



TRAFFIC IMPACT STUDY

PROPOSED CHIPOTLE RESTAURANT WITH PICK-UP WINDOW

Proposed Chipotle Restaurant with
Pick-Up Window
441 Hillsdale Avenue
Borough of Hillsdale
Bergen County, New Jersey

Prepared For:
VanRock Properties

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STONEFIELD

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INTRODUCTION

This Traffic Impact Study was prepared to investigate the potential impacts of the proposed Chipotle restaurant with pick-up window on the adjacent roadway network. The subject property is located in the southeasterly quadrant of the intersection of Hillsdale Avenue and Patterson Street in the Borough of Hillsdale, Bergen County, New Jersey. The site location is shown on appended **Figure I**.

The subject property is designated as Block 1105, Lot 4 as depicted on the Borough of Hillsdale Tax Map. The site has approximately 99 feet of frontage along Hillsdale Avenue and approximately 314 feet of frontage along Patterson Street. The existing site is occupied by a Friendly's restaurant. Access is presently provided via one (1) unsignalized ingress only driveway along Hillsdale Avenue, and one (1) unsignalized full-movement driveway along Patterson Street. Under the proposed development program, the existing structure would be repurposed as a 2,445-square-foot Chipotle restaurant with a pick-up window. Access is proposed via one (1) unsignalized right-turn egress only driveway along Hillsdale Avenue and one (1) unsignalized full-movement driveway along Patterson Street.

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 II 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 timing directives provided by Bergen County.

2021 EXISTING CONDITION

2021 EXISTING ROADWAY CONDITIONS

The proposed Chipotle restaurant with pick-up window is located in the southeasterly quadrant of the intersection of Hillsdale Avenue and Patterson Street in the Borough of Hillsdale, Bergen County, New Jersey. The subject property is designated as Block 1105, Lot 4 as depicted on the Borough of Hillsdale Tax Map. The site has approximately 99 feet of frontage along Hillsdale Avenue and approximately 314 feet of frontage along Patterson Street. Land uses in the area are a mix of commercial and residential uses.

Hillsdale Avenue (CR 112) is classified as an Urban Minor Arterial roadway with a general east-west orientation and is under the jurisdiction of Bergen County. Along the site frontage, the roadway provides one (1) lane of travel in each direction with additional lanes at key intersections to facilitate turning movements and provide additional capacity. Hillsdale Avenue has a posted speed limit of 35 mph. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking is permitted along both sides of the roadway, with one (1)-hour restrictions in effect from 7:00 a.m. to 7:00 p.m., except Sundays. Hillsdale Avenue provides east-west mobility within Hillsdale and surrounding municipalities for a mix of commercial and residential uses along its length.

Patterson Street is a local roadway with a general north-south orientation and is under the jurisdiction of the Borough of Hillsdale. Along the site frontage, the roadway provides one (1) lane of travel in each direction with additional lanes at key intersections to facilitate turning movements and provide additional capacity. Patterson Street has a posted speed limit of 25 mph. Curb and sidewalk are provided along the westerly side of the roadway, shoulders are not provided, and on-street parking is not permitted. Patterson Street provides north-south mobility within Hillsdale, from Lake Drive at its northern terminus to Glendale Drive at its southern terminus, for a mix of residential and commercial uses along its length.

Washington Avenue is a local roadway with a general east-west orientation and is under the jurisdiction of the Borough of Hillsdale. Along the site frontage, the roadway generally provides one (1) lane of travel in each direction. Washington Avenue does not have a posted speed limit. Curb is provided along both sides of the roadway, sidewalk are generally provided along the northerly side of the roadway, shoulders are not provided, and on-street parking is not permitted. Washington Avenue provides east-west mobility within Hillsdale, from Glendale Drive at its western terminus, to Demarest Avenue at its eastern terminus, for a mix of residential and commercial uses along its length.

Glendale Drive is a local roadway with general east-west orientation and is under the jurisdiction of the Borough of Hillsdale. In the vicinity of the site, the roadway provides one (1) lane of travel in each direction.

Glendale Drive has a posted speed limit of 25 mph. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking is permitted along both sides of the roadway. Glendale Drive provides east-west mobility within Hillsdale, from Hazelwood Avenue at its eastern terminus to Patterson Street/Washington Avenue at its western terminus, for primarily residential uses along its length.

Hillsdale Avenue and Patterson Street intersect to form a four (4)-leg intersection controlled by a three (3)-phase traffic signal operating on a 90-second fixed background cycle. The eastbound approach of Hillsdale Avenue provides one (1) exclusive left-turn lane and one (1) shared through/right-turn lane and the westbound approach of Hillsdale Avenue provides one (1) shared left-turn/through lane and one (1) shared through/right-turn lane. The southbound approach of Patterson Street provides one (1) exclusive left-turn lane, one (1) exclusive through lane, and one (1) exclusive right-turn lane. The northbound approach of Patterson Street provides 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.

Patterson Street, Washington Avenue, and Glendale Drive intersect to form an unsignalized T-intersection with the northeasterly approach of Glendale Drive operating under stop control. The southbound approach of Patterson Street provides one (1) shared through/right-turn lane. The westbound approach of Washington Avenue provides one (1) shared left-turn/through lane. The northeastbound approach of Glendale Drive provides one (1) shared left/right turn approach. Crosswalks are provided across the westerly and southerly legs of the intersection.

2021 EXISTING TRAFFIC VOLUMES

Manual turning movement counts were collected during the typical 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:

- ◆ Hillsdale Avenue and Patterson Street
- ◆ Patterson Street, Washington Avenue, and Glendale Drive

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

- ◆ Saturday, July 10, 2021, from 11:00 a.m. to 2:00 p.m.
- ◆ Tuesday, July 13, 2021, 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 evening peak hour occurred from 4:45 p.m. to 5:45 p.m., and the Saturday midday peak hour occurred from 12:00 p.m. to 1:00 p.m. The Technical Appendix contains a summary of the turning movement count data. The 2021 Existing weekday evening and Saturday midday peak-hour 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 evening and Saturday midday peak hours at the study intersections. Under the existing condition, the signalized intersection of Hillsdale Avenue and Patterson Street is calculated to operate at overall Level of Service B during the weekday evening and Saturday midday peak hours. The approaches of the unsignalized intersection of Patterson Street, Washington Avenue, and Glendale Drive are calculated to operate at Level of Service B or better during the weekday evening and Saturday midday peak hours.

2023 NO-BUILD CONDITION

BACKGROUND GROWTH

The 2021 Existing Condition traffic volume data was grown to a future horizon year of 2023, which is a conservative estimate for when the proposed Chipotle restaurant with pick-up window is expected to be fully constructed. In accordance with industry guidelines, the existing traffic volumes at the study intersections were increased by 2.50% annually for two (2) years. These volumes are summarized on appended **Figure 3**. The 2.50% background growth rate was obtained from the New Jersey Department of Transportation (NJDOT) Annual Background Growth Rate Table.

2023 NO-BUILD TRAFFIC VOLUMES

The background growth rate was applied to the 2021 Existing Traffic Volumes to calculate the 2023 No-Build Traffic Volumes for the weekday evening and Saturday midday 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 evening and Saturday midday peak hours at the study intersections. The signalized intersection of Hillsdale Avenue and Patterson Street is calculated to operate generally consistent with the findings of the Existing Condition during the weekday evening and Saturday midday peak hours. The unsignalized intersection of Patterson Street, Washington Avenue, and Glendale Drive are calculated to operate

generally consistent with the findings of the Existing Condition during the weekday evening and Saturday midday peak hours.

2023 BUILD CONDITION

The site-generated traffic volume of the proposed Chipotle restaurant with pick-up window 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 Chipotle restaurant with pick-up window were prepared utilizing the ITE’s Trip Generation Manual, 10th Edition. Trip generation rates associated with Land Use 934 were cited for the 2,445-square-foot Chipotle restaurant with pick-up window. **Table I** provides the weekday evening and Saturday midday trip generation volumes associated with the proposed development.

TABLE I – PROPOSED TRIP GENERATION

Land Use	Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
2,445 SF Fast-Food Restaurant with Pick-Up Window <i>ITE Land Use 934</i>	42	38	80	68	66	134

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 roadway network. Fast-food restaurant uses are specifically located on or adjacent to busy streets to attract motorists already on the roadway. Therefore, the proposed Chipotle 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 934, 49% of the site-generated traffic during the weekday evening peak hour is comprised of pass-by traffic. ITE does not publish pass-by rates associated with Land Use 934 during the Saturday midday peak hour, however, it is reasonable to assume that the Saturday pass-by rates would be similar to those in the weekday evening peak hour. As such, the pass-by rate associated with the weekday evening peak hour was cited to calculate the Saturday midday peak hour pass-by traffic volumes. **Table 2** shows the additional site-generated traffic for the proposed development in terms of newly generated traffic and pass-by traffic.

TABLE 2 – PROPOSED TRIP GENERATION – NEW & PASS-BY TRIPS

Land Use	Weekday Evening Peak Hour			Saturday Midday Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
“New” Trips	23	19	42	36	34	70
“Pass-By” Trips	19	19	38	32	32	64
Total	42	38	80	68	66	134

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.

It should be noted that under existing conditions, the subject property is occupied by an operational Friendly’s Restaurant, with existing trips to and from the site. However, in order to maintain a conservative analysis, no reduction to the trip generation was applied to account for the existing trips.

TRIP ASSIGNMENT/DISTRIBUTION

The trips generated by the proposed development were distributed according to the location of major arterial roadways, existing traffic patterns, and the access management plan of the site. 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 evening and Saturday midday peak hours at the study intersections. **Tables 3** through **8** compare the Existing, No-Build, and Build Conditions Level of Service and delay values.

The signalized intersection of Hillsdale Avenue and Patterson Street is calculated to operate generally consistent with the No-Build Condition during the weekday evening peak hour, and at overall Level of Service C during the Saturday midday peak hour. The approaches of the unsignalized intersection of Patterson Street, Washington Avenue, and Glendale Drive are calculated to operate generally consistent with the findings of the No-Build Condition during the weekday evening peak hour, and at Level of Service C or better during the Saturday midday peak hour. The approaches of the unsignalized intersection of the proposed site driveway

and Hillsdale Avenue are calculated to operate at Level of Service B or better during the weekday evening and Saturday midday peak hours. The approaches of the unsignalized intersection of the proposed site driveway and Patterson Street are calculated to operate at Level of Service B or better during the weekday evening and Saturday midday peak hours.

