratio Prot			c0.10		0.35	c0.36	
v/s Ratio Perm	0.08	0.06					0.10
v/c Ratio	0.42	0.36	0.58		0.49	0.51	0.54
Uniform Delay, d1	54.5	53.9	56.3		9.5	9.7	55.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9	2.8	3.4		0.6	0.7	3.0
Delay (s)	58.5	56.7	59.7		10.1	10.4	58.8
Level of Service	E	E	E		B	B	E
Approach Delay (s)			59.0		10.1	10.4	
Approach LOS			E		B	B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	154.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑			↰	
Traffic Vol, veh/h	0	525	0	0	40	0
Future Vol, veh/h	0	525	0	0	40	0
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	571	0	0	43	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	571	-
Stage 1	-	-	0	-
Stage 2	-	-	571	-
Critical Hdwy	-	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	-	-	3.518	-
Pot Cap-1 Maneuver	0	-	482	0
Stage 1	0	-	-	0
Stage 2	0	-	565	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	482	-
Mov Cap-2 Maneuver	-	-	482	-
Stage 1	-	-	-	-
Stage 2	-	-	565	-

Approach	EB	SB
HCM Control Delay, s	0	13.2
HCM LOS		B

Minor Lane/Major Mvmt	EBT	SBLn1
Capacity (veh/h)	-	482
HCM Lane V/C Ratio	-	0.09
HCM Control Delay (s)	-	13.2
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	1314	8	0	0
Future Vol, veh/h	0	8	1314	8	0	0
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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	1428	9	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	719	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	371	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	371	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	371	-
HCM Lane V/C Ratio	-	-	0.023	-
HCM Control Delay (s)	-	-	14.9	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-