TRAFFIC IMPACT STUDY

FOR THE PROPOSED
MCDONALD'S RESTAURANT

NSN 45201 (013-1263)

TOWN OF BROWNSBURG
HENDRICKS COUNTY, INDIANA

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October 2025

CEC PROJECT # 355-081

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FOR THE PROPOSED
MCDONALD'S RESTAURANT
TOWN OF BROWNSBURG, HENDRICKS, INDIANA

EXECUTIVE SUMMARY

General Overview of the Development

- Development is to occur at southeast corner of the intersection S Green Street and Northfield Dr, in the Town of Brownsburg, Hendricks County, Indiana.
- Development to consist of the construction of the following:
  - 4,300 s.f. fast food restaurant with drive-through.
- Access to the development proposed via the following:
  - A right-in/right-out only access road is to be constructed connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center).
  - A enter only site access driveway to the proposed access road, approximately 115' south of Northfield Drive (measured center-to-center).
  - An exit only site access driveway to the proposed access road, approximately 250' south Northfield Drive (measured center-to-center).
  - A full access site driveway connecting the proposed McDonald's restaurant to the under construction Christian Brothers Automotive Service Center. A full movement sit driveway to the automotive center is under construction and can be utilized by the proposed McDonald's restaurant.

List of Study Intersections

- S Green Street and Northfield Drive

Trip Generation and Distribution

- Trip generation of the proposed McDonald's Restaurant was determined using rates and equations contained in the Institute of Transportation Engineers (ITE) publication *Trip Generation*, 12th Edition, 2025:
  - Land Use Code 934, *fast-food restaurant with drive-through*, was used to determine the trip generation of the proposed 4,300 s.f. development.
- Anticipated Peak Hour Trip Generation:
  - AM Peak Hour
    - 71 New Primary Trips (36 entering and 35 exiting)
    - 72 Pass-by Trips (37 entering and 35 exiting)
    - 143 total trips (73 entering and 70 existing)

    - PM Peak Hour
        - 61 New Primary Trips (32 entering and 29 exiting)
        - 75 Pass-by Trips (39 entering and 36 exiting)
        - 136 total trips (71 entering and 65 existing)
- Trip distribution for the proposed development was developed based on the existing traffic patterns observed at the intersection of S Green Street and Northfield Drive.

Conclusions/Recommendations

This study has concluded that the construction of the proposed McDonald's Restaurant will have no significant impact on the operation of the adjacent study intersection. Therefore, CEC recommends the following:

- Construct a right-in/right-out only access road connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center). One (1) lane for ingress and one (1) lane for egress should be provided. The access road should be controlled by a Stop sign on the northbound approach to Northfield Drive.
- Construct a entrance only site access driveway from the Access Road which provides one (1) lane for ingress traffic.
- Construct a exit only site access driveway to the Access Road which provides one (1) lane for egress traffic. The driveway should be controlled by a Stop sign on the site driveway egress approach to the Access Road.
- Construct a full access driveway connecting the proposed McDonald's restaurant to the proposed Christian Brothers Automotive Service Center. The drive should provide one (1) lane for ingress traffic and one (1) lane for egress traffic.
- The proposed site driveways and access roads should be constructed to provide sight triangles that are free of sight obstructions, such as parked vehicles, buildings, walls, hedges, bushes, low growing trees, etc. to maintain a clear line of sight to potential conflicting vehicles.

TRAFFIC IMPACT STUDY
FOR THE PROPOSED
MCDONALD'S RESTAURANT
TOWN OF BROWNSBURG, HENDRICKS COUNTY, INDIANA

Civil & Environmental Consultants, Inc. (CEC) has completed this Traffic Impact Study for the proposed McDonald's Restaurant Development to be located at the southeast corner of the intersection of S Green Street and Northfield Dr, in the Town of Brownsburg, Hendricks County Indiana.

PROJECT DESCRIPTION/DATA COLLECTION/EXISTING ROADWAY DESCRIPTION

PROJECT DESCRIPTION

As shown in Figure 1, the proposed McDonald's Restaurant Development is located at the southeast corner of the intersection of S Green Street and Northfield Drive, on the Town of Brownsburg, Hendricks County, Indiana.

Development to consist of the construction of the following:

- 4,300 s.f. McDonald's Restaurant with drive-through

Access to the development proposed via the following:

- A right-in/right-out only access road is to be constructed connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center).
- A enter only site access driveway to the proposed access road, approximately 115' south of Northfield Drive (measured center-to-center).
- An exit only site access driveway to the proposed access road, approximately 250' south Northfield Drive (measured center-to-center).
- A full access site driveway connecting the proposed McDonald's restaurant to the under construction Christian Brothers Automotive Service Center. A full movement sit driveway to the automotive center is under construction and can be utilized by the proposed McDonald's restaurant.

A copy of the site plan for the proposed McDonald's Restaurant Development has been included with this report as Figure 2. The following intersection was selected for study:

- S Green Street and Northfield Drive.

DATA COLLECTION

Turning movement counts were performed at the existing study intersection on Wednesday, September 3, 2025, a typical midweek day. - These turning movement counts were performed from 7:00 A.M. to 9:00 A.M. and from 4:00 P.M. to 6:00 P.M., as these time periods were assumed to include the weekday A.M. and weekday P.M. peak hours of traffic within the study area.

The overall peak hours determined from these turning movement count calculations are as follows:

- A.M. Peak Hour – 7:00 A.M. – 8:00 A.M.
- P.M. Peak Hour – 4:15 P.M. – 5:15 P.M.

The existing 2025 peak hour traffic volumes are summarized in Figure 3. Summaries of the traffic volume data collected at each of the existing study intersection has been included in Appendix A to this report.

EXISTING CONDITIONS

A field reconnaissance of the study area was conducted by CEC to obtain information such as roadway widths, roadway grades, and posted speed limits within the environs of the study intersection. A description of the study roadways is as follows:

EXISTING ROADWAYS

S Green Street – At its intersection with Northfield Drive, S Green Street is a state-owned, other principal arterial according to the INDOT roadway functional classification maps. S Green Street is a 2-lane roadway providing one lane of travel in each direction. At its intersection with Northfield Drive, northbound/southbound exclusive left turn lanes and exclusive right turn lanes are provided. The posted speed limit within the study area is 40 miles per hour. Sidewalks and pedestrian accommodations are provided for each approach.

Northfield Drive – At its intersection with S Green Street, Northfield Drive is a median separated local road. Generally, Northfield Drive provides two lanes of travel on the eastern side and one lane of travel on the western side of the intersection in the study area. At its intersection with S Green Street, Northfield Drive provides eastbound/westbound exclusive left turn lanes and an exclusive right turn lane for the westbound approach. The posted speed limit of Northfield Drive is 30 miles per hour to the east and 25 miles per hour to the west. Sidewalks and pedestrian accommodations are provided for each approach.

EXISTING STUDY INTERSECTION

S Green Street and Northfield Drive – The intersection of S Green Street with Northfield Drive is controlled by a fully actuated traffic signal. The northbound/southbound left turn movements have protected/permitted phasing. The eastbound left turn movement provides protected phasing and westbound left turn movement provides protected/permitted phasing. The northbound, southbound, and westbound approaches also provide protected overlap right turn phases.

Signalized pedestrian crossing equipment, crosswalks, and curb ramps are provided for each approach.

EXISTING YEAR 2025 CONDITION CAPACITY CALCULATIONS

Capacity calculations were performed for the study intersection using existing 2025 weekday A.M. and weekday P.M. peak hour volumes and conditions and the methodologies published in the *Highway Capacity Manual*, Seventh Edition, by the Transportation Research Board. This methodology determines how well an intersection, approach to an intersection, or movement at an intersection operates, and assigns to it a Level of Service (LOS) A through F, with LOS A representing the best operating conditions and LOS F, the worst. Detailed definitions of LOS have been included in Appendix B to this report. The study intersection was evaluated using HCS 7th Edition criteria

Synchro version 12 was used for the capacity analysis. Signal timings were determined based on the traffic count video files.

The results of the capacity calculations performed using existing year 2025 weekday A.M. and weekday P.M. peak hour traffic volumes and conditions are presented in Table 1 and Table 2 for the weekday A.M. peak hour and the weekday P.M. peak hour, respectively.

Copies of the capacity calculations are included in Appendix C to this report.

ADDITIONAL TRAFFIC FROM ADJACENT DEVELOPMENTS

To the south of the proposed McDonalds an Automobile Parts and Service Center is currently being constructed with a full movement site access driveway connecting to S Green Street. As part of this develomenbt, a southbound left turn lane is to be provided on S Green Street entering the driveway. As a result, the northbound left turn lane on S Green Street at Northfield Drive will be modified to accommodate this new southbound left turn lane at the driveway. In order to account for trips associated with the auto service center, site trips were projected based upon data published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, Twelfth Edition, 2025. Land Use Code 943, *Automobile Parts and Service Center*, was used.

The proposed trips for the development have been included in Figure 4 and added to the opening year 2026 no-build and build traffic volumes.

The trip generation for the proposed site is included in Table 4.

OPENING YEAR 2026 NO-BUILD TRAFFIC VOLUMES

Opening year for the proposed development is estimated to be 2026. Therefore, existing 2025 volumes have been projected to year 2026 conditions. An assumed 1.0% linear growth rate was applied. The resultant opening year 2026 peak hour traffic volumes, which include the trips associated with the adjacent auto service center, are summarized in Figure 5.

OPENING YEAR 2026 NO-BUILD CONDITION CAPACITY CALCULATIONS

The results of the capacity calculations performed using Opening Year 2026 No-Build (without development) weekday A.M. and weekday P.M. peak hour traffic volumes and conditions are presented in Table 1 and Table 2 for the weekday A.M. peak hour and the weekday P.M. peak hour, respectively. For analysis purposes, the existing traffic signal observed cycle length was held constant while the phase splits were optimized in the Synchro software.

Copies of the capacity calculations performed using Opening Year 2026 No-Build (without development) weekday A.M. and weekday P.M. peak hour traffic volumes are included in Appendix D to this report.

SITE TRAFFIC GENERATION AND DISTRIBUTION

VEHICULAR TRIP GENERATION

Vehicular trip generation for the proposed McDonald's Restaurant Development was projected based upon data published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, Twelfth Edition, 2025.

Land Use Code 934, *fast-food restaurant with drive thru*, was used to estimate the trip generation of the proposed 4,300 s.f. development. It should also be noted that not all traffic entering or exiting a site is not necessarily new traffic added to the street system. The actual amount of new traffic is dependent upon the purpose of the trip and the route used from its origin to its destination. Developments such as the proposed restaurant attract a portion of their trips from traffic passing the site on the way from an origin to an ultimate destination. These trip types are classified as pass-by trips which do not add new traffic to the adjacent street system and may be reduced from the total external trips generated by a study site.

Using this methodology, the development can be anticipated to generate the following trips:

- Anticipated Peak Hour Trip Generation:
  - AM Peak Hour
    - 71 New Primary Trips (36 entering and 35 exiting)
    - 72 Pass-by Trips (37 entering and 35 exiting)
    - 143 total trips (73 entering and 70 existing)
  - PM Peak Hour
    - 61 New Primary Trips (32 entering and 29 exiting)
    - 75 Pass-by Trips (39 entering and 36 exiting)
    - 136 total trips (71 entering and 65 existing)

The total site-generated trips for the proposed McDonald's Restaurant Development are summarized in Table 3. Copies of the trip generation calculations are included in Appendix E to this report.

SITE TRAFFIC DISTRIBUTION

Trip distribution for the proposed development was developed based on the existing roadway patterns. Using this methodology, the estimated trip distribution includes approximately 10% of new trips destined to/from the east via the Northfield with S Green Street intersection, 10% of new trips destined to/from the west via the Northfield Drive with S Green Street intersection 40% of the new trips destined to/from the north via the S Green Street with Northfield Drive intersection and 40% of the new trips destined to/from the south via the S Green Street with Northfield Drive.

Pass-by trips were calculated based on the individual peak hour movements past each proposed site access driveway as well as the intersection of S Green Street and Northfield Drive.