COMPARATIVE LEVEL OF SERVICE (DELAY) TABLES

HILLSDALE AVENUE & PATTERSON STREET

EB (Eastbound) and WB (Westbound) approaches are the Hillsdale Avenue approaches
NB (Northbound) and SB (Southbound) approaches are the Patterson Street approaches
X (n) = Level of Service (seconds of delay)

TABLE 3 – WEEKDAY EVENING PEAK HOUR

Lane Group	2021 Existing	2023 No-Build	2023 Build
EB Left	A (6.6)	A (7.1)	A (7.9)
EB Through/Right	A (9.3)	B (10.3)	B (11.6)
WB Left/Through	B (10.0)	B (10.8)	B (11.9)
WB Through/Right	B (10.2)	B (11.0)	B (12.1)
NB Left	D (38.6)	D (38.3)	D (37.7)
NB Through/Right	C (31.6)	C (30.9)	C (29.6)
SB Left	C (34.2)	C (33.6)	C (32.3)
SB Through	C (30.8)	C (30.1)	C (28.8)
SB Right	D (36.9)	D (36.2)	C (33.6)
Intersection	B (17.2)	B (17.6)	B (18.1)

TABLE 4 – SATURDAY MIDDAY PEAK HOUR

Lane Group	2021 Existing	2023 No-Build	2023 Build
EB Left	A (7.2)	A (7.8)	A (9.0)
EB Through/Right	B (10.3)	B (11.3)	B (13.6)
WB Left/Through	B (10.7)	B (11.4)	B (13.3)
WB Through/Right	B (10.9)	B (11.6)	B (13.3)
NB Left	D (37.4)	D (37.0)	D (37.4)
NB Through/Right	C (30.4)	C (29.6)	C (27.5)
SB Left	D (35.1)	C (34.5)	C (32.3)
SB Through	C (28.6)	C (27.7)	C (25.9)
SB Right	D (35.2)	C (34.8)	C (30.8)
Intersection	B (19.5)	B (19.8)	C (20.3)

PATTERSON STREET, WASHINGTON AVENUE, & GLENDALE DRIVE

EB (Eastbound) approach is the Patterson Street approach
WB (Westbound) approach is the Washington Avenue approach
NB (Northbound) approach is the Glendale Drive approach
X (n) = Level of Service (seconds of delay)

TABLE 5 – WEEKDAY EVENING PEAK HOUR

Lane Group	2021 Existing	2023 No-Build	2023 Build
WB Left/Through	A (8.0)	A (8.1)	A (8.1)
NB Left/Right	B (12.1)	B (12.4)	B (12.7)

TABLE 6 – SATURDAY MIDDAY PEAK HOUR

Lane Group	2021 Existing	2023 No-Build	2023 Build
WB Left/Through	A (8.1)	A (8.2)	A (8.2)
NB Left/Right	B (14.3)	B (14.9)	C (15.5)

HILLSDALE AVENUE & SITE DRIVEWAY

EB (Eastbound) and WB (Westbound) approaches are the Hillsdale Avenue approaches
NB (Northbound) approach is the site driveway approach
X (n) = Level of Service (seconds of delay)

TABLE 7 – 2023 BUILD CONDITION

Lane Group	Weekday Evening Peak Hour	Saturday Midday Peak Hour
NB Right	B (12.5)	B (12.4)

PATTERSON STREET & SITE DRIVEWAY

EB (Eastbound) and WB (Westbound) approaches are the Patterson Street approaches
SB (Southbound) approach is the site driveway approach
X (n) = Level of Service (seconds of delay)

TABLE 8 – 2023 BUILD CONDITION

Lane Group	Weekday Evening Peak Hour	Saturday Midday Peak Hour
EB Left/Through	A (7.9)	A (8.1)
SB Left/Right	B (10.4)	B (11.4)

SITE CIRCULATION/PARKING SUPPLY

A review was conducted of the proposed Chipotle restaurant with pick-up window using the Site Plan prepared by Page Consultants, Inc., dated March 12, 2021. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Access is proposed via one (1) unsignalized right-turn egress only driveway along Hillsdale Avenue and one (1) unsignalized full-movement driveway along Patterson Street. The trash enclosure is to be located on the southwesterly portion of the site. Two (2)-way vehicular circulation throughout the site would be facilitated by drive aisles with a minimum width of 24 feet. One (1)-way circulation would be facilitated by a 17-foot-wide pick-up lane.

Regarding the parking requirements for the proposed development, the Borough of Hillsdale Ordinance requires one (1) space for every four (4) seats for customers and one (1) space for every two (2) employees. For the proposed Chipotle restaurant with 30 seats for customers and 9 employees per shift, this equates to 13 required spaces. The site would provide 18 total parking spaces, inclusive of two (2) ADA-accessible parking spaces, which meets the parking requirement and would be sufficient to support this project's parking demand. The spaces would be nine (9) feet wide by 18 feet deep in accordance with industry standards.

CONCLUSIONS

This report was prepared to examine the potential traffic impact of the proposed Chipotle restaurant with pick-up window. 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 industry data and local characteristics of the site, the parking supply would be sufficient to support this project.

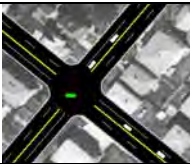
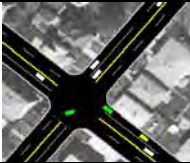

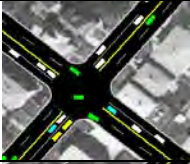
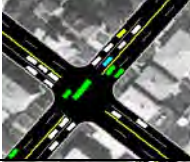
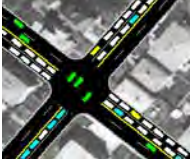
TECHNICAL APPENDIX

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

TURNING MOVEMENT COUNT DATA



TRAFFIC & DATA COLLECTION

Imperial Traffic & Data Collection

www.imperialtdc.com

PO BOX 4637

Cherry Hill, New Jersey, United States 08034

609-706-6100 lklein@imperialtdc.com

Project: Hillsdale & Patterson
 Municipality: Hillsdale, Bergen County, NJ
 Setup: NR
 Location: 41.002642, -74.042934

Count Name: 1. Hillsdale Avenue & Patterson
 Street
 Site Code: 1
 Start Date: 07/10/2021
 Page No: 1

Turning Movement Data

Start Time	Hillsdale Avenue Eastbound							Hillsdale Avenue Westbound							Patterson Street Northbound							Patterson Street Southbound							Int. Total
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	
11:00 AM	0	30	91	32	6	0	159	0	6	87	13	1	0	107	0	30	14	5	2	3	51	0	13	25	21	29	1	88	405
11:15 AM	0	24	82	27	1	0	134	0	7	75	18	0	0	100	0	28	17	7	7	4	59	0	16	29	20	22	1	87	380
11:30 AM	0	30	96	26	4	0	156	0	7	76	14	0	1	97	0	41	18	9	1	2	69	0	11	22	15	19	2	67	389
11:45 AM	0	27	93	40	2	0	162	0	5	86	15	1	0	107	0	46	15	13	2	3	76	0	13	21	33	30	4	97	442
Hourly Total	0	111	362	125	13	0	611	0	25	324	60	2	1	411	0	145	64	34	12	12	255	0	53	97	89	100	8	339	1616
12:00 PM	0	32	91	26	0	0	149	0	9	57	17	1	1	84	0	44	13	15	9	1	81	0	16	15	38	31	2	100	414
12:15 PM	0	26	107	28	1	0	162	0	9	93	14	0	0	116	0	37	24	10	7	1	78	0	11	26	29	30	1	96	452
12:30 PM	0	33	92	43	3	0	171	0	3	88	14	0	3	105	0	32	17	17	5	0	71	0	22	22	20	37	5	101	448
12:45 PM	0	33	111	45	5	0	194	0	10	78	7	2	3	97	0	44	24	9	4	0	81	0	13	24	30	31	2	98	470
Hourly Total	0	124	401	142	9	0	676	0	31	316	52	3	7	402	0	157	78	51	25	2	311	0	62	87	117	129	10	395	1784
1:00 PM	0	26	94	32	1	0	153	0	10	101	12	0	1	123	0	33	21	19	4	1	77	0	9	12	13	26	2	60	413
1:15 PM	0	27	102	25	2	0	156	0	3	73	9	0	0	85	0	25	19	20	5	5	69	0	14	25	17	25	4	81	391
1:30 PM	0	38	110	41	4	0	193	0	7	91	12	0	1	110	0	34	17	13	6	0	70	0	7	15	20	29	1	71	444
1:45 PM	0	19	111	41	6	0	177	0	9	92	14	0	0	115	0	35	13	13	7	1	68	0	10	17	20	34	2	81	441
Hourly Total	0	110	417	139	13	0	679	0	29	357	47	0	2	433	0	127	70	65	22	7	284	0	40	69	70	114	9	293	1689
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7:00 AM	0	23	47	14	1	0	85	0	0	39	7	0	0	46	0	6	5	1	5	1	17	0	4	1	2	33	0	40	188
7:15 AM	0	28	55	18	0	1	101	0	1	62	9	2	0	74	0	5	3	0	6	2	14	0	1	5	3	43	0	52	241
7:30 AM	0	37	64	19	1	1	121	0	2	63	5	0	0	70	0	10	5	2	0	2	17	0	5	2	15	39	1	61	269
7:45 AM	0	38	91	26	0	0	155	0	0	85	3	0	0	88	0	5	6	2	2	0	15	0	5	4	7	48	0	64	322
Hourly Total	0	126	257	77	2	2	462	0	3	249	24	2	0	278	0	26	19	5	13	5	63	0	15	12	27	163	1	217	1020
8:00 AM	0	23	85	25	2	0	135	0	2	99	4	0	0	105	0	12	9	3	1	0	25	0	2	14	15	27	0	58	323
8:15 AM	0	28	85	25	4	0	142	0	3	85	4	3	0	95	0	13	3	5	0	1	21	0	6	9	23	26	1	64	322
8:30 AM	0	26	103	27	3	1	159	0	3	107	12	0	0	122	0	19	9	7	3	1	38	0	3	13	9	25	2	50	369
8:45 AM	0	32	149	26	3	0	210	0	3	110	12	0	1	125	0	18	7	6	0	0	31	0	6	12	9	21	1	48	414
Hourly Total	0	109	422	103	12	1	646	0	11	401	32	3	1	447	0	62	28	21	4	2	115	0	17	48	56	99	4	220	1428
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	39	94	36	4	0	173	0	4	86	11	0	0	101	0	39	9	4	1	0	53	0	10	27	28	20	0	85	412
4:15 PM	0	40	117	34	2	0	193	0	1	79	15	0	0	95	0	35	15	8	0	0	58	0	8	25	13	31	0	77	423
4:30 PM	0	35	119	37	2	0	193	0	4	93	6	0	5	103	0	25	17	4	0	2	46	0	12	19	31	30	0	92	434
4:45 PM	0	39	112	32	1	0	184	0	5	112	11	0	0	128	0	32	18	11	0	0	61	0	6	25	47	18	2	96	469
Hourly Total	0	153	442	139	9	0	743	0	14	370	43	0	5	427	0	131	59	27	1	2	218	0	36	96	119	99	2	350	1738
5:00 PM	0	51	109	36	1	0	197	0	1	109	6	2	0	118	0	37	16	4	0	0	57	0	10	22	32	23	0	87	459
5:15 PM	0	44	133	34	0	0	211	0	4	113	13	0	0	130	0	31	22	11	4	1	68	0	7	15	20	27	4	69	478
5:30 PM	0	49	124	37	4	0	214	0	4	88	9	0	0	101	0	36	15	8	2	0	61	0	6	19	17	31	2	73	449

