

1600 S. Federal Highway (Mixed-Use)

1600 S. Federal Highway
Pompano Beach, Florida

TRAFFIC STATEMENT

prepared for:
1600 Federal LLC

KBP CONSULTING, INC.

DRC
January 2025

PZ24-12000027

03/05/2025

1600 S. Federal Highway (Mixed-Use)

1600 S. Federal Highway

Pompano Beach, Florida

Traffic Statement

January 2025

Prepared for:

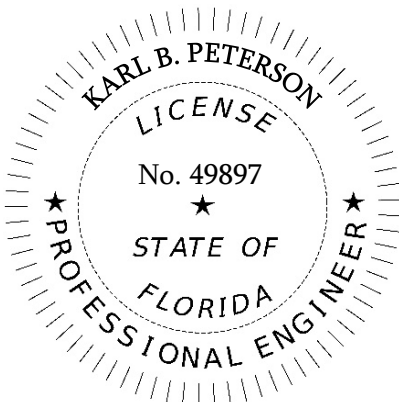
1600 Federal LLC

Prepared by:

KBP Consulting, Inc.

APPROVED BY:

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AND SEALED BY:



ON THE DATE ADJACENT TO THE SEAL.
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DRC

PZ24-12000027

03/05/2025

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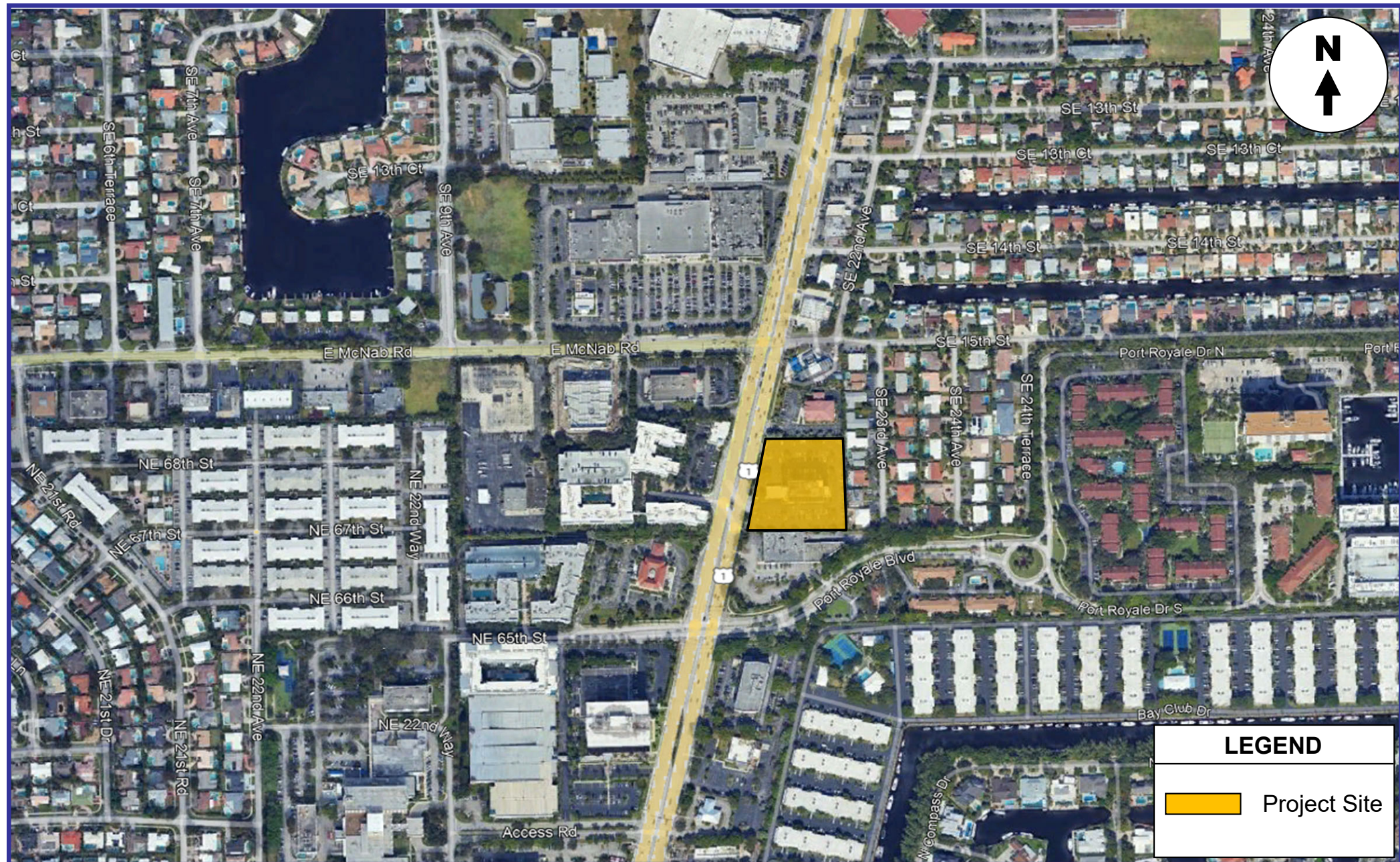
INTRODUCTION