The anticipated distribution of new and pass-by trips to be generated by the proposed McDonald's Restaurant Development is presented in Figures 6 & 7.

The forecasted trips to be added to each of the study intersections by the proposed McDonald's Restaurant Development are presented in Figure 8, 9, and 10.

FORECASTED OPENING YEAR 2026 BUILD (WITH DEVELOPMENT) PEAK HOUR TRAFFIC VOLUMES

Opening year 2026 build (with development) traffic volumes at the study intersections were determined by adding the forecasted trips to be added to each of the study intersections by the proposed McDonald's Restaurant Development to the existing year 2026 no-build traffic volumes at each of the study intersections. The resultant forecasted opening year 2026 build (with development) traffic volumes at each of the study intersection are presented in Figure 11.

2026 BUILD CONDITIONS (WITH DEVELOPMENT) CAPACITY CALCULATIONS

The results of the capacity calculations performed using forecasted opening year 2026 build (with development) weekday A.M. and weekday P.M. peak hour volumes and conditions are summarized in Table 1 and Table 2 for the weekday A.M. peak hour and the weekday P.M. peak hour, respectively. The proposed site driveway intersections (build conditions) were analyzed assuming an intersection peak hour factor of .92 and a heavy vehicle percentage of two (2) for new movements. For analysis purposes, the existing traffic signal observed cycle length was held constant while the phase splits were optimized in the Synchro software.

The results of the capacity calculations performed for each of the existing study intersections using forecasted opening year 2026 build (with development) peak hour volumes revealed no significant changes in Level of Service or queue at any of the intersections.

All projected 95th percentile queues are expected to be contained within the existing storage lengths provided. The need for additional auxiliary left turn lanes were not evaluated since a southbound left turn lane on S Green Street will be provided at the access drive.

Copies of the capacity calculations performed using forecasted opening year 2026 build (with development) weekday A.M. and weekday P.M. peak hour traffic volumes are included in Appendix F to this report.

CONCLUSIONS/RECOMMENDATIONS

This study has concluded that the construction of the proposed McDonald's Restaurant Development will have no significant impact on the operation of the adjacent study intersections.

The results of the capacity calculations performed for each of the existing study intersections revealed no decreases in movement/approach Level of Service at any of the existing intersections.

Therefore, CEC recommends the following:

- Construct a right-in/right-out only access road connecting the proposed McDonald's restaurant, the adjacent auto repair center currently under construction, and the existing Majestic Road to Northfield Drive. The access road is located approximately 350' east of S Green Street (measured center to center). One (1) lane for ingress and one (1) lane for egress should be provided. The access road should be controlled by a Stop sign on the northbound approach to Northfield Drive.
- Construct a entrance only site access driveway from the Access Road which provides one (1) lane for ingress traffic.
- Construct a exit only site access driveway to the Access Road which provides one (1) lane for egress traffic. The driveway should be controlled by a Stop sign on the site driveway egress approach to the Access Road.
- Construct a full access driveway connecting the proposed McDonald's restaurant to the proposed Christian Brothers Automotive Service Center. The drive should provide one (1) lane for ingress traffic and one (1) lane for egress traffic.
- The proposed site driveways and access roads should be constructed to provide sight triangles that are free of sight obstructions, such as parked vehicles, buildings, walls, hedges, bushes, low growing trees, etc. to maintain a clear line of sight to potential conflicting vehicles.

A Technical Appendix containing summaries of all counts, analyses and calculations has been included with this report.

TABLES

TABLE 1

LEVEL OF SERVICE - WEEKDAY A.M. PEAK HOUR CONDITIONS [(1)]

Traffic Impact Study for the McDonald's Restaurant

Town of Brownsburg, Hendricks County, Indiana

Intersection / Direction	Approach / Movement	2025 Existing					2026 Opening Year No Build					2026 Opening Year Build (With Development)				
		LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	Storage Length	LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	95th% Queue (feet)	LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	95th% Queue (feet)
INTERSECTION	**S Green Street and Northfield Drive**															
NORTHFIELD DRIVE EASTBOUND	**Left Turn**	B	(14.6)	0.14	43	340	B	(14.6)	0.14	44	340	B	(15.0)	0.14	45	340
	Through/Right	B	(17.1)	0.41	70	--	B	(17.2)	0.41	71	--	B	(18.0)	0.44	77	--
	Approach	B	(16.1)	--	--	--	B	(16.2)	--	--	--	B	(16.9)	--	--	--
NORTHFIELD DRIVE WESTBOUND	**Left Turn**	C	(25.4)	0.50	36	300	C	(25.5)	0.50	36	300	C	(25.6)	0.51	41	300
	Through	B	(16.2)	0.07	21	--	B	(16.3)	0.07	21	--	B	(16.7)	0.07	21	--
	Right Turn	B	(15.0)	0.17	6	--	B	(15.1)	0.17	6	--	B	(15.2)	0.16	5	--
	Approach	B	(18.8)	--	--	--	B	(18.9)	--	--	--	B	(19.4)	--	--	--
S GREEN STREET NORTHBOUND	**Left Turn**	B	(10.4)	0.02	7	275	B	(10.4)	0.02	7	200	B	(10.4)	0.03	9	200
	Through	B	(14.5)	0.71	222	--	B	(14.6)	0.71	225	--	B	(14.8)	0.72	238	--
	Right Turn	A	(9.6)	0.11	9	380	A	(9.6)	0.12	9	380	A	(9.6)	0.11	9	380
	Approach	B	(13.8)	--	--	--	B	(13.9)	--	--	--	B	(14.1)	--	--	--
S GREEN STREET SOUTHBOUND	**Left Turn**	A	(9.9)	0.12	23	415	A	(9.9)	0.12	23	415	A	(10.0)	0.14	26	415
	Through	B	(12.6)	0.64	221	--	B	(12.7)	0.65	226	--	B	(12.7)	0.65	235	--
	Right Turn	A	(7.8)	0.05	0	585	A	(7.7)	0.05	0	585	A	(7.7)	0.05	0	585
	Approach	B	(12.0)	--	--	--	B	(12.1)	--	--	--	B	(12.1)	--	--	--
OVERALL INTERSECTION		B	(13.8)	--	--	--	B	(13.8)	--	--	--	B	(14.1)	--	--	--
INTERSECTION	**S Green Street and Driveway**															
DRIVEWAY WESTBOUND	**Approach**	--	--	--	--	--	B	(12.7)	0.01	0	--	C	(15.5)	0.17	15	--
S GREEN STREET SOUTHBOUND	**Left Turn**	--	--	--	--	--	A	(8.2)	0.01	0	--	A	(8.3)	0.04	3	--
INTERSECTION	**Northfield Drive and Access Road**															
ACCESS ROAD NORTHBOUND	**Approach**	--	--	--	--	--	--	--	--	--	--	A	(8.8)	0.01	0	--
INTERSECTION	**Access Road and Site Driveway 2**															
SITE DRIVEWAY 2 WESTBOUND	**Approach**	--	--	--	--	--	--	--	--	--	--	A	(8.6)	0.01	0	--

(1) Level of Service and vehicular delay calculated using methodologies published by the Transportation Research Board in their Highway Capacity Manual. Synchro software was utilized for the calculations.

TABLE 2

LEVEL OF SERVICE - WEEKDAY P.M. PEAK HOUR CONDITIONS [(1)]

Traffic Impact Study for the McDonald's Restaurant

Town of Brownsburg, Hendricks County, Indiana

Intersection / Direction	Approach / Movement	2025 Existing					2026 Opening Year No Build					2026 Opening Year Build (With Development)				
		LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	Storage Length	LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	95th% Queue (feet)	LOS	Delay (sec/veh)	v/c	95th% Queue (feet)	95th% Queue (feet)
INTERSECTION	**S Green Street and Northfield Drive**															
NORTHFIELD DRIVE EASTBOUND	**Left Turn**	B	(16.3)	0.12	37	340	B	(16.5)	0.12	37	340	B	(16.7)	0.13	37	340
	Through/Right	B	(19.2)	0.34	49	--	B	(19.4)	0.34	50	--	B	(19.9)	0.36	53	--
	Approach	B	(18.0)	--	--	--	B	(18.2)	--	--	--	B	(18.6)	--	--	--
NORTHFIELD DRIVE WESTBOUND	**Left Turn**	C	(24.6)	0.56	60	300	C	(24.7)	0.56	61	300	C	(25.1)	0.57	64	300
	Through	B	(18.2)	0.24	54	--	B	(18.3)	0.24	54	--	B	(18.5)	0.24	54	--
	Right Turn	B	(15.8)	0.18	10	--	B	(15.9)	0.18	10	--	B	(15.9)	0.17	10	--
	Approach	B	(19.8)	--	--	--	B	(20.0)	--	--	--	C	(20.3)	--	--	--
S GREEN STREET NORTHBOUND	**Left Turn**	B	(10.3)	0.09	16	275	B	(10.4)	0.09	16	200	B	(10.5)	0.10	17	200
	Through	B	(14.3)	0.69	248	--	B	(14.3)	0.70	251	--	B	(14.7)	0.71	260	--
	Right Turn	A	(8.8)	0.11	10	380	A	(8.7)	0.11	11	380	A	(8.8)	0.11	11	380
	Approach	B	(13.4)	--	--	--	B	(13.4)	--	--	--	B	(13.7)	--	--	--
S GREEN STREET SOUTHBOUND	**Left Turn**	A	(9.8)	0.14	26	415	A	(9.8)	0.15	27	415	A	(9.9)	0.16	29	415
	Through	B	(14.5)	0.76	297	--	B	(14.6)	0.76	302	--	B	(14.8)	0.77	310	--
	Right Turn	A	(8.4)	0.11	11	585	A	(8.4)	0.11	11	585	A	(8.5)	0.11	11	585
	Approach	B	(13.5)	--	--	--	B	(13.5)	--	--	--	B	(13.6)	--	--	--
OVERALL INTERSECTION		B	(14.5)	--	--	--	B	(14.6)	--	--	--	B	(14.8)	--	--	--
INTERSECTION	**S Green Street and Driveway**															
DRIVEWAY WESTBOUND	**Approach**	--	--	--	--	--	C	(15.8)	0.02	3	--	C	(20.2)	0.23	23	--
S GREEN STREET SOUTHBOUND	**Left Turn**	--	--	--	--	--	A	(8.5)	0.01	0	--	A	(8.6)	0.03	3	--
INTERSECTION	**Northfield Drive and Access Road**															
ACCESS ROAD NORTHBOUND	**Approach**	--	--	--	--	--	--	--	--	--	--	A	(8.8)	0.00	0	--
INTERSECTION	**Access Road and Site Driveway 2**															
SITE DRIVEWAY 2 WESTBOUND	**Approach**	--	--	--	--	--	--	--	--	--	--	A	(8.6)	0.01	0	--

(1) Level of Service and vehicular delay calculated using methodologies published by the Transportation Research Board in their Highway Capacity Manual. Synchro software was utilized for the calculations.

TABLE 3

ANTICIPATED TRIP GENERATION SUMMARY [1]

Traffic Impact Study for the McDonald's Restaurant

Town of Brownsburg, Hendricks County, Indiana

ITE Land Use Code	Description	Size	Time Period	New Trips			Pass-by Trips			Total Trips		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
934	Fast Food Restaurant with Drive Through	4,300 sf	Weekday 24 Hour	--	--	--	--	--	--	963	964	1,927
			Weekday A.M. Peak Hour	36	35	71	37	35	72	73	70	143
			Weekday P.M. Peak Hour	32	29	61	39	36	75	71	65	136

(1) Anticipated trip generation calculated based on the rates published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, 12th Edition, 2025.

TABLE 4

ANTICIPATED TRIP GENERATION SUMMARY FROM PROPOSED ADJACENT DEVELOPEMENT[(1)]

Traffic Impact Study for the McDonald's Restaurant

Town of Brownsburg, Hendricks County, Indiana

ITE Land Use Code	Description	Size	Time Period	New Trips			Pass-by Trips			Total Trips		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
943	Automobile Parts and Service Center	5,361 sf	Weekday 24 Hour	--	--	--	--	--	--	44	45	89
			Weekday A.M. Peak Hour	7	3	10	0	0	0	7	3	10
			Weekday P.M. Peak Hour	4	7	11	0	0	0	4	7	11

(1) Anticipated trip generation calculated based on the rates published by the Institute of Transportation Engineers (ITE) in their *Trip Generation*, 12th Edition, 2025.