5:45 PM	0	34	140	36	2	0	212	0	6	114	10	0	0	130	0	25	14	4	6	1	49	0	9	17	13	30	0	69	460
Hourly Total	0	178	506	143	7	0	834	0	15	424	38	2	0	479	0	129	67	27	12	2	235	0	32	73	82	111	6	298	1846
6:00 PM	0	41	114	37	1	0	193	0	4	83	5	0	0	92	0	50	19	11	2	0	82	0	8	18	17	32	0	75	442
6:15 PM	0	36	127	37	3	0	203	0	1	84	8	1	0	94	0	29	10	3	7	0	49	0	5	18	16	30	0	69	415
6:30 PM	0	37	102	39	3	1	181	0	0	61	6	0	2	67	0	24	21	4	2	2	51	0	6	14	13	33	0	66	365
6:45 PM	0	28	98	24	1	0	151	0	0	75	11	0	2	86	0	35	19	6	2	0	62	0	6	16	13	32	0	67	366
Hourly Total	0	142	441	137	8	1	728	0	5	303	30	1	4	339	0	138	69	24	13	2	244	0	25	66	59	127	0	277	1588
Grand Total	0	1053	3248	1005	73	4	5379	0	133	2744	326	13	20	3216	0	915	454	254	102	34	1725	0	280	548	619	942	40	2389	12709
Approach %	0.0	19.6	60.4	18.7	1.4	-	-	0.0	4.1	85.3	10.1	0.4	-	-	0.0	53.0	26.3	14.7	5.9	-	-	0.0	11.7	22.9	25.9	39.4	-	-	-
Total %	0.0	8.3	25.6	7.9	0.6	-	42.3	0.0	1.0	21.6	2.6	0.1	-	25.3	0.0	7.2	3.6	2.0	0.8	-	13.6	0.0	2.2	4.3	4.9	7.4	-	18.8	-
Lights	0	1023	3158	987	73	-	5241	0	130	2669	317	12	-	3128	0	907	450	247	100	-	1704	0	266	538	604	922	-	2330	12403
% Lights	-	97.2	97.2	98.2	100.0	-	97.4	-	97.7	97.3	97.2	92.3	-	97.3	-	99.1	99.1	97.2	98.0	-	98.8	-	95.0	98.2	97.6	97.9	-	97.5	97.6
Buses	0	0	7	1	0	-	8	0	2	9	0	0	-	11	0	0	0	0	0	-	0	0	0	0	1	0	-	1	20
% Buses	-	0.0	0.2	0.1	0.0	-	0.1	-	1.5	0.3	0.0	0.0	-	0.3	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.2	0.0	-	0.0	0.2
Trucks	0	30	83	17	0	-	130	0	1	66	9	1	-	77	0	8	4	7	2	-	21	0	14	10	14	20	-	58	286
% Trucks	-	2.8	2.6	1.7	0.0	-	2.4	-	0.8	2.4	2.8	7.7	-	2.4	-	0.9	0.9	2.8	2.0	-	1.2	-	5.0	1.8	2.3	2.1	-	2.4	2.3
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	-	2	-	-	-	-	-	-	3	-	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	25.0	-	-	-	-	-	-	10.0	-	-	-	-	-	-	8.8	-	-	-	-	-	-	2.5	-	-
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	-	18	-	-	-	-	-	-	31	-	-	-	-	-	-	39	-	-
% Pedestrians	-	-	-	-	-	75.0	-	-	-	-	-	-	90.0	-	-	-	-	-	-	91.2	-	-	-	-	-	-	97.5	-	-



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PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 lklein@imperialtdc.com

Count Name: 1. Hillsdale Avenue & Patterson Street
Site Code: 1
Start Date: 07/10/2021
Page No: 8

Project: Hillsdale & Patterson
Municipality: Hillsdale, Bergen County, NJ
Setup: NR
Location: 41.002642, -74.042934

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Hillsdale Avenue Eastbound							Hillsdale Avenue Westbound							Patterson Street Northbound							Patterson Street Southbound							Int. Total
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	
4:45 PM	0	39	112	32	1	0	184	0	5	112	11	0	0	128	0	32	18	11	0	0	61	0	6	25	47	18	2	96	469
5:00 PM	0	51	109	36	1	0	197	0	1	109	6	2	0	118	0	37	16	4	0	0	57	0	10	22	32	23	0	87	459
5:15 PM	0	44	133	34	0	0	211	0	4	113	13	0	0	130	0	31	22	11	4	1	68	0	7	15	20	27	4	69	478
5:30 PM	0	49	124	37	4	0	214	0	4	88	9	0	0	101	0	36	15	8	2	0	61	0	6	19	17	31	2	73	449
Total	0	183	478	139	6	0	806	0	14	422	39	2	0	477	0	136	71	34	6	1	247	0	29	81	116	99	8	325	1855
Approach %	0.0	22.7	59.3	17.2	0.7	-	-	0.0	2.9	88.5	8.2	0.4	-	-	0.0	55.1	28.7	13.8	2.4	-	-	0.0	8.9	24.9	35.7	30.5	-	-	-
Total %	0.0	9.9	25.8	7.5	0.3	-	43.5	0.0	0.8	22.7	2.1	0.1	-	25.7	0.0	7.3	3.8	1.8	0.3	-	13.3	0.0	1.6	4.4	6.3	5.3	-	17.5	-
PHF	0.000	0.897	0.898	0.939	0.375	-	0.942	0.000	0.700	0.934	0.750	0.250	-	0.917	0.000	0.919	0.807	0.773	0.375	-	0.908	0.000	0.725	0.810	0.617	0.798	-	0.846	0.970
Lights	0	177	469	137	6	-	789	0	13	408	38	2	-	461	0	135	71	34	6	-	246	0	29	78	114	97	-	318	1814
% Lights	-	96.7	98.1	98.6	100.0	-	97.9	-	92.9	96.7	97.4	100.0	-	96.6	-	99.3	100.0	100.0	100.0	-	99.6	-	100.0	96.3	98.3	98.0	-	97.8	97.8
Buses	0	0	1	0	0	-	1	0	1	3	0	0	-	4	0	0	0	0	0	-	0	0	0	0	0	0	-	0	5
% Buses	-	0.0	0.2	0.0	0.0	-	0.1	-	7.1	0.7	0.0	0.0	-	0.8	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.3
Trucks	0	6	8	2	0	-	16	0	0	11	1	0	-	12	0	1	0	0	0	-	1	0	0	3	2	2	-	7	36
% Trucks	-	3.3	1.7	1.4	0.0	-	2.0	-	0.0	2.6	2.6	0.0	-	2.5	-	0.7	0.0	0.0	0.0	-	0.4	-	0.0	3.7	1.7	2.0	-	2.2	1.9
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	12.5	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	1	-	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	87.5	-	-



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PO BOX 4637
Cherry Hill, New Jersey, United States 08034
609-706-6100 lklein@imperialtdc.com

Count Name: 1. Hillsdale Avenue & Patterson Street
Site Code: 1
Start Date: 07/10/2021
Page No: 4

Project: Hillsdale & Patterson
Municipality: Hillsdale, Bergen County, NJ
Setup: NR
Location: 41.002642, -74.042934

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Hillsdale Avenue Eastbound							Hillsdale Avenue Westbound							Patterson Street Northbound							Patterson Street Southbound							Int. Total
	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	U-Turn	Left	Thru	Right	Right on Red	Peds	App. Total	
12:00 PM	0	32	91	26	0	0	149	0	9	57	17	1	1	84	0	44	13	15	9	1	81	0	16	15	38	31	2	100	414
12:15 PM	0	26	107	28	1	0	162	0	9	93	14	0	0	116	0	37	24	10	7	1	78	0	11	26	29	30	1	96	452
12:30 PM	0	33	92	43	3	0	171	0	3	88	14	0	3	105	0	32	17	17	5	0	71	0	22	22	20	37	5	101	448
12:45 PM	0	33	111	45	5	0	194	0	10	78	7	2	3	97	0	44	24	9	4	0	81	0	13	24	30	31	2	98	470
Total	0	124	401	142	9	0	676	0	31	316	52	3	7	402	0	157	78	51	25	2	311	0	62	87	117	129	10	395	1784
Approach %	0.0	18.3	59.3	21.0	1.3	-	-	0.0	7.7	78.6	12.9	0.7	-	-	0.0	50.5	25.1	16.4	8.0	-	-	0.0	15.7	22.0	29.6	32.7	-	-	-
Total %	0.0	7.0	22.5	8.0	0.5	-	37.9	0.0	1.7	17.7	2.9	0.2	-	22.5	0.0	8.8	4.4	2.9	1.4	-	17.4	0.0	3.5	4.9	6.6	7.2	-	22.1	-
PHF	0.000	0.939	0.903	0.789	0.450	-	0.871	0.000	0.775	0.849	0.765	0.375	-	0.866	0.000	0.892	0.813	0.750	0.694	-	0.960	0.000	0.705	0.837	0.770	0.872	-	0.978	0.949
Lights	0	123	392	140	9	-	664	0	31	307	49	3	-	390	0	157	78	49	25	-	309	0	59	87	116	129	-	391	1754
% Lights	-	99.2	97.8	98.6	100.0	-	98.2	-	100.0	97.2	94.2	100.0	-	97.0	-	100.0	100.0	96.1	100.0	-	99.4	-	95.2	100.0	99.1	100.0	-	99.0	98.3
Buses	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Trucks	0	1	9	2	0	-	12	0	0	9	3	0	-	12	0	0	0	2	0	-	2	0	3	0	1	0	-	4	30
% Trucks	-	0.8	2.2	1.4	0.0	-	1.8	-	0.0	2.8	5.8	0.0	-	3.0	-	0.0	0.0	3.9	0.0	-	0.6	-	4.8	0.0	0.9	0.0	-	1.0	1.7
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	-	7	-	-	-	-	-	-	2	-	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-	-	-	-	-	100.0	-	-



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Count Name: 2. Patterson Avenue/Washington Avenue & Glendale Drive
 Site Code: 2
 Start Date: 07/10/2021
 Page No: 1

Project: Hillsdale & Patterson
 Municipality: Hillsdale, Bergen County, NJ
 Setup: NR
 Location: 41.001794, -74.042431

Turning Movement Data

Start Time	Glendale Drive Eastbound					Washington Avenue Northbound					Patterson Street Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	
11:00 AM	0	11	6	2	17	0	10	40	2	50	0	67	8	0	75	142
11:15 AM	1	8	6	0	15	0	4	44	1	48	0	65	11	0	76	139
11:30 AM	0	13	16	0	29	0	18	57	1	75	0	60	7	0	67	171
11:45 AM	0	4	7	1	11	0	10	64	1	74	0	72	5	0	77	162
Hourly Total	1	36	35	3	72	0	42	205	5	247	0	264	31	0	295	614
12:00 PM	0	11	14	0	25	0	17	65	0	82	0	60	7	1	67	174
12:15 PM	0	6	15	0	21	0	12	64	0	76	0	62	9	0	71	168
12:30 PM	0	11	17	0	28	0	15	60	3	75	0	63	11	0	74	177
12:45 PM	0	13	11	0	24	0	19	64	4	83	0	92	5	0	97	204
Hourly Total	0	41	57	0	98	0	63	253	7	316	0	277	32	1	309	723
1:00 PM	0	6	5	2	11	0	19	71	0	90	0	63	2	0	65	166
1:15 PM	0	6	9	2	15	0	11	57	0	68	0	57	2	0	59	142
1:30 PM	0	6	15	0	21	0	12	64	0	76	0	65	4	1	69	166
1:45 PM	0	7	8	0	15	0	16	54	0	70	0	73	3	3	76	161
Hourly Total	0	25	37	4	62	0	58	246	0	304	0	258	11	4	269	635
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	0	2	1	0	3	0	3	13	0	16	0	17	0	0	17	36
7:15 AM	0	3	4	0	7	0	7	13	2	20	0	24	3	0	27	54
7:30 AM	0	2	9	1	11	0	1	9	3	10	0	21	4	0	25	46
7:45 AM	0	3	6	1	9	0	8	14	0	22	0	37	0	0	37	68
Hourly Total	0	10	20	2	30	0	19	49	5	68	0	99	7	0	106	204
8:00 AM	0	5	3	0	8	0	4	17	1	21	0	41	4	0	45	74
8:15 AM	0	4	7	0	11	0	3	18	0	21	0	36	6	0	42	74
8:30 AM	0	11	8	1	19	0	4	25	1	29	0	46	4	0	50	98
8:45 AM	0	4	12	1	16	0	3	27	1	30	0	45	5	0	50	96
Hourly Total	0	24	30	2	54	0	14	87	3	101	0	168	19	0	187	342
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	4	15	0	19	0	11	48	0	59	0	73	12	0	85	163
4:15 PM	0	4	18	1	22	0	15	52	0	67	0	63	5	0	68	157
4:30 PM	0	6	16	3	22	0	14	39	0	53	0	61	5	0	66	141
4:45 PM	0	4	10	1	14	0	16	48	0	64	0	62	4	0	66	144
Hourly Total	0	18	59	5	77	0	56	187	0	243	0	259	26	0	285	605
5:00 PM	0	5	8	1	13	0	18	59	0	77	0	58	12	4	70	160
5:15 PM	0	7	12	0	19	0	14	52	0	66	0	55	6	0	61	146
5:30 PM	0	5	17	0	22	0	18	56	0	74	0	76	2	0	78	174
5:45 PM	0	12	15	1	27	0	16	32	0	48	0	67	3	0	70	145