1600 S. Federal Highway is a proposed mixed-use development to be located on the east side of S. Federal Highway (US 1 / State Road 5) between NE 65th Street / Port Royale Boulevard and McNab Road / SE 15th Street in Pompano Beach, Broward County, Florida. More specifically, the subject site is located at 1600 S. Federal Highway and the Broward County Parcel ID number is 4942 12 00 0070. The location of this project site is illustrated in Figure 1 on the following page.

KBP Consulting, Inc. has been retained by 1600 Federal LLC to prepare a traffic statement in connection with the existing and proposed development on this site. This study addresses the existing and anticipated trip generation characteristics of the subject mixed-use development, the projected turning movement volumes at the project driveways on S. Federal Highway and the operational characteristics of the project driveways and the intersection at S. Federal Highway and McNab Road.

This traffic study is divided into seven (7) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Analyses
7. Summary & Conclusions



INVENTORY

Existing Land Uses and Access

The subject site has a land area of approximately 2.35 acres (+/- 102,393 square feet) and is currently developed with an 11-story office building that includes a drive-in bank (BrightStar Credit Union) on the first floor. The area of the bank / credit union is approximately 3,250 square feet and the area of the office space is approximately 75,484 square feet. The site is served by two (2) driveways on S. Federal Highway. One (1) driveway is located near the southern boundary of the site and is limited to left-turns in, right-turns in and right-turns out. The other driveway is located near the northern boundary of the site and is limited to right-turns in and right-turns out. A site survey is presented in Appendix A.

Proposed Land Uses and Access

The proposed development on this site includes 132 dwelling units in a 10-story building and 3,650 square feet of commercial / retail space on the ground floor adjacent to S. Federal Highway. Vehicular access to the site and the existing office building (with drive-in bank / credit union) will be modified. The existing southern driveway will remain in its current location; however, it will be converted to a left-turn in / right-turn in only driveway. The northern driveway will be relocated approximately 80 feet to the south and will be converted to a right-turn out only driveway. Appendix B contains the preliminary site plan for this mixed-use development and the buildout year is projected to be 2026.

EXISTING CONDITIONS

This section of the report addresses the transportation system located in the immediate vicinity of the 1600 S. Federal Highway (Mixed-Use) site.