FIGURES

- COUNT LOCATIONS

NORTH

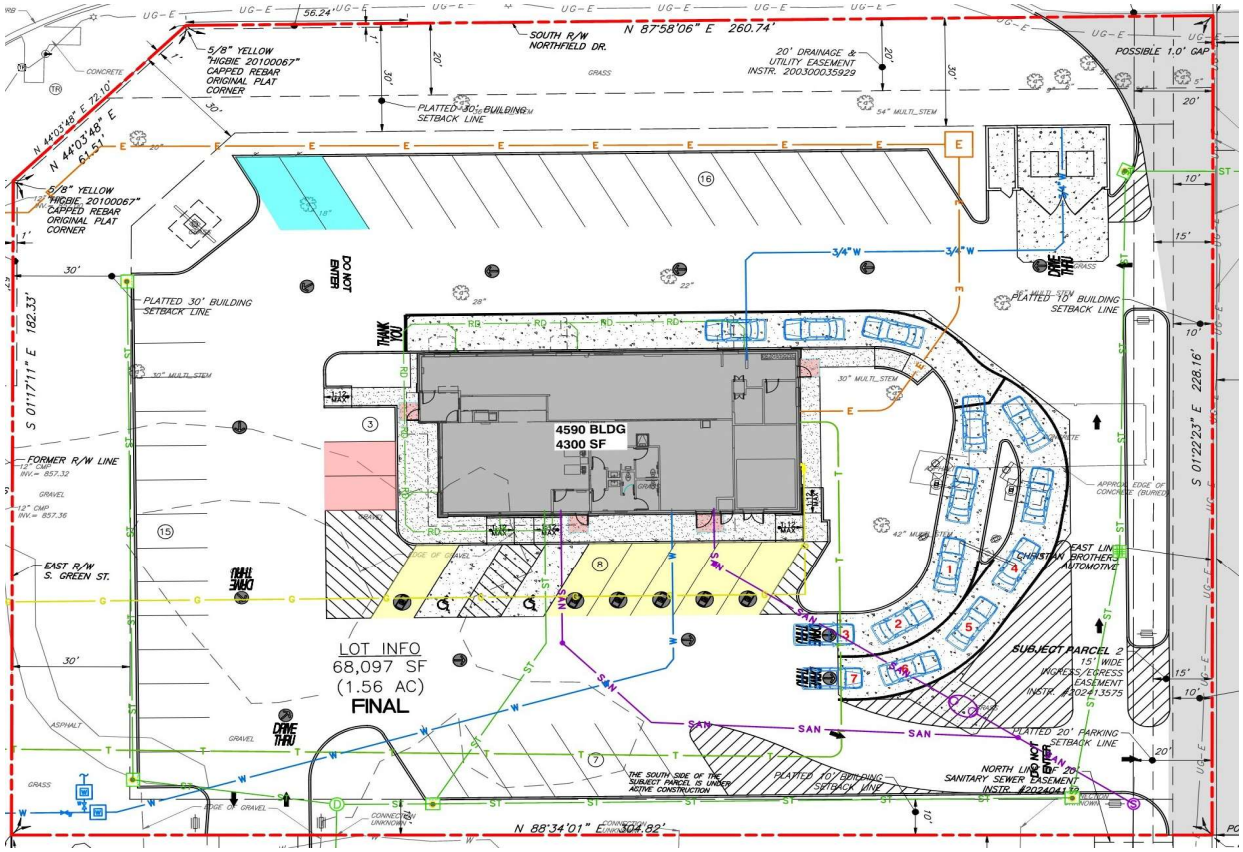
Civil & Environmental Consultants, Inc.

700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

Site Location

DRAWN BY:	tpz	CHECKED BY:	cad	APPROVED BY:	cad	FIGURE NO.:	1
DATE:	October 2025	DWG SCALE:	nts	PROJECT NO:	355-081		



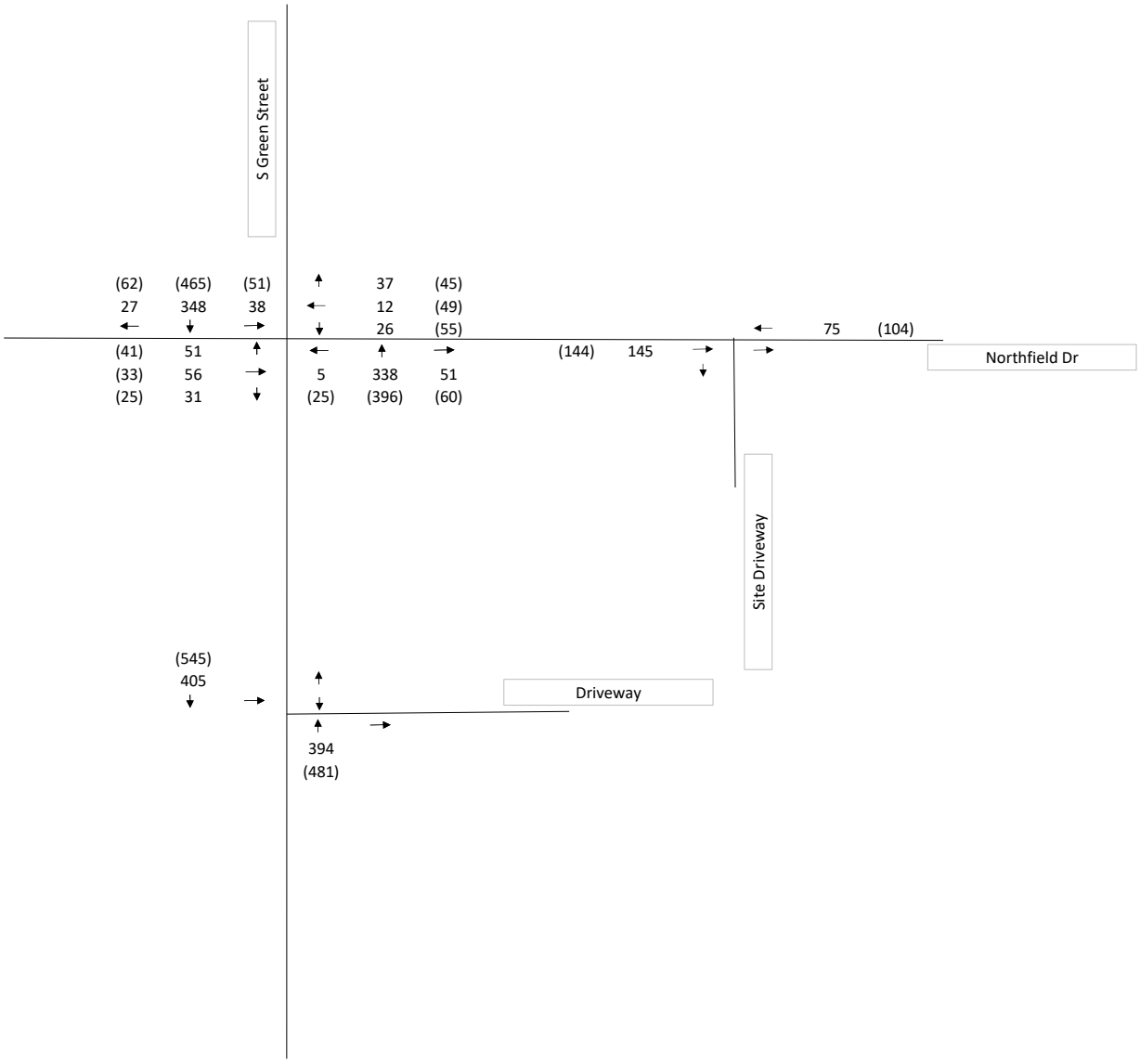
NORTH

Civil & Environmental Consultants, Inc.
700 Cherrington Parkway · Moon Township, PA 15108
412-429-2324 · 800-365-2324
www.cecinc.com

Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

Site Plan

DRAWN BY:	tpz	CHECKED BY:	cad	APPROVED BY:	cad	FIGURE NO.:	2
DATE:	October 2025	DWG SCALE:	nts	PROJECT NO:	355-081		



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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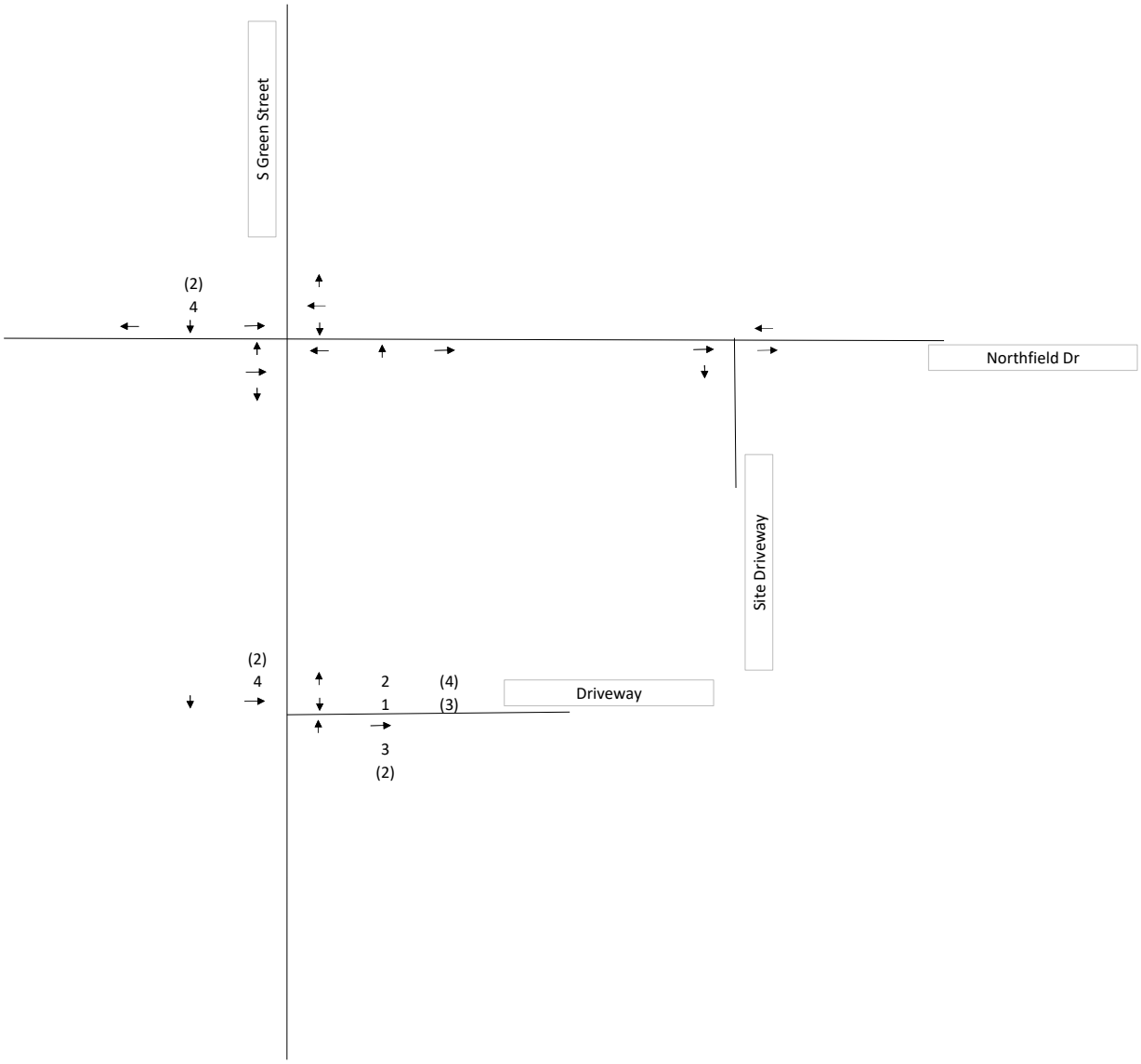
Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