Hourly Total	0	29	52	2	81	0	66	199	0	265	0	256	23	4	279	625
6:00 PM	0	3	12	3	15	0	20	72	2	92	0	57	5	1	62	169
6:15 PM	0	3	8	2	11	0	21	43	0	64	0	59	5	0	64	139
6:30 PM	0	10	12	1	22	0	20	49	0	69	0	53	5	0	58	149
6:45 PM	0	6	8	1	14	0	15	48	0	63	0	46	3	2	49	126
Hourly Total	0	22	40	7	62	0	76	212	2	288	0	215	18	3	233	583
Grand Total	1	205	330	25	536	0	394	1438	22	1832	0	1796	167	12	1963	4331
Approach %	0.2	38.2	61.6	-	-	0.0	21.5	78.5	-	-	0.0	91.5	8.5	-	-	-
Total %	0.0	4.7	7.6	-	12.4	0.0	9.1	33.2	-	42.3	0.0	41.5	3.9	-	45.3	-
Lights	1	201	329	-	531	0	393	1415	-	1808	0	1758	163	-	1921	4260
% Lights	100.0	98.0	99.7	-	99.1	-	99.7	98.4	-	98.7	-	97.9	97.6	-	97.9	98.4
Buses	0	0	1	-	1	0	0	0	-	0	0	3	0	-	3	4
% Buses	0.0	0.0	0.3	-	0.2	-	0.0	0.0	-	0.0	-	0.2	0.0	-	0.2	0.1
Trucks	0	4	0	-	4	0	1	23	-	24	0	35	4	-	39	67
% Trucks	0.0	2.0	0.0	-	0.7	-	0.3	1.6	-	1.3	-	1.9	2.4	-	2.0	1.5
Bicycles on Crosswalk	-	-	-	2	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	8.0	-	-	-	-	0.0	-	-	-	-	8.3	-	-
Pedestrians	-	-	-	23	-	-	-	-	22	-	-	-	-	11	-	-
% Pedestrians	-	-	-	92.0	-	-	-	-	100.0	-	-	-	-	91.7	-	-

Stonefield Engineering & Design, LLC

90 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of Glendale Avenue
and Washington Avenue/Patterson Street
Hillsdale, Bergen County, NJ
Tuesday, July 13, 2021

File Name : RUT-210185
Site Code : 00210185
Start Date : 7/13/2021
Page No : 1

Groups Printed- Passenger - HV - Bus/SB

Start Time	Glendale Avenue Eastbound				Westbound				Washington Avenue Northbound				Patterson Street Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:45 PM	4	0	10	14	0	0	0	0	16	48	0	64	0	62	4	66	144
Total	4	0	10	14	0	0	0	0	16	48	0	64	0	62	4	66	144
05:00 PM	5	0	8	13	0	0	0	0	18	59	0	77	0	58	12	70	160
05:15 PM	7	0	12	19	0	0	0	0	14	52	0	66	0	55	6	61	146
05:30 PM	5	0	17	22	0	0	0	0	18	56	0	74	0	76	2	78	174
Grand Total	21	0	47	68	0	0	0	0	66	215	0	281	0	251	24	275	624
Apprch %	30.9	0	69.1		0	0	0		23.5	76.5	0		0	91.3	8.7		
Total %	3.4	0	7.5	10.9	0	0	0	0	10.6	34.5	0	45	0	40.2	3.8	44.1	
Passenger	20	0	47	67	0	0	0	0	66	214	0	280	0	246	24	270	617
% Passenger	95.2	0	100	98.5	0	0	0	0	100	99.5	0	99.6	0	98	100	98.2	98.9
HV	1	0	0	1	0	0	0	0	0	1	0	1	0	4	0	4	6
% HV	4.8	0	0	1.5	0	0	0	0	0	0.5	0	0.4	0	1.6	0	1.5	1
Bus/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% Bus/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0.4	0.2

Start Time	Glendale Avenue Eastbound				Westbound				Washington Avenue Northbound				Patterson Street Southbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

04:45 PM	4	0	10	14	0	0	0	0	16	48	0	64	0	62	4	66	144
05:00 PM	5	0	8	13	0	0	0	0	18	59	0	77	0	58	12	70	160
05:15 PM	7	0	12	19	0	0	0	0	14	52	0	66	0	55	6	61	146
05:30 PM	5	0	17	22	0	0	0	0	18	56	0	74	0	76	2	78	174
Total Volume	21	0	47	68	0	0	0	0	66	215	0	281	0	251	24	275	624
% App. Total	30.9	0	69.1		0	0	0		23.5	76.5	0		0	91.3	8.7		
PHF	.750	.000	.691	.773	.000	.000	.000	.000	.917	.911	.000	.912	.000	.826	.500	.881	.897
Passenger	20	0	47	67	0	0	0	0	66	214	0	280	0	246	24	270	617
% Passenger	95.2	0	100	98.5	0	0	0	0	100	99.5	0	99.6	0	98.0	100	98.2	98.9
HV	1	0	0	1	0	0	0	0	0	1	0	1	0	4	0	4	6
% HV	4.8	0	0	1.5	0	0	0	0	0	0.5	0	0.4	0	1.6	0	1.5	1.0
Bus/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% Bus/SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0.4	0.2



TRAFFIC & DATA COLLECTION

Imperial Traffic & Data Collection

www.imperialtdc.com

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Cherry Hill, New Jersey, United States 08034

609-706-6100 lklein@imperialtdc.com

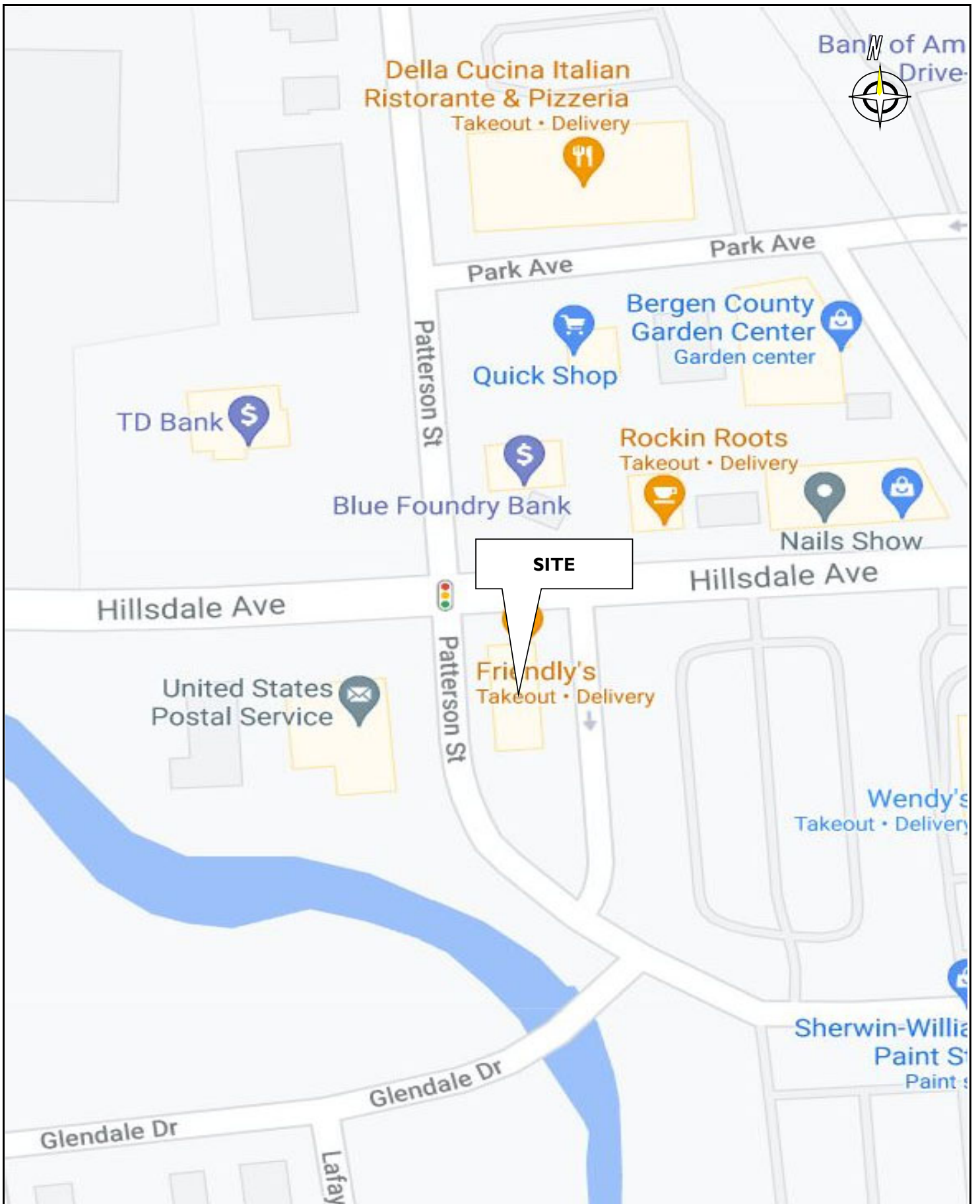
Project: Hillsdale & Patterson
 Municipality: Hillsdale, Bergen County, NJ
 Setup: NR
 Location: 41.001794, -74.042431

Count Name: 2. Patterson Avenue/Washington
 Avenue & Glendale Drive
 Site Code: 2
 Start Date: 07/10/2021
 Page No: 4

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Glendale Drive Eastbound					Washington Avenue Northbound					Patterson Street Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	
12:00 PM	0	11	14	0	25	0	17	65	0	82	0	60	7	1	67	174
12:15 PM	0	6	15	0	21	0	12	64	0	76	0	62	9	0	71	168
12:30 PM	0	11	17	0	28	0	15	60	3	75	0	63	11	0	74	177
12:45 PM	0	13	11	0	24	0	19	64	4	83	0	92	5	0	97	204
Total	0	41	57	0	98	0	63	253	7	316	0	277	32	1	309	723
Approach %	0.0	41.8	58.2	-	-	0.0	19.9	80.1	-	-	0.0	89.6	10.4	-	-	-
Total %	0.0	5.7	7.9	-	13.6	0.0	8.7	35.0	-	43.7	0.0	38.3	4.4	-	42.7	-
PHF	0.000	0.788	0.838	-	0.875	0.000	0.829	0.973	-	0.952	0.000	0.753	0.727	-	0.796	0.886
Lights	0	40	57	-	97	0	63	251	-	314	0	273	32	-	305	716
% Lights	-	97.6	100.0	-	99.0	-	100.0	99.2	-	99.4	-	98.6	100.0	-	98.7	99.0
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Trucks	0	1	0	-	1	0	0	2	-	2	0	4	0	-	4	7
% Trucks	-	2.4	0.0	-	1.0	-	0.0	0.8	-	0.6	-	1.4	0.0	-	1.3	1.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	7	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