Roadway System

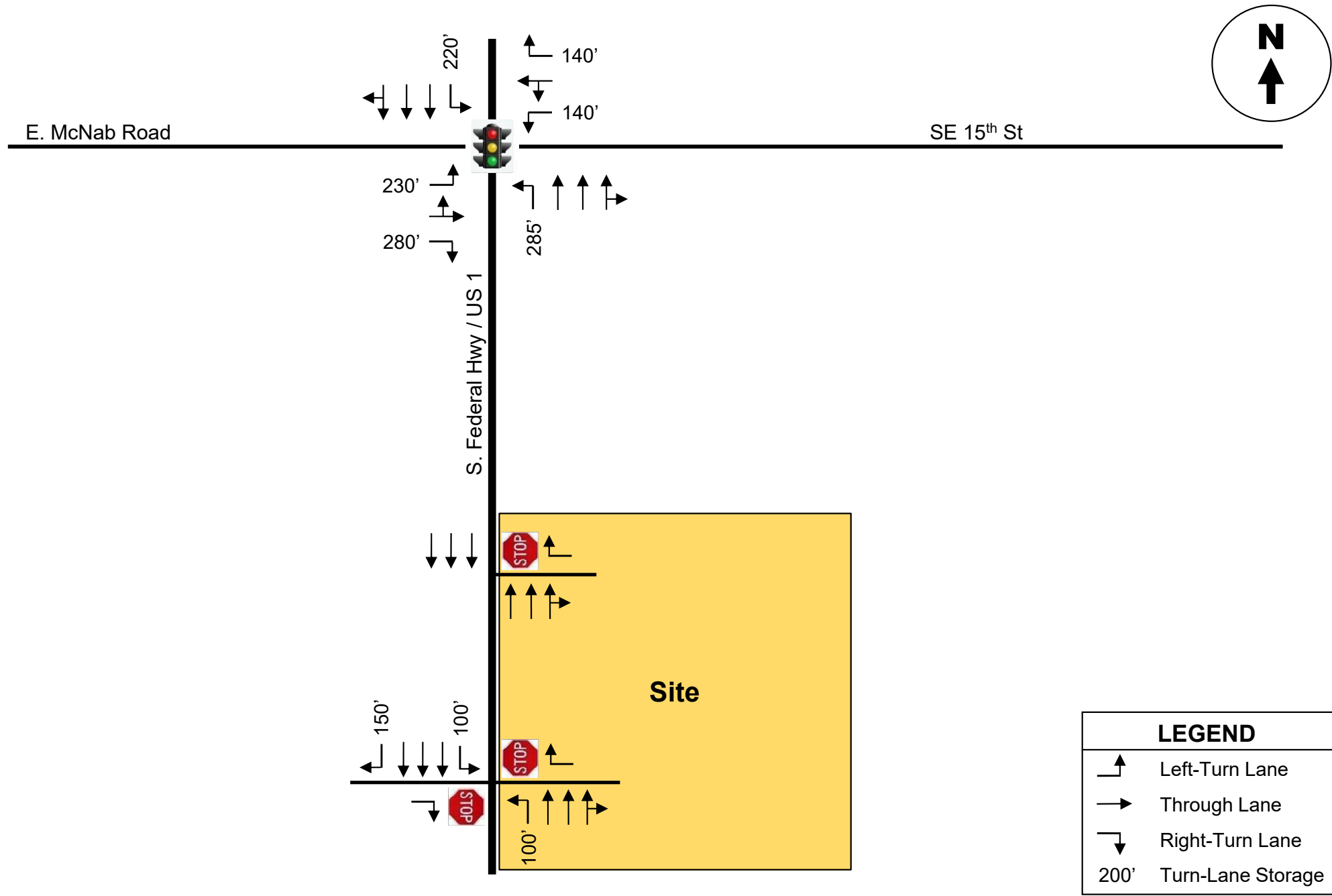
S. Federal Highway (US 1 / State Road 5) is located along the western boundary of the site. In this area S. Federal Highway is a six-lane divided state-maintained principal arterial roadway with three (3) through lanes in the northbound direction and three (3) through lanes in the southbound direction. The posted speed limit along this section of S. Federal Highway is 45 miles per hour (mph) and the Florida Department of Transportation (FDOT) access classification is “5 – Restrictive”.

Study Intersections

One (1) nearby intersection and the project driveways were identified as the locations to be evaluated as part of this analysis. The study intersection is the first signalized intersection to the north at S. Federal Highway and McNab Road / SE 15th Street. Figure 2 on the following page depicts the existing lane geometry of the study intersections identified for analysis purposes.

Transit Service

Broward County Transit (BCT) provides bus service in the S. Federal Highway corridor. In this area, Route 10 and Route 62 provide transit service with bus stops immediately to the north and south of the subject site.