2025 Existing Conditions
Peak Hour Traffic Volumes

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 3
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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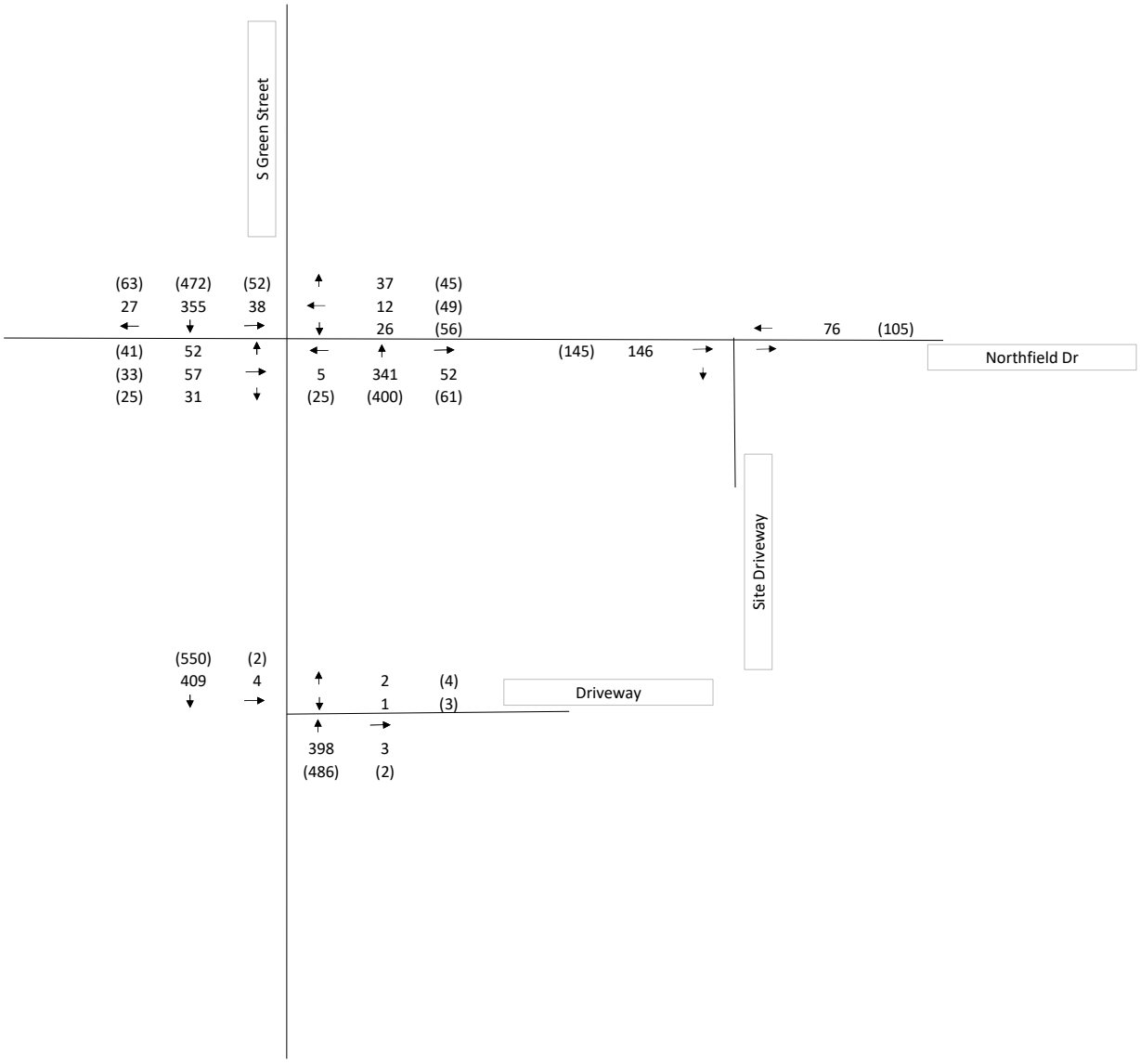
Traffic Impact Assessment
Brownsburg, IN

Additional Traffic From Adjacent Auto Repair Under Construction

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 4
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

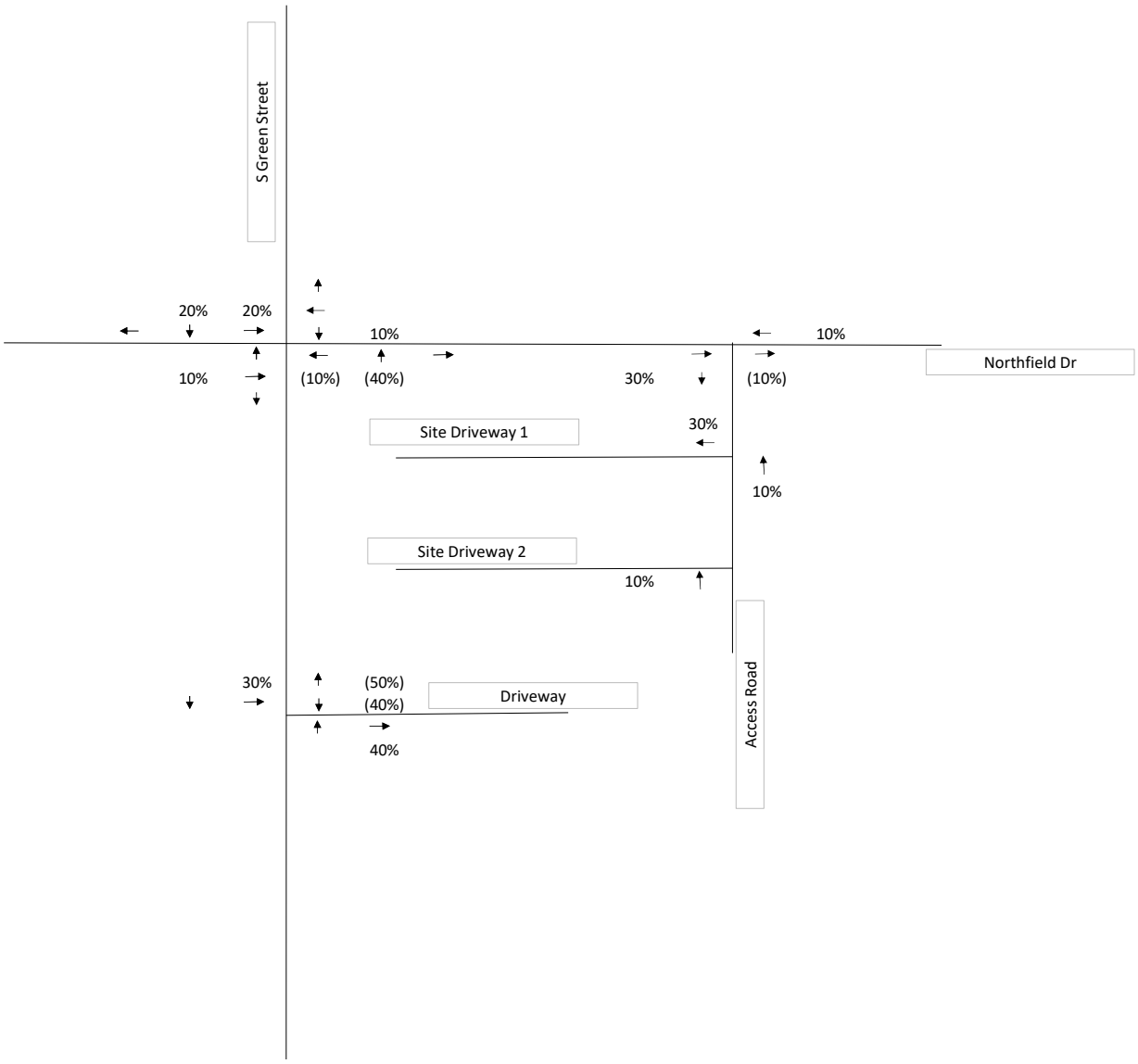
Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

2026 Opening Year No Build
Peak Hour Traffic Volumes

tpz
October 2025

cad
nts

cad
355-081



NORTH

Legend:

12% - Arrival Trip Distribution

(12%) - Departure Trip Distribution

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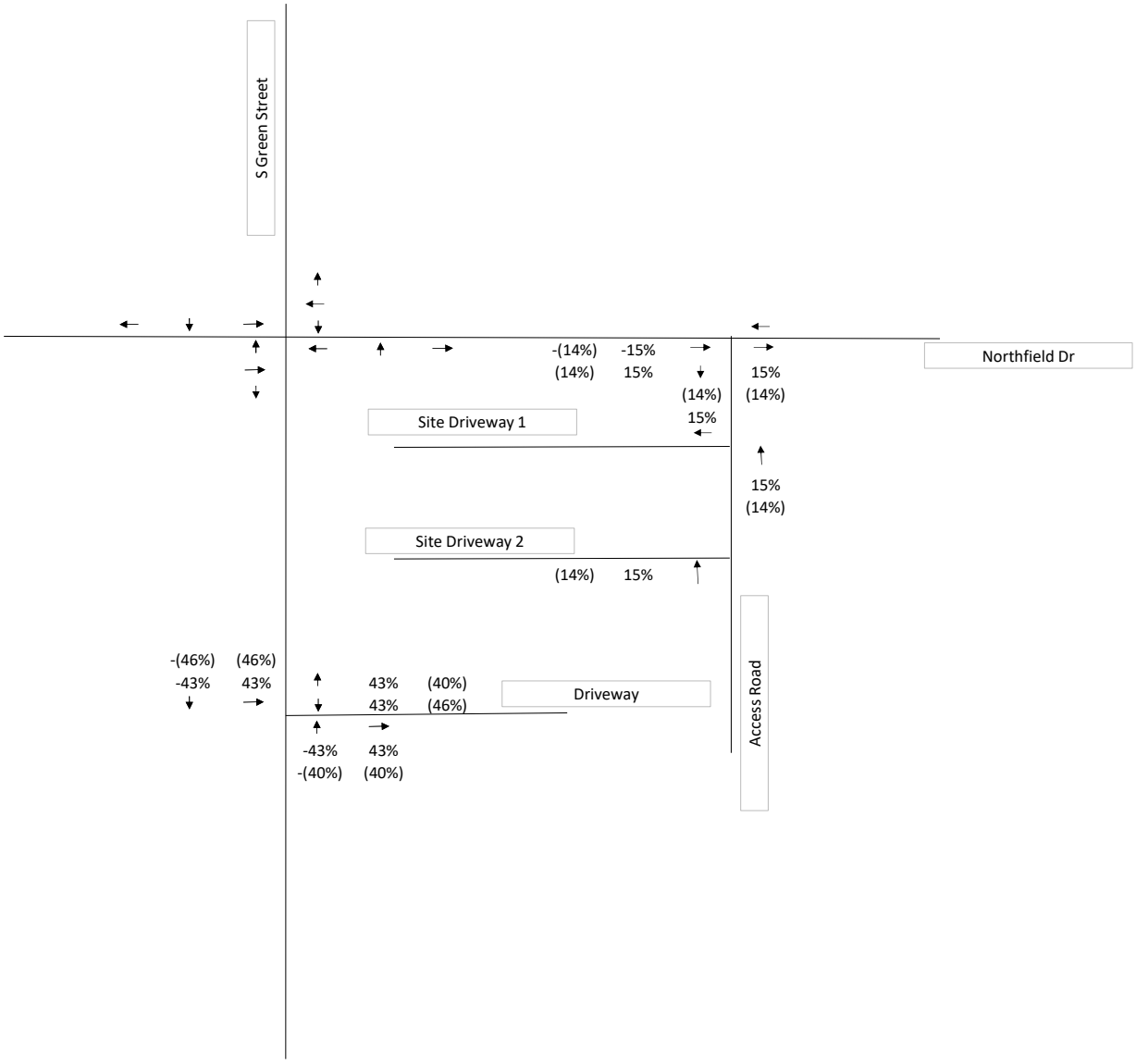
Trip Distribution

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 6
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:
12% - AM Pass-By Distribution
(12%) - PM Pass-By Distribution