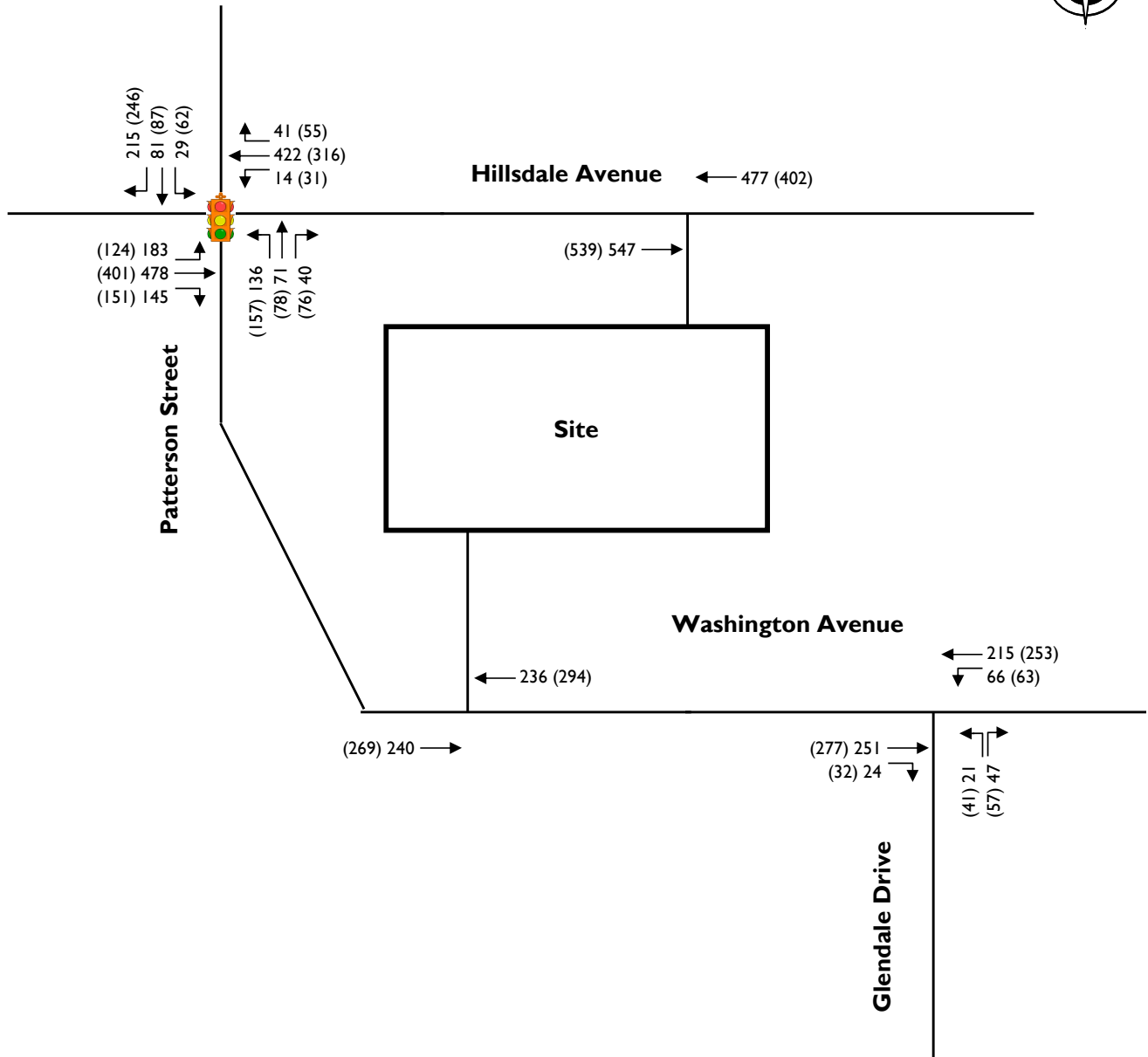
FIGURES



STONEFIELD

Proposed Chipotle with Pick-Up Window
 441 Hillsdale Avenue
 Hillsdale, Bergen County, New Jersey
 Traffic Impact Study

FIGURE I
 Site Location Map



LEGEND

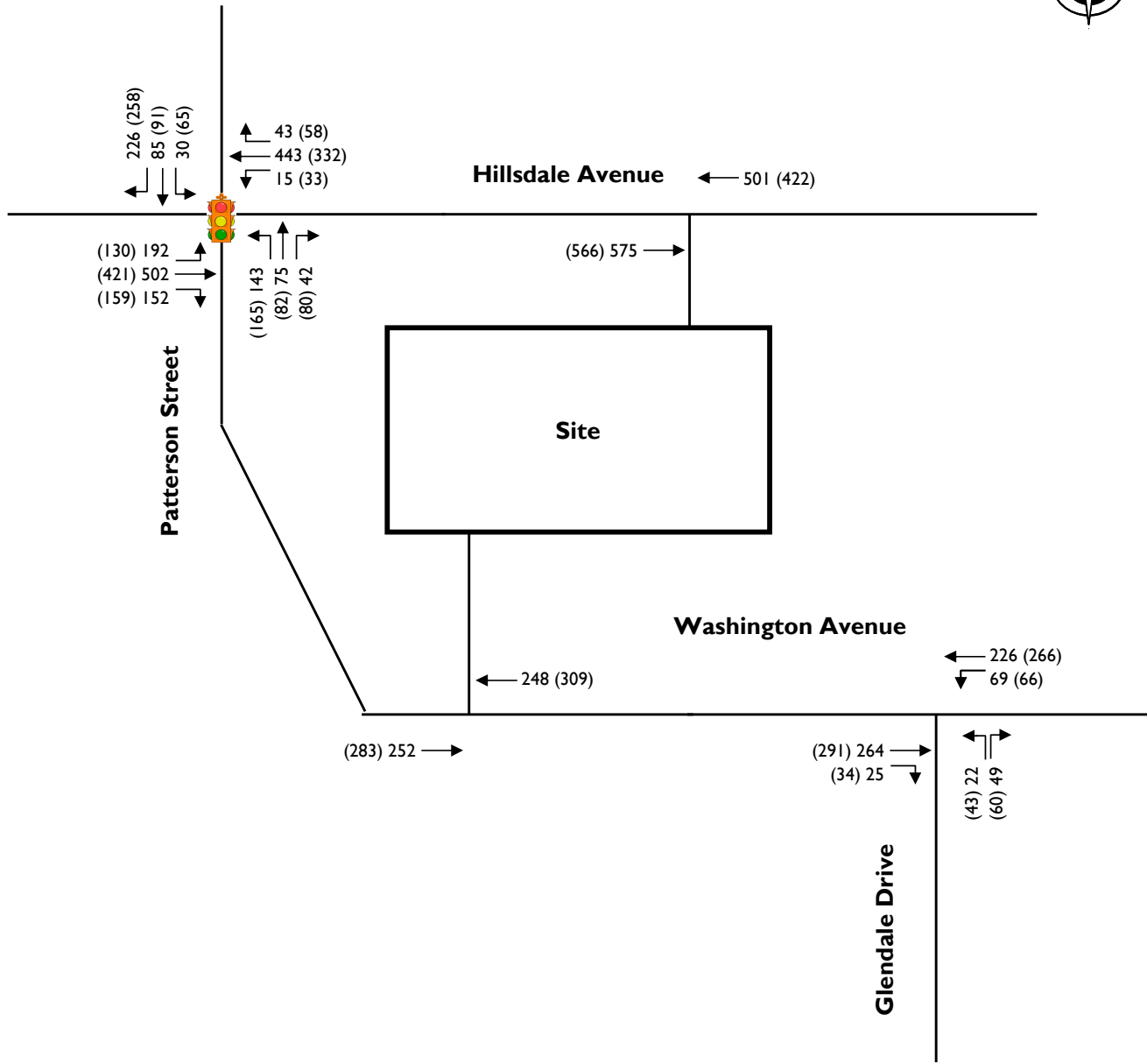
- Existing Roadway
- - - Proposed Driveway
- · - Existing Private Driveway
- ← PM (SAT) Peak Hour Volumes
- Signalized Intersection

NOT TO SCALE

STONEFIELD

Proposed Chipotle with Pick-Up Window
441 Hillsdale Avenue
Hillsdale, Bergen County, New Jersey
Traffic Impact Study

FIGURE 2
2021 Existing Traffic
Volumes



LEGEND

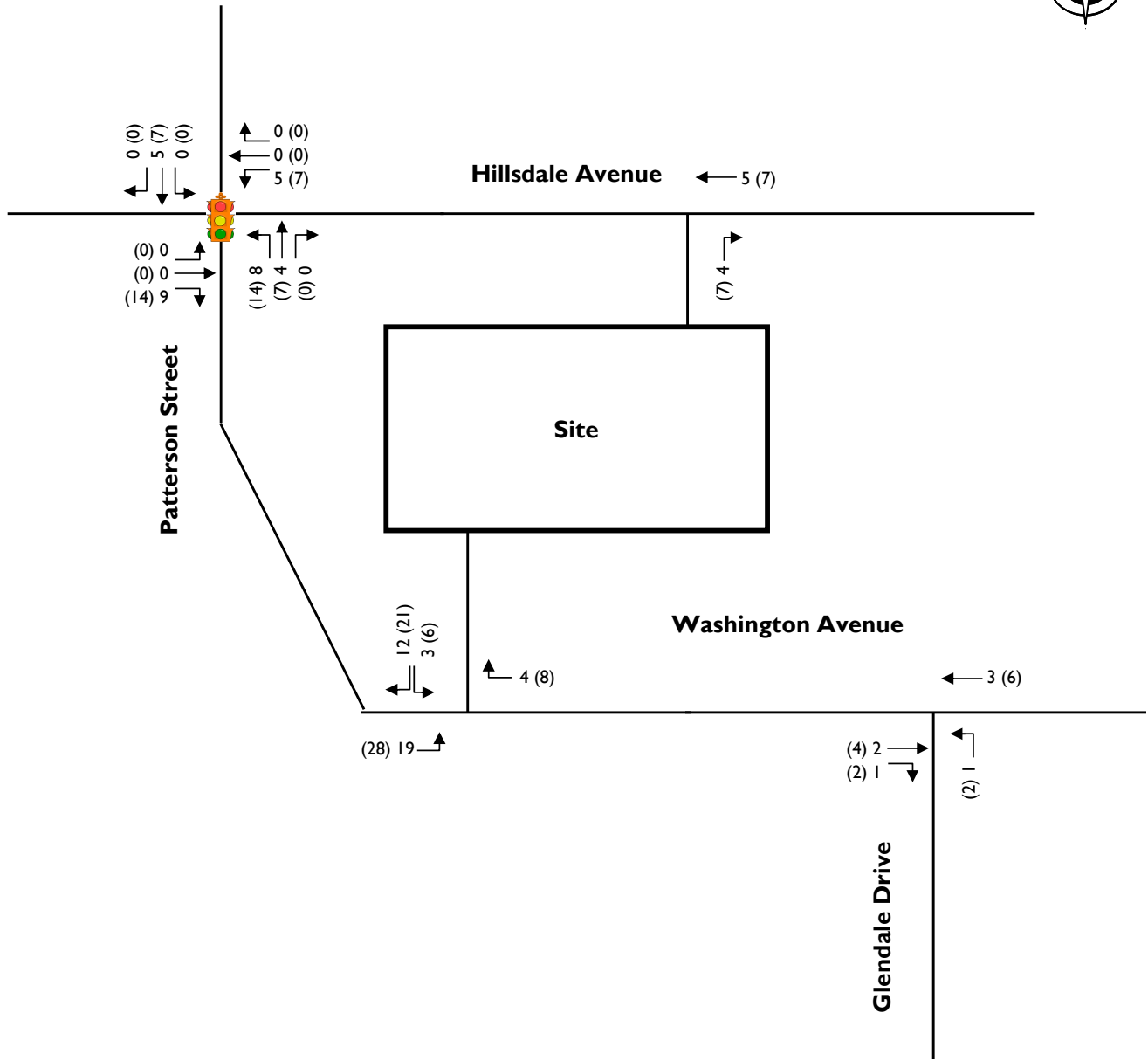
- Existing Roadway
- - - Proposed Driveway
- . . Existing Private Driveway
- ← PM (SAT) Peak Hour Volumes
- Signalized Intersection