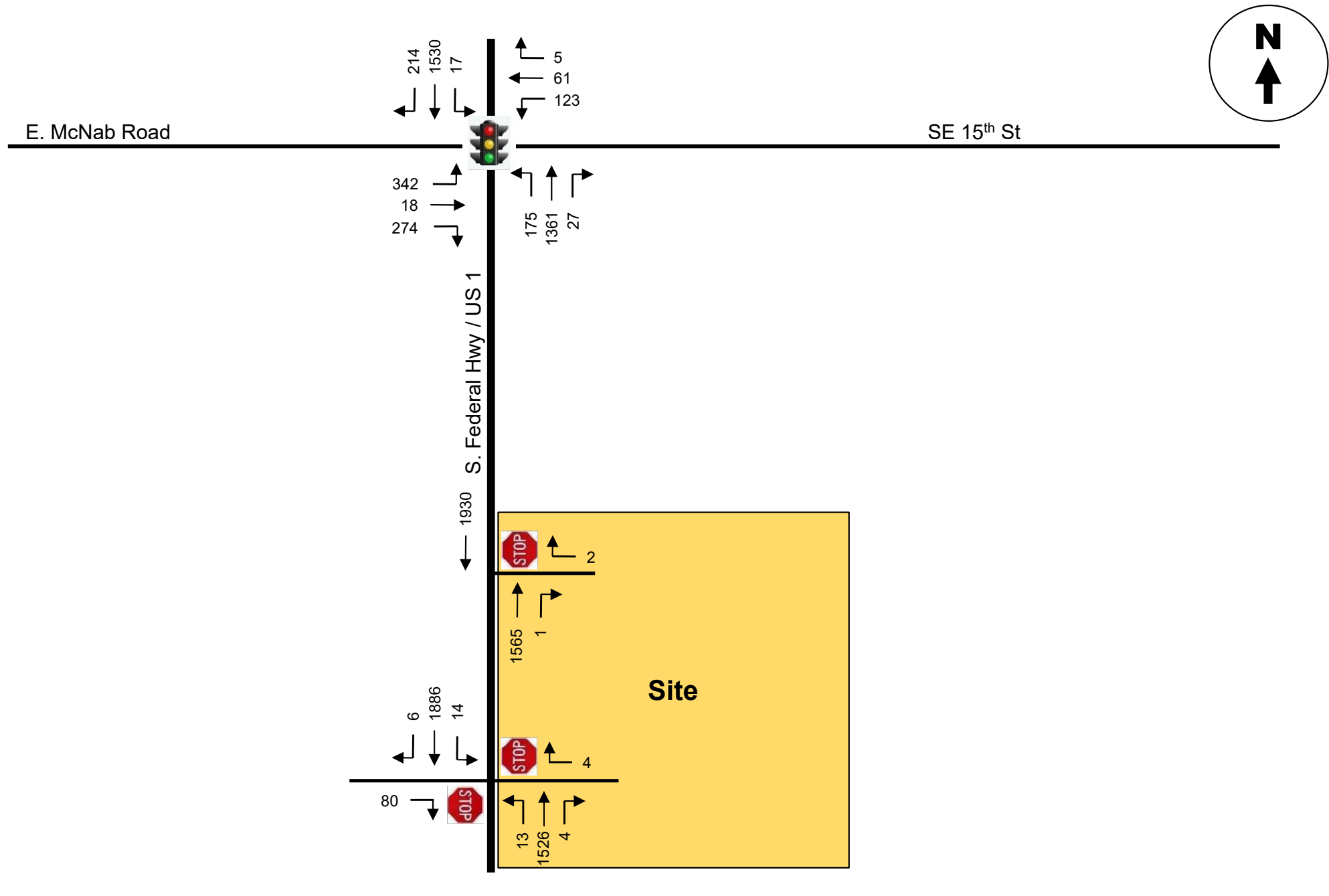
TRAFFIC COUNTS

KBP Consulting, Inc., in association with Video Data Solutions, Inc., collected traffic data at the following locations:

- **Intersections**

- S. Federal Highway and McNab Road / SE 15th Street
- S. Federal Highway and Site Driveway (North)
- S. Federal Highway and Site Driveway (South)