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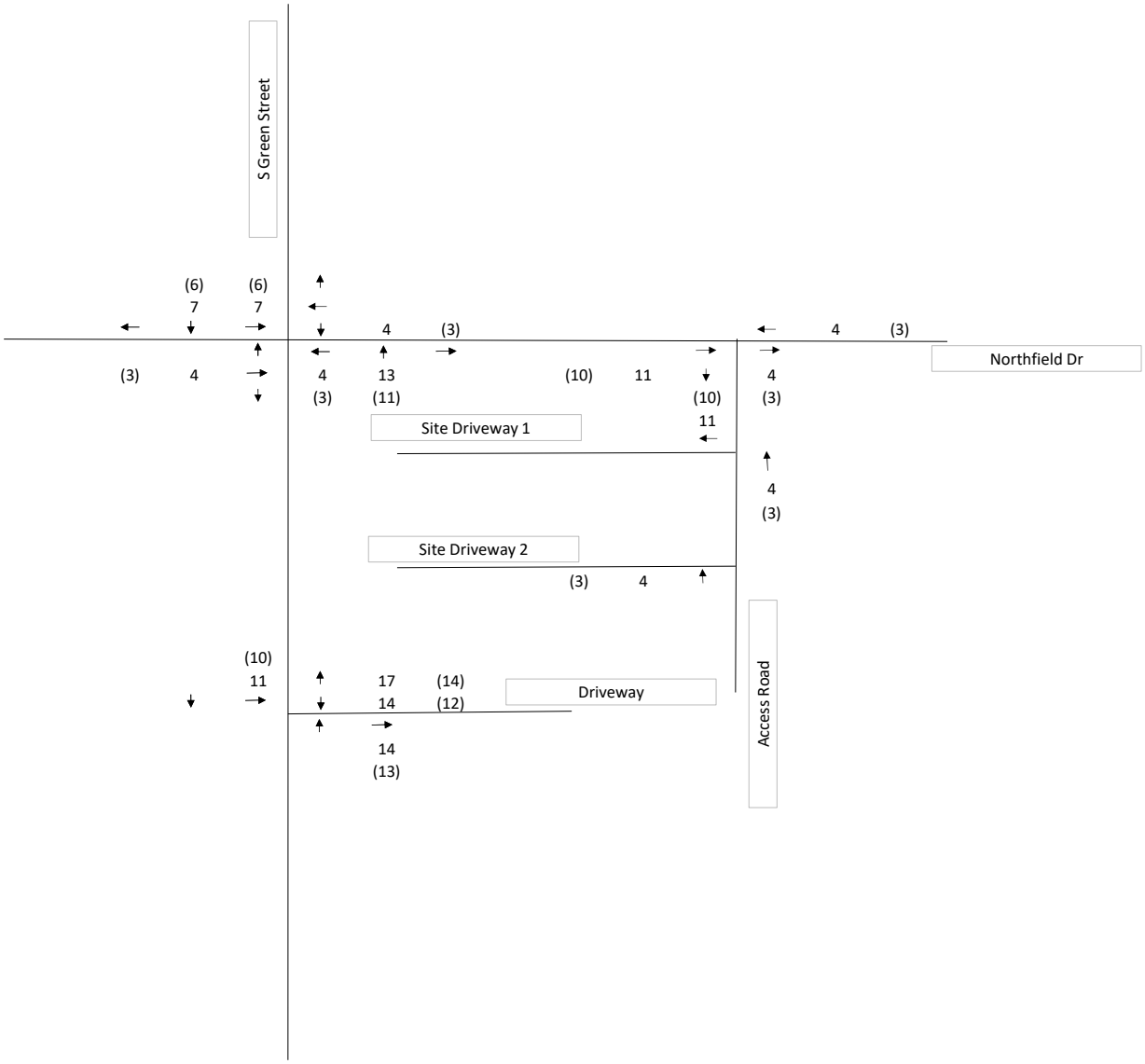
Traffic Impact Assessment
Brownsburg, IN

Pass-By Trip Distribution

tpz | cad | cad
October 2025 | nts | 355-081



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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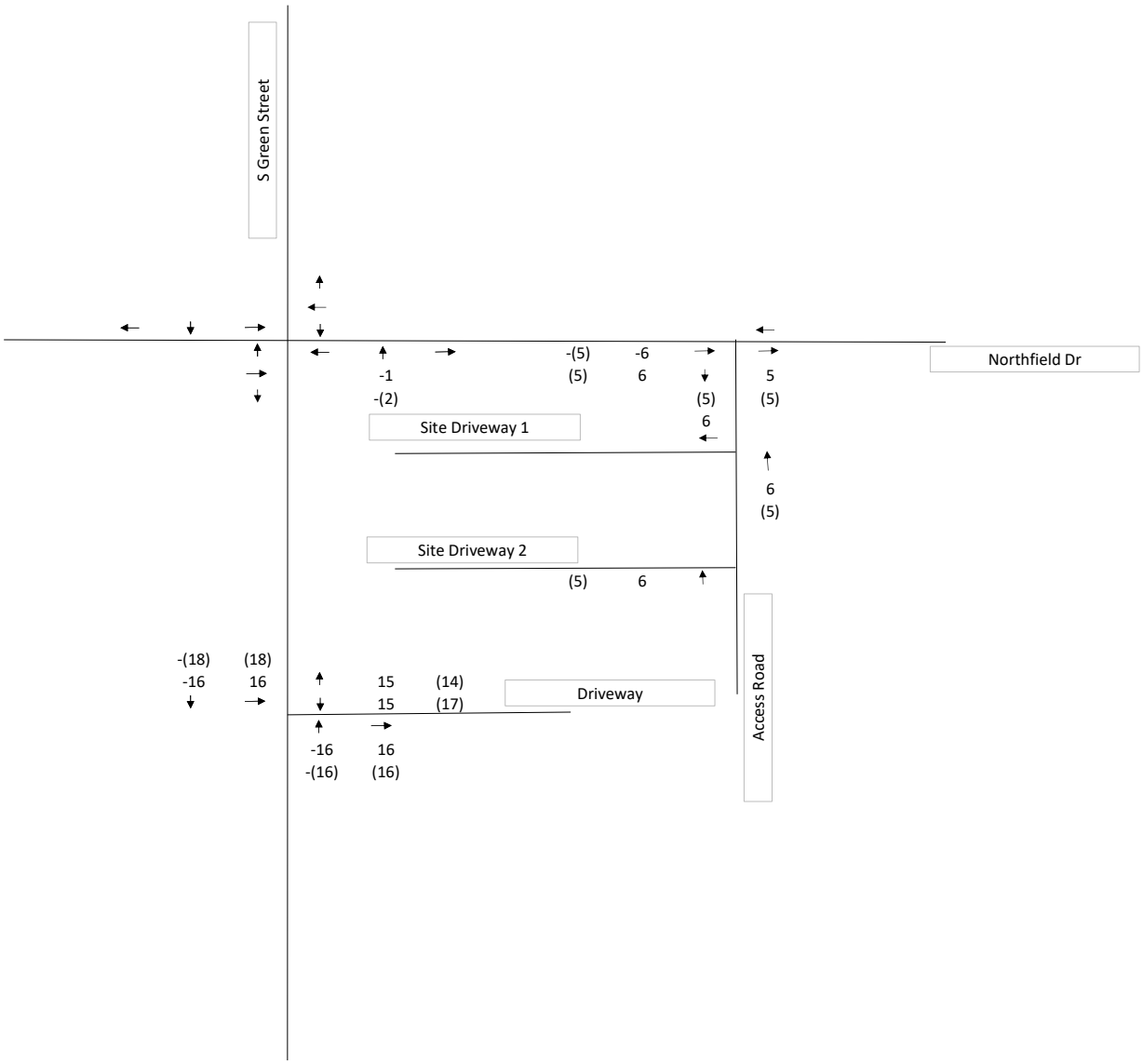
New Trips

DRAWN BY:	tpz	CHECKED BY:	cad	APPROVED BY:	cad	FIGURE NO.:	8
DATE:	October 2025	DWG SCALE:	nts	PROJECT NO:	355-081		



NORTH

Legend:

12 - AM Peak Hour Traffic Volume

(12) - PM Peak Hour Traffic Volume

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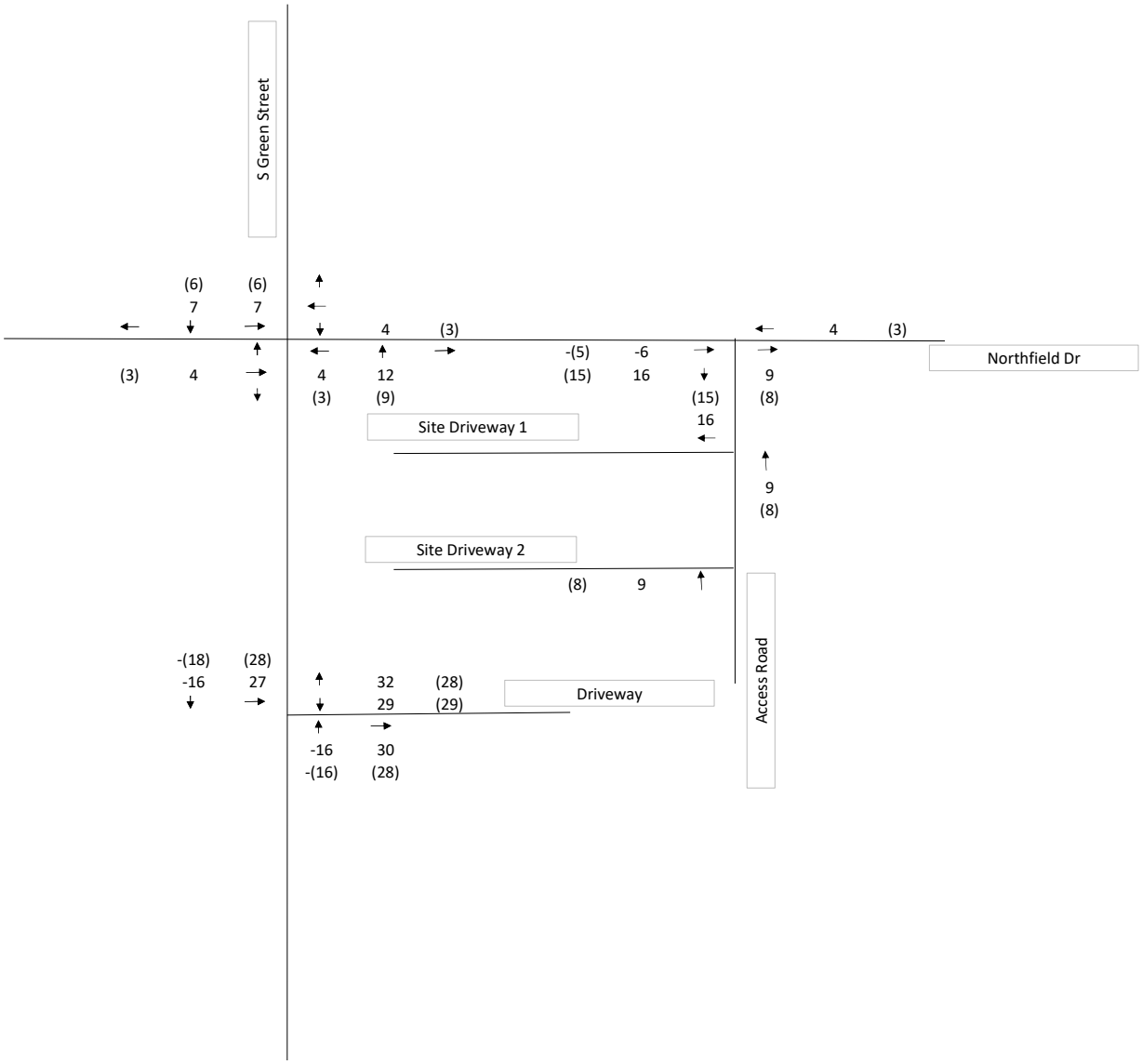
Pass-By Trips

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 9
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:

12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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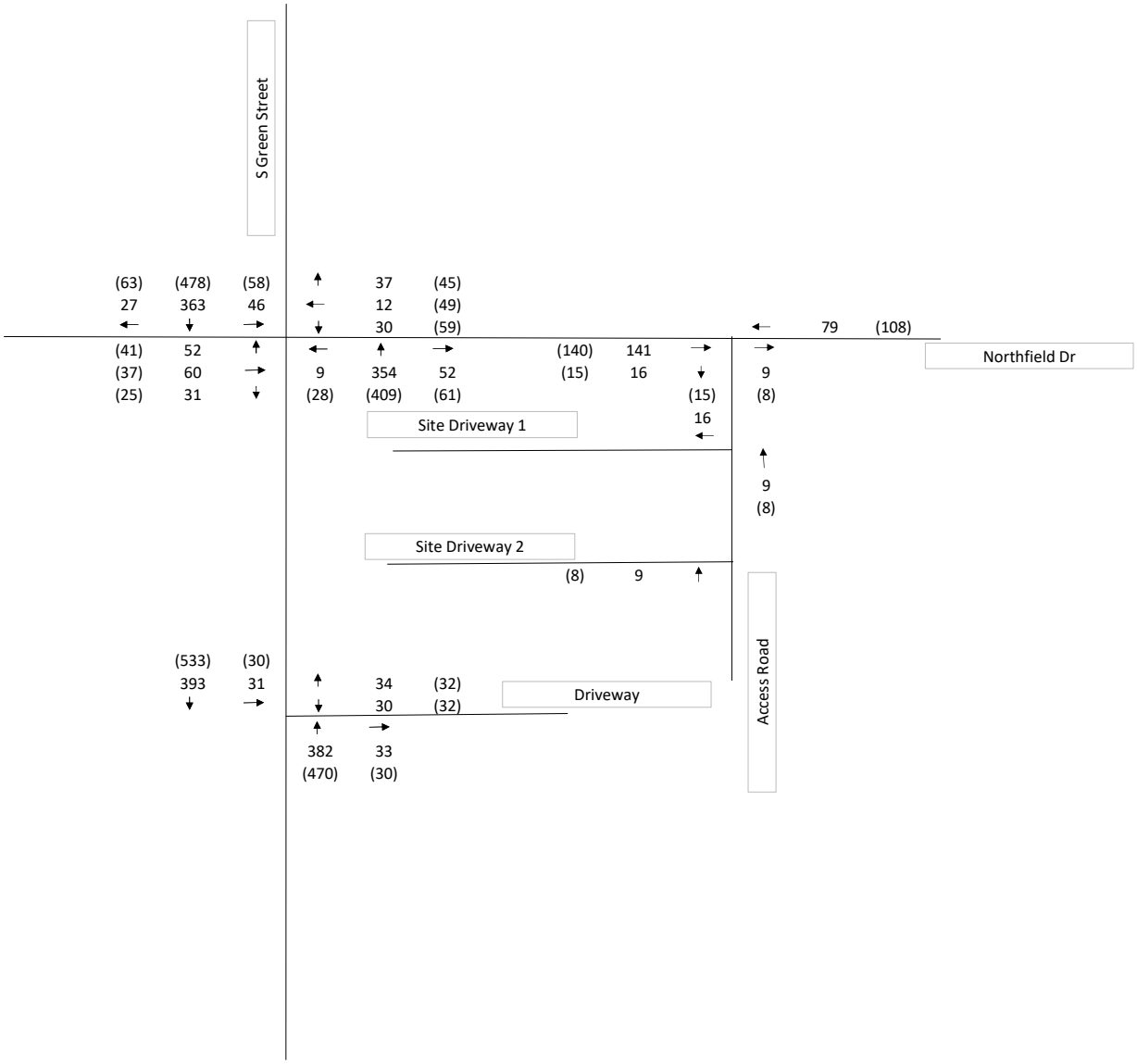
Traffic Impact Assessment
Brownsburg, IN

Total Trips

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 10
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	



NORTH

Legend:
12 - AM Peak Hour Traffic Volume
(12) - PM Peak Hour Traffic Volume

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Mcdonald's Restaurant
Traffic Impact Assessment
Brownsburg, IN

2026 Opening Year Build Conditions Peak Hour Volumes

DRAWN BY: tpz	CHECKED BY: cad	APPROVED BY: cad	FIGURE NO.: 11
DATE: October 2025	DWG SCALE: nts	PROJECT NO: 355-081	

APPENDIX A

TURNING MOVEMENT T COUNT SUMMARIES

Count Date: Wednesday September 3rd, 2025

Intersection: S Green Street and Northfield Drive

All Vehicles	Eastbound			Westbound			Northbound			Southbound			
	Northfield Drive			Northfield Drive			S Green Street			S Green Street			
Time	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	14	19	9	4	1	4	0	69	9	10	61	5	205
7:15 AM	15	15	4	8	2	9	0	88	14	10	83	3	251
7:30 AM	13	11	12	7	1	11	3	97	10	9	101	8	283
7:45 AM	9	11	6	7	8	13	2	84	18	9	103	11	281
8:00 AM	15	16	6	11	7	5	1	76	10	8	59	8	222
8:15 AM	23	7	6	7	4	5	0	79	15	12	69	2	229
8:30 AM	12	9	7	8	2	6	5	75	10	10	77	6	227
8:45 AM	4	9	3	9	7	3	10	82	11	9	85	13	245
TOTAL	105	97	53	61	32	56	21	650	97	77	638	56	
PH Vol	51	56	31	26	12	37	5	338	51	38	348	27	PHF
PH HV	3	0	0	2	1	1	1	12	2	2	12	3	0.9
HV%	6%	0%	0%	8%	8%	3%	20%	4%	4%	5%	3%	11%	

HV	Eastbound			Westbound			Northbound			Southbound			
	Northfield Drive			Northfield Drive			S Green Street			S Green Street			
Time	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
7:00 AM	2	0	0	1	0	0	0	0	1	2	2	2	10
7:15 AM	1	0	0	0	0	1	0	3	0	0	1	0	6
7:30 AM	0	0	0	0	0	0	1	2	0	0	2	0	5
7:45 AM	0	0	0	1	1	0	0	7	1	0	7	1	18
8:00 AM	1	1	0	1	1	0	0	1	0	0	1	2	8
8:15 AM	3	0	0	0	0	0	0	4	2	1	3	0	13
8:30 AM	0	0	0	0	0	1	0	4	0	0	5	0	10
8:45 AM	0	1	0	2	0	0	1	4	3	0	3	1	15
TOTAL	7	2	0	5	2	2	2	25	7	3	24	6	
PH Vol	3	0	0	2	1	1	1	12	2	2	12	3	

Count Date: Wednesday September 3rd, 2025
Intersection: S Green Street and Northfield Drive

All Vehicles	Eastbound			Westbound			Northbound			Southbound			
	Northfield Drive			Northfield Drive			S Green Street			S Green Street			
Time	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	10	5	5	10	5	21	3	92	11	12	126	11	311
4:15 PM	10	14	9	15	16	12	6	101	14	12	122	18	349
4:30 PM	12	5	4	9	12	14	8	86	20	12	122	12	316
4:45 PM	6	9	11	16	11	10	7	108	9	13	105	16	321
5:00 PM	13	5	1	15	10	9	4	101	17	14	116	16	321
5:15 PM	12	10	8	13	5	11	7	112	18	5	97	29	327
5:30 PM	17	13	7	9	18	17	11	101	12	5	105	21	336
5:45 PM	15	7	9	13	11	12	10	81	16	6	99	13	292
TOTAL	95	68	54	100	88	106	56	782	117	79	892	136	
PH Vol	41	33	25	55	49	45	25	396	60	51	465	62	PHF
PH HV	4	0	1	0	1	1	2	7	1	1	11	2	0.94
HV%	10%	0%	4%	0%	2%	2%	8%	2%	2%	2%	2%	3%	

HV	Eastbound			Westbound			Northbound			Southbound			
	Northfield Drive			Northfield Drive			S Green Street			S Green Street			
Time	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
4:00 PM	2	1	0	0	1	1	0	2	1	0	1	0	9
4:15 PM	3	0	1	0	1	0	1	2	0	0	0	1	9
4:30 PM	1	0	0	0	0	0	1	3	1	0	5	0	11
4:45 PM	0	0	0	0	0	1	0	1	0	1	2	0	5
5:00 PM	0	0	0	0	0	0	0	1	0	0	4	1	6
5:15 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
5:30 PM	0	0	0	1	0	0	0	3	1	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	2	0	0	3	0	5
TOTAL	6	1	1	1	2	2	2	16	3	1	17	2	
PH Vol	4	0	1	0	1	1	2	7	1	1	11	2	

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVELS OF SERVICE

Intersection levels of service (LOS) were determined through implementation of the methodology presented in the *Highway Capacity Manual 7th Edition*, published by the Transportation Research Board.

i. Signalized Intersections

An explanation of level of service at signalized intersections is as follows:

This subsection describes the LOS criteria for the motorized vehicle mode. The criteria for the motorized vehicle mode are different from those for other modes. Specifically, the motorized vehicle mode criteria are based on performance measures that are field measurable and perceivable by travelers. The criteria for other modes are based on scores reported by travelers indicating their perception of service quality.

LOS can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection of an approach. Control delay and volume-to-capacity ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a surrogate measure of driver discomfort and fuel consumption. The volume-to-capacity ratio quantifies the degree to which a phases's capacity is utilized by a lane group. The following paragraphs describe each LOS.

LOS A describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

A lane group can incur a delay less than 80 s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

LOS Criteria: Signalized Intersection

Control Delay (s/veh)	**LOS by Volume-to-Capacity (v/c) Ratio[1]**	
	v/c ≤ 1.0	**v/c > 1.0**
≤ 10	A	F
> 10 – 20	B	F
> 20 – 35	C	F
> 35 – 55	D	F
> 55 – 80	E	F
> 80	F	F

(1) For approach-based and intersectionwide assessments, LOS is defined solely by control delay.

ii. Unsignalized Intersections

The following level-of-service criteria for two-way stop-controlled and all-way stop-controlled intersections differ from the criteria for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from various kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Thus, a higher level of control delay is acceptable at a signalized intersection for the same level of service.

Level of service for two-way stop-controlled (TWSC) intersections and an all-way stop control intersections is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement), as well as the major-street left turns. For TWSC intersections, LOS is not defined for the intersection as a whole or for major –street approaches for three primary reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles a typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay for all vehicles; and (c) the resulting low delay can mask LOS deficiencies for minor movements.

Level of service for two-way stop control is not defined for the intersection as a whole, while level of service for all-way stop control is defined for the intersection as a whole.

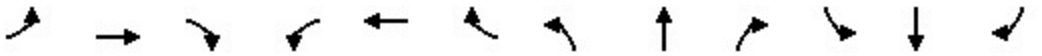
LOS Criteria: Two-Way and All-Way Stop Controlled Intersections

Control Delay (s/veh)	**LOS by Volume-to-Capacity (v/c) Ratio (1)(2)**	
	v/c ≤ 1.0	**v/c > 1.0**
0 – 10	A	F
> 10 – 15	B	F
> 15 – 25	C	F
> 25 – 35	D	F
> 35 – 50	E	F
> 50	F	F

(1) TWSC: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.
(2) AWSC: For approaches and intersection wide assessment, LOS is defined solely by control delay.