NOT TO SCALE

STONEFIELD

Proposed Chipotle with Pick-Up Window
441 Hillsdale Avenue
Hillsdale, Bergen County, New Jersey
Traffic Impact Study

FIGURE 3
2023 No-Build Traffic
Volumes



LEGEND

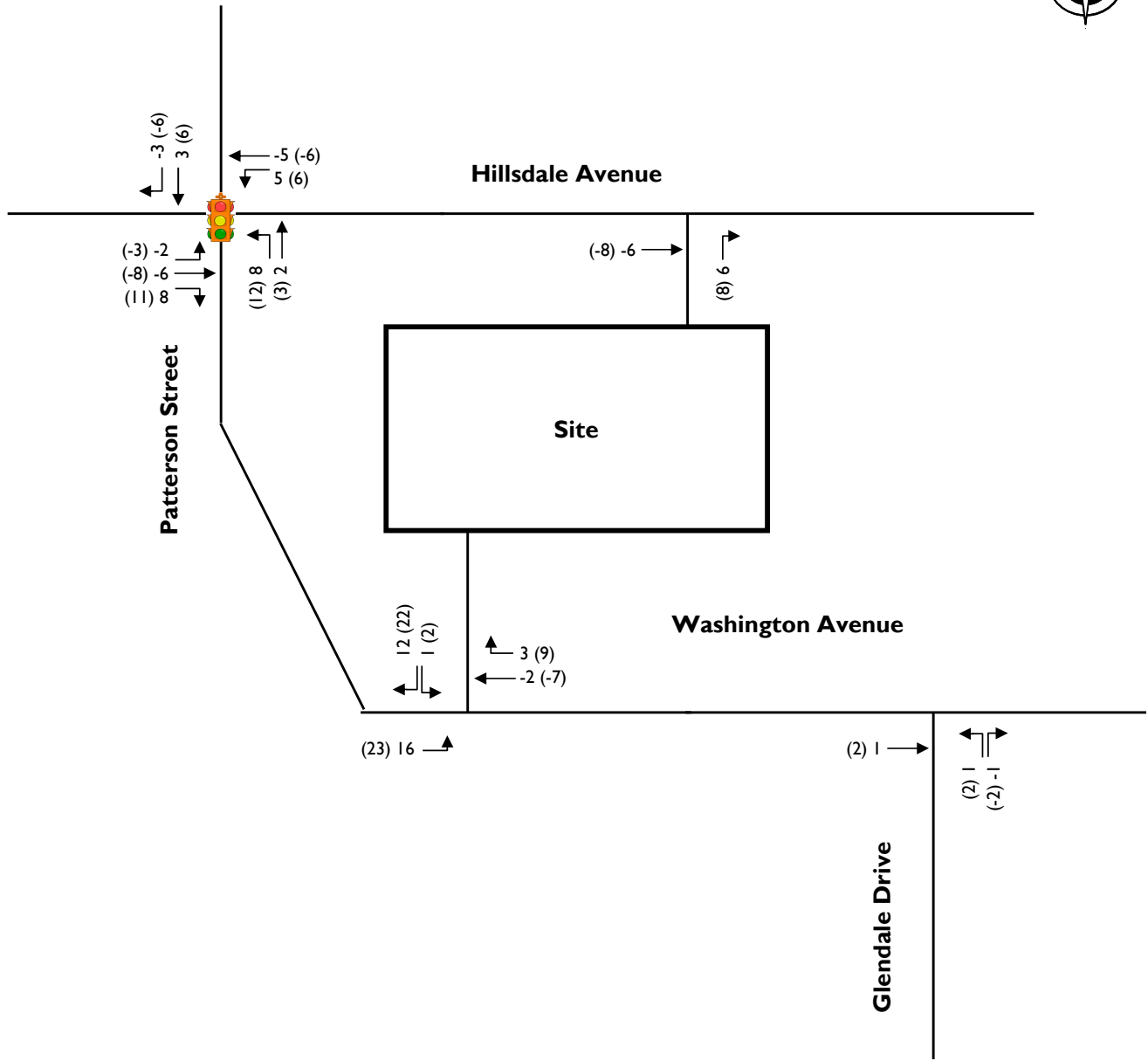
- Existing Roadway
- - - Proposed Driveway
- · - Existing Private Driveway
- ← PM (SAT) Peak Hour Volumes
- Signalized Intersection

NOT TO SCALE


STONEFIELD

Proposed Chipotle with Pick-Up Window
441 Hillsdale Avenue
Hillsdale, Bergen County, New Jersey
Traffic Impact Study

FIGURE 4
"New" Site-Generated
Traffic Volumes



LEGEND

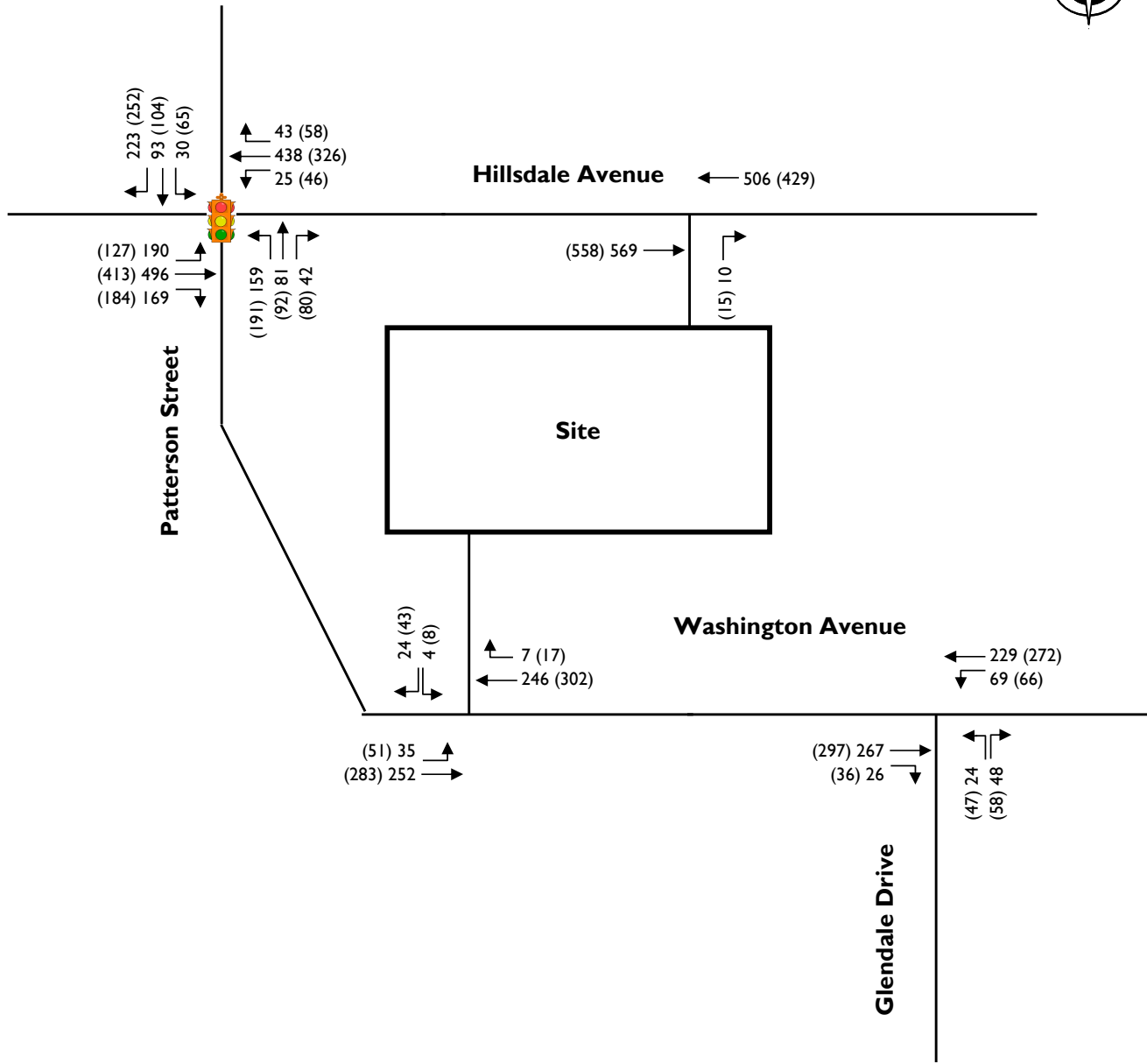
- Existing Roadway
- - - Proposed Driveway
- · - Existing Private Driveway
- ← PM (SAT) Peak Hour Volumes
-  Signalized Intersection

NOT TO SCALE


STONEFIELD

Proposed Chipotle with Pick-Up Window
441 Hillsdale Avenue
Hillsdale, Bergen County, New Jersey
Traffic Impact Study

FIGURE 5
"Pass-By" Site-Generated
Traffic Volumes



LEGEND

- Existing Roadway
- - - Proposed Driveway
- · - Existing Private Driveway
- ← PM (SAT) Peak Hour Volumes
-  Signalized Intersection

NOT TO SCALE

STONEFIELD

Proposed Chipotle with Pick-Up Window
441 Hillsdale Avenue
Hillsdale, Bergen County, New Jersey
Traffic Impact Study

FIGURE 6
2023 Build Traffic Volumes

CAPACITY ANALYSIS DETAIL SHEETS

HCM 6th Signalized Intersection Summary
1: Patterson Street & Hillsdale Avenue

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)	183	478	145	14	422	41	136	71	40	29	81	215
Future Volume (veh/h)	183	478	145	14	422	41	136	71	40	29	81	215
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	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	1856	1870	1885	1796	1856	1856	1885	1900	1900	1900	1841	1870
Adj Flow Rate, veh/h	189	493	149	14	435	42	140	73	41	30	84	222
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	2	1	7	3	3	1	0	0	0	4	2
Cap, veh/h	650	925	279	68	1772	168	251	224	126	263	361	311
Arrive On Green	0.06	0.67	0.67	0.57	0.57	0.57	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1767	1379	417	46	3089	294	1082	1143	642	1299	1841	1585
Grp Volume(v), veh/h	189	0	642	257	0	234	140	0	114	30	84	222
Grp Sat Flow(s),veh/h/ln	1767	0	1795	1793	0	1636	1082	0	1784	1299	1841	1585
Q Serve(g_s), s	3.7	0.0	16.5	0.0	0.0	6.4	11.3	0.0	4.9	1.8	3.5	11.8
Cycle Q Clear(g_c), s	3.7	0.0	16.5	6.2	0.0	6.4	14.7	0.0	4.9	6.8	3.5	11.8
Prop In Lane	1.00		0.23	0.05		0.18	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	650	0	1204	1070	0	938	251	0	350	263	361	311
V/C Ratio(X)	0.29	0.00	0.53	0.24	0.00	0.25	0.56	0.00	0.33	0.11	0.23	0.71
Avail Cap(c_a), veh/h	694	0	1204	1070	0	938	375	0	555	413	573	493
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.3	0.0	7.6	9.5	0.0	9.5	36.7	0.0	31.1	34.0	30.5	33.8
Incr Delay (d2), s/veh	0.2	0.0	1.7	0.5	0.0	0.6	1.9	0.0	0.5	0.2	0.3	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	5.7	2.4	0.0	2.2	3.1	0.0	2.2	0.6	1.6	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	0.0	9.3	10.0	0.0	10.2	38.6	0.0	31.6	34.2	30.8	36.9
LnGrp LOS	A	A	A	B	A	B	D	A	C	C	C	D
Approach Vol, veh/h		831			491			254				336
Approach Delay, s/veh		8.7			10.1			35.5				35.1
Approach LOS		A			B			D				D
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		66.4		23.6	8.7	57.6		23.6				
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0	8.0	39.0		28.0				
Max Q Clear Time (g_c+I1), s		18.5		16.7	5.7	8.4		13.8				
Green Ext Time (p_c), s		4.9		0.9	0.1	3.1		1.1				