APPENDIX C

EXISTING 2025 PEAK HOUR CAPACITY ANALYSIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	56	31	26	12	37	5	338	51	38	348	27
Future Volume (veh/h)	51	56	31	26	12	37	5	338	51	38	348	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1811	1900	1900	1781	1781	1856	1604	1841	1841	1826	1856	1737
Adj Flow Rate, veh/h	57	62	34	29	13	41	6	376	57	42	387	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	0	0	8	8	3	20	4	4	5	3	11
Cap, veh/h	413	152	83	58	192	243	316	530	503	359	606	567
Arrive On Green	0.06	0.13	0.13	0.03	0.11	0.11	0.01	0.29	0.29	0.05	0.33	0.33
Sat Flow, veh/h	1725	1154	633	1697	1781	1572	1527	1841	1560	1739	1856	1472
Grp Volume(v), veh/h	57	0	96	29	13	41	6	376	57	42	387	30
Grp Sat Flow(s),veh/h/ln	1725	0	1786	1697	1781	1572	1527	1841	1560	1739	1856	1472
Q Serve(g_s), s	1.1	0.0	2.0	0.7	0.3	0.9	0.1	7.3	1.0	0.7	7.1	0.5
Cycle Q Clear(g_c), s	1.1	0.0	2.0	0.7	0.3	0.9	0.1	7.3	1.0	0.7	7.1	0.5
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	413	0	236	58	192	243	316	530	503	359	606	567
V/C Ratio(X)	0.14	0.00	0.41	0.50	0.07	0.17	0.02	0.71	0.11	0.12	0.64	0.05
Avail Cap(c_a), veh/h	742	0	891	423	889	858	685	1377	1221	712	1389	1188
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	0.0	16.0	19.0	16.1	14.7	10.4	12.8	9.5	9.8	11.5	7.7
Incr Delay (d2), s/veh	0.2	0.0	1.1	6.4	0.1	0.3	0.0	1.8	0.1	0.1	1.1	0.0
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	0.4	0.0	0.8	0.3	0.1	0.3	0.0	2.4	0.3	0.2	2.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.6	0.0	17.1	25.4	16.2	15.0	10.4	14.5	9.6	9.9	12.6	7.8
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		153			83			439			459	
Approach Delay, s/veh		16.1			18.8			13.8			12.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	16.6	6.4	10.3	5.3	18.1	7.3	9.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.7	9.3	2.7	4.0	2.1	9.1	3.1	2.9
Green Ext Time (p_c), s	0.0	2.2	0.0	0.4	0.0	2.2	0.0	0.1

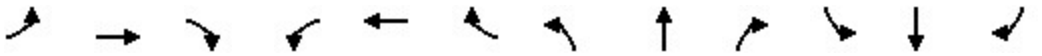
Intersection Summary	
HCM 7th Control Delay, s/veh	13.8
HCM 7th LOS	B

3: S Green Street & Northfield Drive

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	96	29	13	41	6	376	57	42	387	30
v/c Ratio	0.12	0.29	0.11	0.04	0.08	0.01	0.42	0.05	0.07	0.36	0.02
Control Delay (s/veh)	16.1	21.6	28.6	27.1	1.3	8.4	17.5	1.2	8.4	12.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.1	21.6	28.6	27.1	1.3	8.4	17.5	1.2	8.4	12.6	0.0
Queue Length 50th (ft)	13	21	9	4	0	1	113	0	7	79	0
Queue Length 95th (ft)	43	70	36	21	6	7	222	9	23	221	0
Internal Link Dist (ft)		525		948			865			655	
Turn Bay Length (ft)	340		300		300	275		415	415		585
Base Capacity (vph)	540	854	389	820	606	596	1232	1150	639	1257	1327
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.07	0.02	0.07	0.01	0.31	0.05	0.07	0.31	0.02

Intersection Summary

3: S Green Street & Northfield Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	33	25	55	49	45	25	396	60	51	465	62
Future Volume (veh/h)	41	33	25	55	49	45	25	396	60	51	465	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1752	1900	1841	1900	1870	1870	1781	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	44	35	27	59	52	48	27	421	64	54	495	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	0	4	0	2	2	8	2	2	2	2	3
Cap, veh/h	354	104	80	106	217	271	310	607	607	379	650	621
Arrive On Green	0.05	0.10	0.10	0.06	0.12	0.12	0.03	0.32	0.32	0.05	0.35	0.35
Sat Flow, veh/h	1668	995	767	1810	1870	1585	1697	1870	1585	1781	1870	1572
Grp Volume(v), veh/h	44	0	62	59	52	48	27	421	64	54	495	66
Grp Sat Flow(s),veh/h/ln	1668	0	1762	1810	1870	1585	1697	1870	1585	1781	1870	1572
Q Serve(g_s), s	1.0	0.0	1.4	1.4	1.1	1.1	0.5	8.6	1.1	0.8	10.3	1.2
Cycle Q Clear(g_c), s	1.0	0.0	1.4	1.4	1.1	1.1	0.5	8.6	1.1	0.8	10.3	1.2
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	0	185	106	217	271	310	607	607	379	650	621
V/C Ratio(X)	0.12	0.00	0.34	0.56	0.24	0.18	0.09	0.69	0.11	0.14	0.76	0.11
Avail Cap(c_a), veh/h	656	0	805	413	855	812	643	1282	1179	689	1282	1152
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	0.0	18.2	20.1	17.6	15.5	10.2	12.9	8.7	9.6	12.7	8.4
Incr Delay (d2), s/veh	0.2	0.0	1.1	4.5	0.6	0.3	0.1	1.4	0.1	0.2	1.9	0.1
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	0.4	0.0	0.6	0.7	0.5	0.4	0.1	2.9	0.3	0.2	3.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.3	0.0	19.2	24.6	18.2	15.8	10.3	14.3	8.8	9.8	14.5	8.4
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		106			159			512			615	
Approach Delay, s/veh		18.0			19.8			13.4			13.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	19.2	7.6	9.6	6.4	20.2	7.1	10.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.8	10.6	3.4	3.4	2.5	12.3	3.0	3.1
Green Ext Time (p_c), s	0.0	2.5	0.0	0.2	0.0	2.9	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	14.5
HCM 7th LOS	B

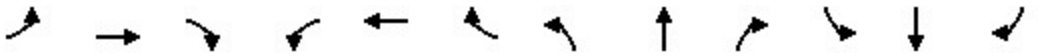
3: S Green Street & Northfield Drive

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	62	59	52	48	27	421	64	54	495	66
v/c Ratio	0.12	0.23	0.22	0.18	0.10	0.05	0.46	0.05	0.09	0.45	0.05
Control Delay (s/veh)	18.5	21.5	29.8	28.9	2.2	8.1	18.1	1.3	8.0	15.2	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.5	21.5	29.8	28.9	2.2	8.1	18.1	1.3	8.0	15.2	1.4
Queue Length 50th (ft)	11	12	19	17	0	4	131	0	9	109	0
Queue Length 95th (ft)	37	49	60	54	10	16	248	10	26	297	11
Internal Link Dist (ft)		525		948			865			655	
Turn Bay Length (ft)	340		300		300	275		415	415		585
Base Capacity (vph)	459	735	371	767	577	619	1124	1118	635	1128	1247
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.08	0.16	0.07	0.08	0.04	0.37	0.06	0.09	0.44	0.05

Intersection Summary

APPENDIX D

OPENING YEAR NO BUILD 2026 PEAK HOUR CAPACITY ANALYSIS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	57	31	26	12	37	5	341	52	38	355	27
Future Volume (veh/h)	52	57	31	26	12	37	5	341	52	38	355	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1811	1900	1900	1781	1781	1856	1604	1841	1841	1826	1856	1737
Adj Flow Rate, veh/h	58	63	34	29	13	41	6	379	58	42	394	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	0	0	8	8	3	20	4	4	5	3	11
Cap, veh/h	413	154	83	58	192	242	313	533	506	358	609	570
Arrive On Green	0.06	0.13	0.13	0.03	0.11	0.11	0.01	0.29	0.29	0.05	0.33	0.33
Sat Flow, veh/h	1725	1161	626	1697	1781	1572	1527	1841	1560	1739	1856	1472
Grp Volume(v), veh/h	58	0	97	29	13	41	6	379	58	42	394	30
Grp Sat Flow(s),veh/h/ln	1725	0	1787	1697	1781	1572	1527	1841	1560	1739	1856	1472
Q Serve(g_s), s	1.2	0.0	2.0	0.7	0.3	0.9	0.1	7.4	1.1	0.7	7.3	0.5
Cycle Q Clear(g_c), s	1.2	0.0	2.0	0.7	0.3	0.9	0.1	7.4	1.1	0.7	7.3	0.5
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	413	0	237	58	192	242	313	533	506	358	609	570
V/C Ratio(X)	0.14	0.00	0.41	0.50	0.07	0.17	0.02	0.71	0.11	0.12	0.65	0.05
Avail Cap(c_a), veh/h	739	0	888	421	885	854	680	1372	1216	709	1383	1184
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	0.0	16.0	19.1	16.1	14.8	10.4	12.8	9.5	9.8	11.5	7.7
Incr Delay (d2), s/veh	0.2	0.0	1.1	6.4	0.1	0.3	0.0	1.8	0.1	0.1	1.2	0.0
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	0.4	0.0	0.8	0.3	0.1	0.3	0.0	2.5	0.3	0.2	2.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.6	0.0	17.2	25.5	16.3	15.1	10.4	14.6	9.6	9.9	12.7	7.7
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		155			83			443			466	
Approach Delay, s/veh		16.2			18.9			13.9			12.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	16.7	6.4	10.3	5.3	18.2	7.4	9.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.7	9.4	2.7	4.0	2.1	9.3	3.2	2.9
Green Ext Time (p_c), s	0.0	2.2	0.0	0.4	0.0	2.3	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	13.8
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	2	398	3	4	409
Future Vol, veh/h	1	2	398	3	4	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	65	100	-
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	1	2	433	3	4	445

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	886	433	0	0	436	0
Stage 1	433	-	-	-	-	-
Stage 2	453	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	315	623	-	-	1124	-
Stage 1	654	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	314	623	-	-	1124	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	638	-	-	-	-	-

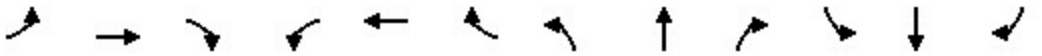
Approach	WB	NB	SB
HCM Control Delay, s/v	12.73	0	0.08
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	469	1124	-
HCM Lane V/C Ratio	-	-	0.007	0.004	-
HCM Control Delay (s/veh)	-	-	12.7	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

3: S Green Street & Northfield Drive

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	58	97	29	13	41	6	379	58	42	394	30
v/c Ratio	0.13	0.29	0.11	0.04	0.08	0.01	0.42	0.05	0.07	0.37	0.02
Control Delay (s/veh)	16.2	21.7	28.7	27.3	1.4	8.4	17.6	1.2	8.5	12.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.2	21.7	28.7	27.3	1.4	8.4	17.6	1.2	8.5	12.7	0.0
Queue Length 50th (ft)	14	22	9	4	0	1	115	0	7	81	0
Queue Length 95th (ft)	44	71	36	21	6	7	225	9	23	226	0
Internal Link Dist (ft)		525		948			318			655	
Turn Bay Length (ft)	340		300		300	200			415		585
Base Capacity (vph)	539	851	388	817	603	592	1228	1151	636	1254	1327
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.11	0.07	0.02	0.07	0.01	0.31	0.05	0.07	0.31	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	33	25	56	49	45	25	400	61	52	472	63
Future Volume (veh/h)	41	33	25	56	49	45	25	400	61	52	472	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1752	1900	1841	1900	1870	1870	1781	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	44	35	27	60	52	48	27	426	65	55	502	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	0	4	0	2	2	8	2	2	2	2	3
Cap, veh/h	352	104	80	107	217	272	308	612	612	379	657	626
Arrive On Green	0.05	0.10	0.10	0.06	0.12	0.12	0.03	0.33	0.33	0.06	0.35	0.35
Sat Flow, veh/h	1668	995	767	1810	1870	1585	1697	1870	1585	1781	1870	1572
Grp Volume(v), veh/h	44	0	62	60	52	48	27	426	65	55	502	67
Grp Sat Flow(s),veh/h/ln	1668	0	1762	1810	1870	1585	1697	1870	1585	1781	1870	1572
Q Serve(g_s), s	1.0	0.0	1.4	1.4	1.1	1.1	0.5	8.7	1.2	0.9	10.5	1.2
Cycle Q Clear(g_c), s	1.0	0.0	1.4	1.4	1.1	1.1	0.5	8.7	1.2	0.9	10.5	1.2
Prop In Lane	1.00		0.44	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	0	184	107	217	272	308	612	612	379	657	626
V/C Ratio(X)	0.12	0.00	0.34	0.56	0.24	0.18	0.09	0.70	0.11	0.15	0.76	0.11
Avail Cap(c_a), veh/h	652	0	799	410	849	807	639	1273	1172	684	1273	1144
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	18.3	20.2	17.7	15.6	10.2	12.9	8.7	9.6	12.7	8.3
Incr Delay (d2), s/veh	0.2	0.0	1.1	4.6	0.6	0.3	0.1	1.4	0.1	0.2	1.9	0.1
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	0.4	0.0	0.6	0.7	0.5	0.4	0.1	3.0	0.3	0.3	3.5	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.5	0.0	19.4	24.7	18.3	15.9	10.4	14.3	8.7	9.8	14.6	8.4
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		106			160			518			624	
Approach Delay, s/veh		18.2			20.0			13.4			13.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	19.4	7.6	9.6	6.4	20.5	7.1	10.1
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.9	10.7	3.4	3.4	2.5	12.5	3.0	3.1
Green Ext Time (p_c), s	0.0	2.5	0.0	0.2	0.0	3.0	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	14.6
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	486	2	2	550
Future Vol, veh/h	3	4	486	2	2	550
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	65	100	-
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	3	4	528	2	2	598