Intersection Summary

HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

HCM 6th TWSC
3: Glendale Drive & Patterson Street/Washington Avenue

2021 Existing Condition
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	251	24	66	215	21	47
Future Vol, veh/h	251	24	66	215	21	47
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	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	1	5	0
Mvmt Flow	279	27	73	239	23	52

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	306	0	678 293
Stage 1	-	-	-	-	293 -
Stage 2	-	-	-	-	385 -
Critical Hdwy	-	-	4.1	-	6.45 6.2
Critical Hdwy Stg 1	-	-	-	-	5.45 -
Critical Hdwy Stg 2	-	-	-	-	5.45 -
Follow-up Hdwy	-	-	2.2	-	3.545 3.3
Pot Cap-1 Maneuver	-	-	1266	-	413 751
Stage 1	-	-	-	-	750 -
Stage 2	-	-	-	-	681 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1266	-	386 751
Mov Cap-2 Maneuver	-	-	-	-	386 -
Stage 1	-	-	-	-	750 -
Stage 2	-	-	-	-	636 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	581	-	-	1266	-
HCM Lane V/C Ratio	0.13	-	-	0.058	-
HCM Control Delay (s)	12.1	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.2	-

HCM 6th Signalized Intersection Summary
1: Patterson Street & Hillsdale Avenue

2021 Existing Condition
Saturday Midday Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	401	151	31	316	55	157	78	76	62	87	246
Future Volume (veh/h)	124	401	151	31	316	55	157	78	76	62	87	246
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	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	1885	1870	1885	1900	1856	1811	1900	1900	1900	1826	1900	1885
Adj Flow Rate, veh/h	131	422	159	33	333	58	165	82	80	65	92	259
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, %	1	2	1	0	3	6	0	0	0	5	0	1
Cap, veh/h	664	829	312	149	1438	249	276	200	195	256	430	362
Arrive On Green	0.05	0.64	0.64	0.55	0.55	0.55	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1795	1295	488	186	2597	449	1046	883	862	1195	1900	1598
Grp Volume(v), veh/h	131	0	581	216	0	208	165	0	162	65	92	259
Grp Sat Flow(s),veh/h/ln	1795	0	1783	1625	0	1608	1046	0	1745	1195	1900	1598
Q Serve(g_s), s	2.6	0.0	15.7	0.0	0.0	6.0	13.7	0.0	7.1	4.4	3.5	13.5
Cycle Q Clear(g_c), s	2.6	0.0	15.7	5.3	0.0	6.0	17.2	0.0	7.1	11.5	3.5	13.5
Prop In Lane	1.00		0.27	0.15		0.28	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	664	0	1141	945	0	890	276	0	395	256	430	362
V/C Ratio(X)	0.20	0.00	0.51	0.23	0.00	0.23	0.60	0.00	0.41	0.25	0.21	0.72
Avail Cap(c_a), veh/h	727	0	1141	945	0	890	364	0	543	357	591	497
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.1	0.0	8.6	10.2	0.0	10.3	35.3	0.0	29.7	34.6	28.3	32.1
Incr Delay (d2), s/veh	0.1	0.0	1.6	0.6	0.0	0.6	2.1	0.0	0.7	0.5	0.2	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	5.6	2.1	0.0	2.1	3.6	0.0	3.1	1.3	1.6	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	0.0	10.3	10.7	0.0	10.9	37.4	0.0	30.4	35.1	28.6	35.2
LnGrp LOS	A	A	B	B	A	B	D	A	C	D	C	D
Approach Vol, veh/h		712			424			327			416	
Approach Delay, s/veh		9.7			10.8			33.9			33.7	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		63.6		26.4	7.8	55.8		26.4				
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0	8.0	39.0		28.0				
Max Q Clear Time (g_c+I1), s		17.7		19.2	4.6	8.0		15.5				
Green Ext Time (p_c), s		4.3		1.1	0.1	2.7		1.4				
Intersection Summary												
HCM 6th Ctrl Delay				19.5								
HCM 6th LOS				B								

HCM 6th TWSC
 3: Glendale Drive & Patterson Street/Washington Avenue

2021 Existing Condition
 Saturday Midday Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	277	32	63	253	41	57
Future Vol, veh/h	277	32	63	253	41	57
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	89	89	89	89	89	89
Heavy Vehicles, %	1	0	0	1	2	0
Mvmt Flow	311	36	71	284	46	64

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	347	0	755
Stage 1	-	-	-	-	329
Stage 2	-	-	-	-	426
Critical Hdwy	-	-	4.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.2	-	3.518
Pot Cap-1 Maneuver	-	-	1223	-	376
Stage 1	-	-	-	-	729
Stage 2	-	-	-	-	659
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1223	-	350
Mov Cap-2 Maneuver	-	-	-	-	350
Stage 1	-	-	-	-	729
Stage 2	-	-	-	-	614

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	498	-	-	1223	-
HCM Lane V/C Ratio	0.221	-	-	0.058	-
HCM Control Delay (s)	14.3	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-

HCM 6th Signalized Intersection Summary
1: Patterson Street & Hillsdale Avenue

2023 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)	192	502	152	15	443	43	143	75	42	30	85	226
Future Volume (veh/h)	192	502	152	15	443	43	143	75	42	30	85	226
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	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	1856	1870	1885	1796	1856	1856	1885	1900	1900	1900	1841	1870
Adj Flow Rate, veh/h	198	518	157	15	457	44	147	77	43	31	88	233
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	2	1	7	3	3	1	0	0	0	4	2
Cap, veh/h	628	910	276	68	1729	164	257	236	132	272	379	326
Arrive On Green	0.07	0.66	0.66	0.56	0.56	0.56	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1767	1378	418	46	3085	292	1067	1145	640	1292	1841	1585
Grp Volume(v), veh/h	198	0	675	270	0	246	147	0	120	31	88	233
Grp Sat Flow(s),veh/h/ln	1767	0	1795	1788	0	1636	1067	0	1785	1292	1841	1585
Q Serve(g_s), s	4.0	0.0	18.4	0.0	0.0	7.0	12.0	0.0	5.2	1.9	3.6	12.3
Cycle Q Clear(g_c), s	4.0	0.0	18.4	6.7	0.0	7.0	15.6	0.0	5.2	7.0	3.6	12.3
Prop In Lane	1.00		0.23	0.06		0.18	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	628	0	1186	1044	0	917	257	0	367	272	379	326
V/C Ratio(X)	0.32	0.00	0.57	0.26	0.00	0.27	0.57	0.00	0.33	0.11	0.23	0.71
Avail Cap(c_a), veh/h	667	0	1186	1044	0	917	369	0	555	408	573	493
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	0.0	8.3	10.2	0.0	10.2	36.3	0.0	30.4	33.4	29.8	33.3
Incr Delay (d2), s/veh	0.3	0.0	2.0	0.6	0.0	0.7	2.0	0.0	0.5	0.2	0.3	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	6.5	2.7	0.0	2.5	3.2	0.0	2.3	0.6	1.6	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	0.0	10.3	10.8	0.0	11.0	38.3	0.0	30.9	33.6	30.1	36.2
LnGrp LOS	A	A	B	B	A	B	D	A	C	C	C	D
Approach Vol, veh/h		873			516			267			352	
Approach Delay, s/veh		9.6			10.9			35.0			34.4	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		65.5		24.5	9.0	56.4		24.5				
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0	8.0	39.0		28.0				
Max Q Clear Time (g_c+I1), s		20.4		17.6	6.0	9.0		14.3				
Green Ext Time (p_c), s		5.2		0.9	0.1	3.3		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				17.6								
HCM 6th LOS				B								

HCM 6th TWSC
 3: Glendale Drive & Patterson Street/Washington Avenue

2023 No Build Condition
 Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	264	25	69	226	22	49
Future Vol, veh/h	264	25	69	226	22	49
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	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	1	5	0
Mvmt Flow	293	28	77	251	24	54

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	321	0	712
Stage 1	-	-	-	-	307
Stage 2	-	-	-	-	405
Critical Hdwy	-	-	4.1	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	-	-	2.2	-	3.545
Pot Cap-1 Maneuver	-	-	1250	-	395
Stage 1	-	-	-	-	739
Stage 2	-	-	-	-	667
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1250	-	367
Mov Cap-2 Maneuver	-	-	-	-	367
Stage 1	-	-	-	-	739
Stage 2	-	-	-	-	619

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	562	-	-	1250	-
HCM Lane V/C Ratio	0.14	-	-	0.061	-
HCM Control Delay (s)	12.4	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

HCM 6th Signalized Intersection Summary
1: Patterson Street & Hillsdale Avenue

2023 No Build Condition
Saturday Midday Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	421	159	33	332	58	165	82	80	65	91	258
Future Volume (veh/h)	130	421	159	33	332	58	165	82	80	65	91	258
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	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	1885	1870	1885	1900	1856	1811	1900	1900	1900	1826	1900	1885
Adj Flow Rate, veh/h	137	443	167	35	349	61	174	86	84	68	96	272
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, %	1	2	1	0	3	6	0	0	0	5	0	1
Cap, veh/h	638	814	307	147	1400	243	284	210	205	265	453	381
Arrive On Green	0.05	0.63	0.63	0.54	0.54	0.54	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1795	1295	488	186	2586	449	1030	883	862	1186	1900	1598
Grp Volume(v), veh/h	137	0	610	226	0	219	174	0	170	68	96	272
Grp Sat Flow(s),veh/h/ln	1795	0	1783	1613	0	1608	1030	0	1745	1186	1900	1598
Q Serve(g_s), s	2.8	0.0	17.4	0.0	0.0	6.5	14.7	0.0	7.4	4.6	3.6	14.1
Cycle Q Clear(g_c), s	2.8	0.0	17.4	5.7	0.0	6.5	18.3	0.0	7.4	12.0	3.6	14.1
Prop In Lane	1.00		0.27	0.15		0.28	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	638	0	1120	919	0	870	284	0	416	265	453	381
V/C Ratio(X)	0.21	0.00	0.54	0.25	0.00	0.25	0.61	0.00	0.41	0.26	0.21	0.71
Avail Cap(c_a), veh/h	701	0	1120	919	0	870	359	0	543	352	591	497
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.6	0.0	9.4	10.8	0.0	11.0	34.9	0.0	28.9	34.0	27.5	31.5
Incr Delay (d2), s/veh	0.2	0.0	1.9	0.6	0.0	0.7	2.2	0.0	0.6	0.5	0.2	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	6.3	2.3	0.0	2.3	3.8	0.0	3.2	1.4	1.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	0.0	11.3	11.4	0.0	11.6	37.0	0.0	29.6	34.5	27.7	34.8
LnGrp LOS	A	A	B	B	A	B	D	A	C	C	C	C
Approach Vol, veh/h		747			445			344				436
Approach Delay, s/veh		10.7			11.5			33.3				33.2
Approach LOS		B			B			C				C
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		62.6		27.4	7.8	54.7		27.4				
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0	8.0	39.0		28.0				
Max Q Clear Time (g_c+I1), s		19.4		20.3	4.8	8.5		16.1				
Green Ext Time (p_c), s		4.5		1.1	0.1	2.9		1.4				
Intersection Summary												
HCM 6th Ctrl Delay				19.8								
HCM 6th LOS				B								