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1130	528	0	0	530	0
Stage 1	528	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	225	550	-	-	1037	-
Stage 1	591	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	225	550	-	-	1037	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	15.85	0	0.03
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	339	1037	-
HCM Lane V/C Ratio	-	-	0.022	0.002	-
HCM Control Delay (s/veh)	-	-	15.8	8.5	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

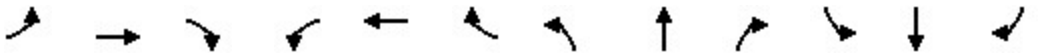
3: S Green Street & Northfield Drive

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	62	60	52	48	27	426	65	55	502	67
v/c Ratio	0.12	0.23	0.22	0.18	0.10	0.05	0.46	0.06	0.10	0.46	0.05
Control Delay (s/veh)	18.6	21.6	30.0	29.0	2.2	8.0	18.1	1.4	8.0	15.2	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.6	21.6	30.0	29.0	2.2	8.0	18.1	1.4	8.0	15.2	1.4
Queue Length 50th (ft)	11	12	20	17	0	4	133	0	9	111	0
Queue Length 95th (ft)	37	50	61	54	10	16	251	11	27	302	11
Internal Link Dist (ft)		525		948			318			655	
Turn Bay Length (ft)	340		300		300	200			415		585
Base Capacity (vph)	457	732	370	764	575	616	1122	1120	633	1127	1248
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.08	0.16	0.07	0.08	0.04	0.38	0.06	0.09	0.45	0.05

Intersection Summary

APPENDIX F

FORECASTED 2026 BUILD (WITH DEVELOPMENT) CAPACITY CALCULATIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	60	31	30	12	37	9	354	52	46	363	27
Future Volume (veh/h)	52	60	31	30	12	37	9	354	52	46	363	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1811	1900	1900	1781	1781	1856	1604	1841	1841	1826	1856	1737
Adj Flow Rate, veh/h	58	67	34	33	13	41	10	393	58	51	403	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	0	0	8	8	3	20	4	4	5	3	11
Cap, veh/h	407	152	77	65	191	253	319	545	521	364	624	582
Arrive On Green	0.06	0.13	0.13	0.04	0.11	0.11	0.01	0.30	0.30	0.05	0.34	0.34
Sat Flow, veh/h	1725	1188	603	1697	1781	1572	1527	1841	1560	1739	1856	1472
Grp Volume(v), veh/h	58	0	101	33	13	41	10	393	58	51	403	30
Grp Sat Flow(s),veh/h/ln	1725	0	1791	1697	1781	1572	1527	1841	1560	1739	1856	1472
Q Serve(g_s), s	1.2	0.0	2.2	0.8	0.3	0.9	0.2	7.9	1.1	0.8	7.6	0.5
Cycle Q Clear(g_c), s	1.2	0.0	2.2	0.8	0.3	0.9	0.2	7.9	1.1	0.8	7.6	0.5
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	407	0	229	65	191	253	319	545	521	364	624	582
V/C Ratio(X)	0.14	0.00	0.44	0.51	0.07	0.16	0.03	0.72	0.11	0.14	0.65	0.05
Avail Cap(c_a), veh/h	724	0	868	411	863	846	669	1338	1193	692	1348	1156
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	16.6	19.5	16.6	14.9	10.3	13.0	9.5	9.8	11.6	7.7
Incr Delay (d2), s/veh	0.2	0.0	1.3	6.1	0.1	0.3	0.0	1.8	0.1	0.2	1.1	0.0
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	0.4	0.0	0.8	0.4	0.1	0.3	0.0	2.6	0.3	0.2	2.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.0	0.0	18.0	25.6	16.7	15.2	10.4	14.8	9.6	10.0	12.7	7.7
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		159			87			461			484	
Approach Delay, s/veh		16.9			19.4			14.1			12.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	17.2	6.6	10.3	5.5	18.9	7.4	9.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	2.8	9.9	2.8	4.2	2.2	9.6	3.2	2.9
Green Ext Time (p_c), s	0.0	2.3	0.0	0.4	0.0	2.3	0.0	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	14.1
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	34	382	33	31	393
Future Vol, veh/h	30	34	382	33	31	393
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	65	100	-
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	33	37	415	36	34	427

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	910	415	0	0	451	0
Stage 1	415	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	305	637	-	-	1109	-
Stage 1	666	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	296	637	-	-	1109	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	594	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	15.46	0	0.61
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	413	1109	-
HCM Lane V/C Ratio	-	-	0.168	0.03	-
HCM Control Delay (s/veh)	-	-	15.5	8.3	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	16	0	79	0	9
Future Vol, veh/h	130	16	0	79	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	141	17	0	86	0	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	79
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	-	0	965
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	965
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.77
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	965	-	-	-
HCM Lane V/C Ratio	0.01	-	-	-
HCM Control Delay (s/veh)	8.8	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	0	0	0	0	0
Future Vol, veh/h	9	0	0	0	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	-	-	-	-	-	-
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	10	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	-	-	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	-	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	-	-
Pot Cap-1 Maneuver	1022	0	0	-	-	0
Stage 1	1022	0	0	-	-	0
Stage 2	-	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

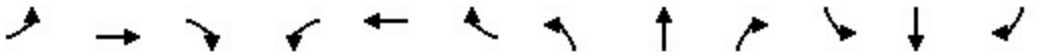
Approach	EB	NB	SB
HCM Control Delay, s/v	8.56	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	1022	-
HCM Lane V/C Ratio	-	0.01	-
HCM Control Delay (s/veh)	-	8.6	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0	-

3: S Green Street & Northfield Drive

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	58	101	33	13	41	10	393	58	51	403	30
v/c Ratio	0.13	0.33	0.14	0.04	0.08	0.02	0.47	0.05	0.10	0.37	0.02
Control Delay (s/veh)	16.8	24.1	29.9	28.0	1.3	8.5	20.1	1.2	8.8	13.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.8	24.1	29.9	28.0	1.3	8.5	20.1	1.2	8.8	13.3	0.0
Queue Length 50th (ft)	14	24	11	4	0	2	122	0	9	85	0
Queue Length 95th (ft)	45	77	41	21	5	9	238	9	26	235	0
Internal Link Dist (ft)		525		267			318			655	
Turn Bay Length (ft)	340		300			200			415		585
Base Capacity (vph)	508	745	337	711	574	575	1063	1034	581	1099	1276
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.14	0.10	0.02	0.07	0.02	0.37	0.06	0.09	0.37	0.02

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	37	25	59	49	45	28	409	61	58	478	63
Future Volume (veh/h)	41	37	25	59	49	45	28	409	61	58	478	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1752	1900	1841	1900	1870	1870	1781	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	44	39	27	63	52	48	30	435	65	62	509	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	0	4	0	2	2	8	2	2	2	2	3
Cap, veh/h	351	108	75	110	219	281	309	614	617	380	662	630
Arrive On Green	0.05	0.10	0.10	0.06	0.12	0.12	0.03	0.33	0.33	0.06	0.35	0.35
Sat Flow, veh/h	1668	1046	724	1810	1870	1585	1697	1870	1585	1781	1870	1572
Grp Volume(v), veh/h	44	0	66	63	52	48	30	435	65	62	509	67
Grp Sat Flow(s),veh/h/ln	1668	0	1770	1810	1870	1585	1697	1870	1585	1781	1870	1572
Q Serve(g_s), s	1.0	0.0	1.6	1.5	1.1	1.1	0.5	9.1	1.2	1.0	10.8	1.2
Cycle Q Clear(g_c), s	1.0	0.0	1.6	1.5	1.1	1.1	0.5	9.1	1.2	1.0	10.8	1.2
Prop In Lane	1.00		0.41	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	351	0	183	110	219	281	309	614	617	380	662	630
V/C Ratio(X)	0.13	0.00	0.36	0.57	0.24	0.17	0.10	0.71	0.11	0.16	0.77	0.11
Avail Cap(c_a), veh/h	646	0	792	405	837	804	630	1255	1160	672	1255	1129
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	18.7	20.4	17.9	15.6	10.3	13.1	8.7	9.7	12.8	8.4
Incr Delay (d2), s/veh	0.2	0.0	1.2	4.7	0.6	0.3	0.1	1.5	0.1	0.2	1.9	0.1
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	0.4	0.0	0.6	0.7	0.5	0.4	0.1	3.1	0.3	0.3	3.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.7	0.0	19.9	25.1	18.5	15.9	10.5	14.7	8.8	9.9	14.8	8.5
LnGrp LOS	B		B	C	B	B	B	B	A	A	B	A
Approach Vol, veh/h		110			163			530			638	
Approach Delay, s/veh		18.6			20.3			13.7			13.6	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	19.7	7.7	9.6	6.6	20.8	7.1	10.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	30.0	10.0	20.0	10.0	30.0	10.0	20.0
Max Q Clear Time (g_c+I1), s	3.0	11.1	3.5	3.6	2.5	12.8	3.0	3.1
Green Ext Time (p_c), s	0.1	2.6	0.1	0.2	0.0	3.0	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	14.8
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	32	470	30	30	533
Future Vol, veh/h	32	32	470	30	30	533
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	-	-	-	65	100	-
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	35	35	511	33	33	579

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1155	511	0	0	543	0
Stage 1	511	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	218	563	-	-	1025	-
Stage 1	602	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	211	563	-	-	1025	-
Mov Cap-2 Maneuver	211	-	-	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	506	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	20.16	0	0.46
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	306	1025	-
HCM Lane V/C Ratio	-	-	0.227	0.032	-
HCM Control Delay (s/veh)	-	-	20.2	8.6	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	140	15	0	108	0	8
Future Vol, veh/h	140	15	0	108	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	152	16	0	117	0	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	84
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	-	0	958
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	958
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	8.79
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	958	-	-	-
HCM Lane V/C Ratio	0.009	-	-	-
HCM Control Delay (s/veh)	8.8	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	0	0	0	0	0
Future Vol, veh/h	8	0	0	0	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	-	-	-	-	-	-
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	9	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	-	-	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	-	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	-	-	-	-
Pot Cap-1 Maneuver	1022	0	0	-	-	0
Stage 1	1022	0	0	-	-	0
Stage 2	-	0	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.55	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	1022	-
HCM Lane V/C Ratio	-	0.009	-
HCM Control Delay (s/veh)	-	8.6	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	66	63	52	48	30	435	65	62	509	67
v/c Ratio	0.12	0.25	0.24	0.18	0.10	0.06	0.47	0.06	0.11	0.46	0.05
Control Delay (s/veh)	18.8	22.2	30.5	29.2	2.2	8.1	18.4	1.4	8.1	15.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	18.8	22.2	30.5	29.2	2.2	8.1	18.4	1.4	8.1	15.4	1.5
Queue Length 50th (ft)	11	13	21	17	0	5	139	0	11	115	0
Queue Length 95th (ft)	37	53	64	54	10	17	260	11	29	310	11
Internal Link Dist (ft)		525		267			318			655	
Turn Bay Length (ft)	340		300			200			415		585
Base Capacity (vph)	452	728	365	755	573	607	1111	1118	626	1121	1246
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.09	0.17	0.07	0.08	0.05	0.39	0.06	0.10	0.45	0.05

Intersection Summary