HCM 6th TWSC
 3: Glendale Drive & Patterson Street/Washington Avenue

2023 No Build Condition
 Saturday Midday Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	291	34	66	266	43	60
Future Vol, veh/h	291	34	66	266	43	60
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	89	89	89	89	89	89
Heavy Vehicles, %	1	0	0	1	2	0
Mvmt Flow	327	38	74	299	48	67






















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	365	0	793 346
Stage 1	-	-	-	-	346 -
Stage 2	-	-	-	-	447 -
Critical Hdwy	-	-	4.1	-	6.42 6.2
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.2	-	3.518 3.3
Pot Cap-1 Maneuver	-	-	1205	-	358 702
Stage 1	-	-	-	-	716 -
Stage 2	-	-	-	-	644 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1205	-	332 702
Mov Cap-2 Maneuver	-	-	-	-	332 -
Stage 1	-	-	-	-	716 -
Stage 2	-	-	-	-	596 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	479	-	-	1205	-
HCM Lane V/C Ratio	0.242	-	-	0.062	-
HCM Control Delay (s)	14.9	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.2	-

HCM 6th Signalized Intersection Summary
1: Patterson Street & Hillsdale Avenue

2023 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)	190	496	169	25	438	43	159	81	42	30	93	223
Future Volume (veh/h)	190	496	169	25	438	43	159	81	42	30	93	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	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	1856	1870	1885	1796	1856	1856	1885	1900	1900	1900	1841	1870
Adj Flow Rate, veh/h	196	511	174	26	452	44	164	84	43	31	96	230
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	2	1	7	3	3	1	0	0	0	4	2
Cap, veh/h	609	857	292	99	1596	153	273	266	136	292	414	356
Arrive On Green	0.07	0.64	0.64	0.54	0.54	0.54	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1767	1334	454	102	2957	284	1062	1185	606	1284	1841	1585
Grp Volume(v), veh/h	196	0	685	268	0	254	164	0	127	31	96	230
Grp Sat Flow(s),veh/h/ln	1767	0	1789	1705	0	1637	1062	0	1791	1284	1841	1585
Q Serve(g_s), s	4.1	0.0	20.0	0.0	0.0	7.6	13.4	0.0	5.3	1.9	3.8	11.8
Cycle Q Clear(g_c), s	4.1	0.0	20.0	7.0	0.0	7.6	17.3	0.0	5.3	7.2	3.8	11.8
Prop In Lane	1.00		0.25	0.10		0.17	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	609	0	1148	964	0	884	273	0	402	292	414	356
V/C Ratio(X)	0.32	0.00	0.60	0.28	0.00	0.29	0.60	0.00	0.32	0.11	0.23	0.65
Avail Cap(c_a), veh/h	644	0	1148	964	0	884	365	0	557	403	573	493
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.6	0.0	9.3	11.1	0.0	11.3	35.6	0.0	29.1	32.1	28.5	31.6
Incr Delay (d2), s/veh	0.3	0.0	2.3	0.7	0.0	0.8	2.1	0.0	0.4	0.2	0.3	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	7.2	2.8	0.0	2.7	3.6	0.0	2.3	0.6	1.7	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	0.0	11.6	11.9	0.0	12.1	37.7	0.0	29.6	32.3	28.8	33.6
LnGrp LOS	A	A	B	B	A	B	D	A	C	C	C	C
Approach Vol, veh/h		881			522			291			357	
Approach Delay, s/veh		10.8			12.0			34.2			32.2	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		63.8		26.2	9.2	54.6		26.2				
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0	8.0	39.0		28.0				
Max Q Clear Time (g_c+I1), s		22.0		19.3	6.1	9.6		13.8				
Green Ext Time (p_c), s		5.2		0.9	0.1	3.4		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

HCM 6th TWSC
2: Site Driveway & Hillsdale Avenue

2023 Build Condition
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑↑		↑
Traffic Vol, veh/h	569	0	0	506	0	10
Future Vol, veh/h	569	0	0	506	0	10
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	0	0	3	0	0
Mvmt Flow	618	0	0	550	0	11

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	-	-	-	618
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.3
Pot Cap-1 Maneuver	-	0	0	-	493
Stage 1	-	0	0	-	-
Stage 2	-	0	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	493
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	493	-	-
HCM Lane V/C Ratio	0.022	-	-
HCM Control Delay (s)	12.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

HCM 6th TWSC
 3: Glendale Drive & Patterson Street/Washington Avenue

2023 Build Condition
 Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	267	26	69	229	24	48
Future Vol, veh/h	267	26	69	229	24	48
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	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	1	5	0
Mvmt Flow	297	29	77	254	27	53

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	326	0	720
Stage 1	-	-	-	-	312
Stage 2	-	-	-	-	408
Critical Hdwy	-	-	4.1	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	-	-	2.2	-	3.545
Pot Cap-1 Maneuver	-	-	1245	-	390
Stage 1	-	-	-	-	735
Stage 2	-	-	-	-	665
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1245	-	362
Mov Cap-2 Maneuver	-	-	-	-	362
Stage 1	-	-	-	-	735
Stage 2	-	-	-	-	617

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	546	-	-	1245	-
HCM Lane V/C Ratio	0.147	-	-	0.062	-
HCM Control Delay (s)	12.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

HCM 6th TWSC
4: Patterson Street & Site Driveway

2023 Build Condition
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	35	252	246	7	4	24
Future Vol, veh/h	35	252	246	7	4	24
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, %	0	2	1	0	0	0
Mvmt Flow	38	274	267	8	4	26

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	275	0	0	621	271
Stage 1	-	-	-	271	-
Stage 2	-	-	-	350	-
Critical Hdwy	4.1	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1300	-	-	454	773
Stage 1	-	-	-	779	-
Stage 2	-	-	-	718	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1300	-	-	439	773
Mov Cap-2 Maneuver	-	-	-	439	-
Stage 1	-	-	-	753	-
Stage 2	-	-	-	718	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1300	-	-	-	697
HCM Lane V/C Ratio	0.029	-	-	-	0.044
HCM Control Delay (s)	7.9	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

HCM 6th Signalized Intersection Summary
1: Patterson Street & Hillsdale Avenue

2023 Build Condition
Saturday Midday Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	413	184	46	326	58	191	92	80	65	104	252
Future Volume (veh/h)	127	413	184	46	326	58	191	92	80	65	104	252
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	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	1885	1870	1885	1900	1856	1811	1900	1900	1900	1826	1900	1885
Adj Flow Rate, veh/h	134	435	194	48	343	61	201	97	84	68	109	265
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, %	1	2	1	0	3	6	0	0	0	5	0	1
Cap, veh/h	603	735	328	167	1182	218	308	251	217	294	507	426
Arrive On Green	0.05	0.60	0.60	0.51	0.51	0.51	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1795	1225	547	231	2308	425	1024	940	814	1174	1900	1598
Grp Volume(v), veh/h	134	0	629	221	0	231	201	0	181	68	109	265
Grp Sat Flow(s),veh/h/ln	1795	0	1772	1353	0	1612	1024	0	1754	1174	1900	1598
Q Serve(g_s), s	3.0	0.0	19.8	0.9	0.0	7.3	17.1	0.0	7.6	4.5	4.0	13.1
Cycle Q Clear(g_c), s	3.0	0.0	19.8	12.8	0.0	7.3	21.1	0.0	7.6	12.1	4.0	13.1
Prop In Lane	1.00		0.31	0.22		0.26	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	603	0	1063	742	0	826	308	0	468	294	507	426
V/C Ratio(X)	0.22	0.00	0.59	0.30	0.00	0.28	0.65	0.00	0.39	0.23	0.22	0.62
Avail Cap(c_a), veh/h	665	0	1063	742	0	826	353	0	546	346	591	497
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.8	0.0	11.2	12.3	0.0	12.5	33.9	0.0	27.0	31.9	25.7	29.0
Incr Delay (d2), s/veh	0.2	0.0	2.4	1.0	0.0	0.8	3.5	0.0	0.5	0.4	0.2	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	7.5	2.5	0.0	2.6	4.5	0.0	3.2	1.3	1.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	13.6	13.3	0.0	13.3	37.4	0.0	27.5	32.3	25.9	30.8
LnGrp LOS	A	A	B	B	A	B	D	A	C	C	C	C
Approach Vol, veh/h		763			452			382			442	
Approach Delay, s/veh		12.8			13.3			32.7			29.8	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		60.0		30.0	7.9	52.1		30.0				
Change Period (Y+Rc), s		6.0		6.0	3.0	6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0	8.0	39.0		28.0				
Max Q Clear Time (g_c+I1), s		21.8		23.1	5.0	14.8		15.1				
Green Ext Time (p_c), s		4.7		0.9	0.1	2.9		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

HCM 6th TWSC
2: Site Driveway & Hillsdale Avenue

2023 Build Condition
Saturday Midday Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑↑		↑
Traffic Vol, veh/h	558	0	0	429	0	15
Future Vol, veh/h	558	0	0	429	0	15
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	0	0	3	0	0
Mvmt Flow	607	0	0	466	0	16

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

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	500	-	-
HCM Lane V/C Ratio	0.033	-	-
HCM Control Delay (s)	12.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

HCM 6th TWSC
3: Glendale Drive & Patterson Street/Washington Avenue

2023 Build Condition
Saturday Midday Peak Hour

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	297	36	66	272	47	58
Future Vol, veh/h	297	36	66	272	47	58
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	89	89	89	89	89	89
Heavy Vehicles, %	1	0	0	1	2	0
Mvmt Flow	334	40	74	306	53	65

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	374	0	808
Stage 1	-	-	-	-	354
Stage 2	-	-	-	-	454
Critical Hdwy	-	-	4.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.2	-	3.518
Pot Cap-1 Maneuver	-	-	1196	-	350
Stage 1	-	-	-	-	710
Stage 2	-	-	-	-	640
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1196	-	324
Mov Cap-2 Maneuver	-	-	-	-	324
Stage 1	-	-	-	-	710
Stage 2	-	-	-	-	592

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	459	-	-	1196	-
HCM Lane V/C Ratio	0.257	-	-	0.062	-
HCM Control Delay (s)	15.5	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.2	-

HCM 6th TWSC
4: Patterson Street & Site Driveway

2023 Build Condition
Saturday Midday Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	51	283	302	17	8	43
Future Vol, veh/h	51	283	302	17	8	43
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, %	0	1	1	0	0	0
Mvmt Flow	55	308	328	18	9	47

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	346	0	0	755	337
Stage 1	-	-	-	337	-
Stage 2	-	-	-	418	-
Critical Hdwy	4.1	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	3.5	3.3
Pot Cap-1 Maneuver	1224	-	-	379	710
Stage 1	-	-	-	728	-
Stage 2	-	-	-	669	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1224	-	-	359	710
Mov Cap-2 Maneuver	-	-	-	359	-
Stage 1	-	-	-	689	-
Stage 2	-	-	-	669	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1224	-	-	-	616
HCM Lane V/C Ratio	0.045	-	-	-	0.09
HCM Control Delay (s)	8.1	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3