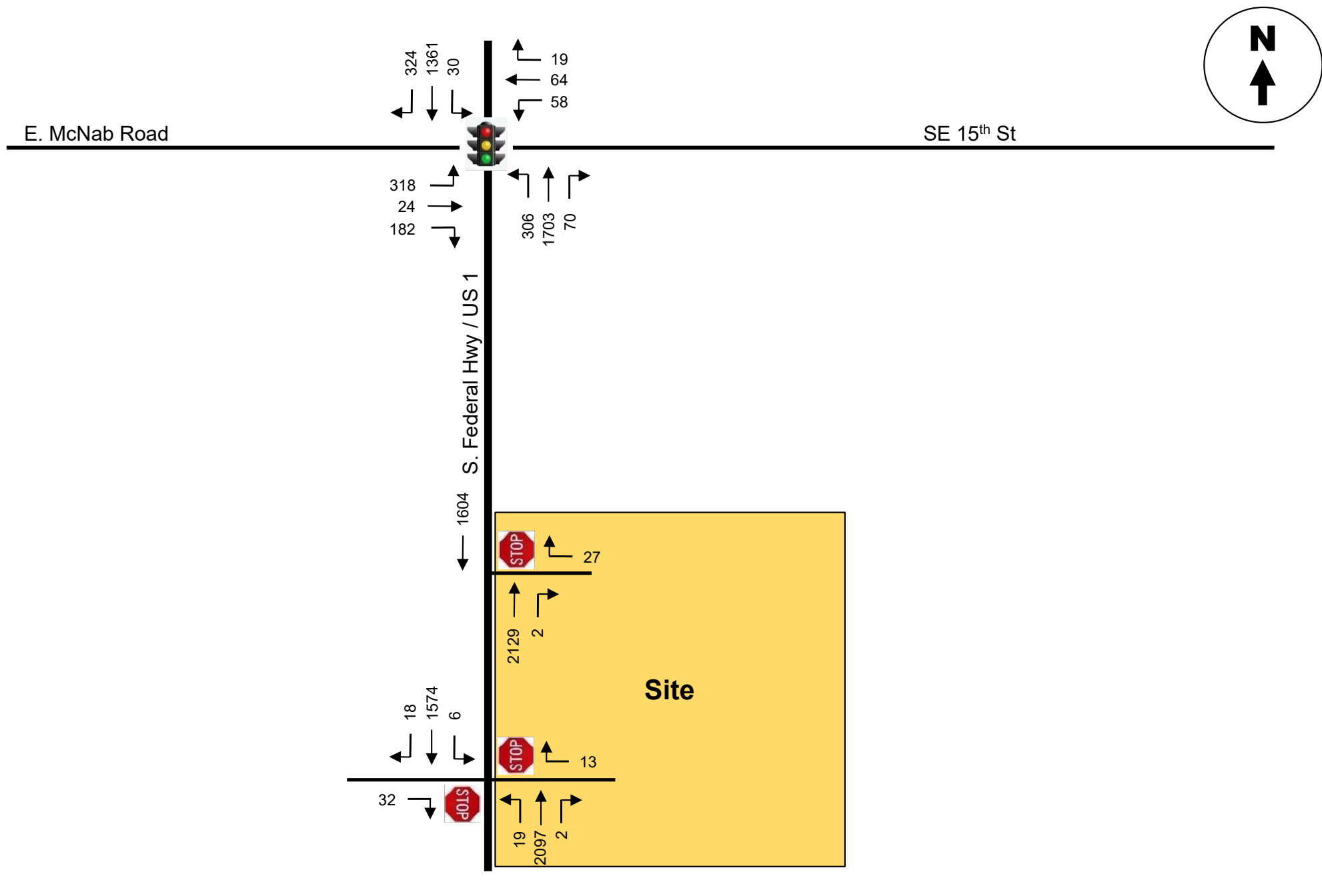
The intersection turning movement counts were collected on Tuesday, September 24, 2024, during the AM peak period (7:00 AM to 9:00 AM) and the PM peak period (4:00 PM to 6:00 PM). Figures 3 and 4 summarize the results of this traffic data collection effort. Appendix C contains the traffic data as collected in the field. Given that these counts were collected during late-September, a peak season conversion factor of 1.05 has been applied. (Please see Appendix D for the latest peak season factor category report published by the Florida Department of Transportation (FDOT) for this area of Broward County.)



Existing (2024) AM Peak Hour Traffic Counts

Source: Video Data Solutions, Inc.
Adjusted for Average Peak Season Conditions

FIGURE 3
1600 S. Federal Highway
Pompano Beach, Florida



Existing (2024) PM Peak Hour Traffic Counts

Source: Video Data Solutions, Inc.
Adjusted for Average Peak Season Conditions

FIGURE 4
1600 S. Federal Highway
Pompano Beach, Florida

TRIP GENERATION

A trip generation analysis has been conducted for the subject mixed-use development. The analysis was performed using the trip generation rates and equations published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (11th Edition)*. According to the referenced ITE manual, the most appropriate land use categories and corresponding trip generation rate for the proposed development are as follows:

ITE Land Use #221 – Multifamily Housing (Mid-Rise)

- Weekday: $T = 4.77 (X) - 46.46$
where T = number of trips and X = number of dwelling units
- AM Peak Hour: $T = 0.44 (X) - 11.61$ (23% in / 77% out)
- PM Peak Hour: $T = 0.39 (X) + 0.34$ (61% in / 39% out)

ITE Land Use #822 – Strip Retail Plaza (<40k)

- Weekday: $T = 42.20 (X) + 229.68$
where T = number of trips and X = 1,000 square feet of gross leasable area
- AM Peak Hour: $T = 2.36 (X)$ (60% in / 40% out)
- PM Peak Hour: $T = 6.59 (X)$ (50% in / 50% out)

Relevant excerpts from the referenced ITE manual are presented in Appendix E of this report. Utilizing the above-listed trip generation rates and equations from the referenced ITE document, a trip generation analysis was undertaken for the proposed mixed-use development. The results of this effort are documented in Table 1 below.

Table 1 1600 S. Federal Highway Trip Generation Summary Pompano Beach, Florida								
Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Proposed								
Multifamily Housing (Mid-Rise)	132 DU	583	11	35	46	32	20	52
Strip Retail Plaza (<40k)	3,650 SF	384	5	4	9	12	12	24
Total:		967	16	39	55	44	32	76

Source: KBP Consulting, Inc., January 2025.

Institute of Transportation Engineers (ITE) *Trip Generation Manual (11th Edition)*.

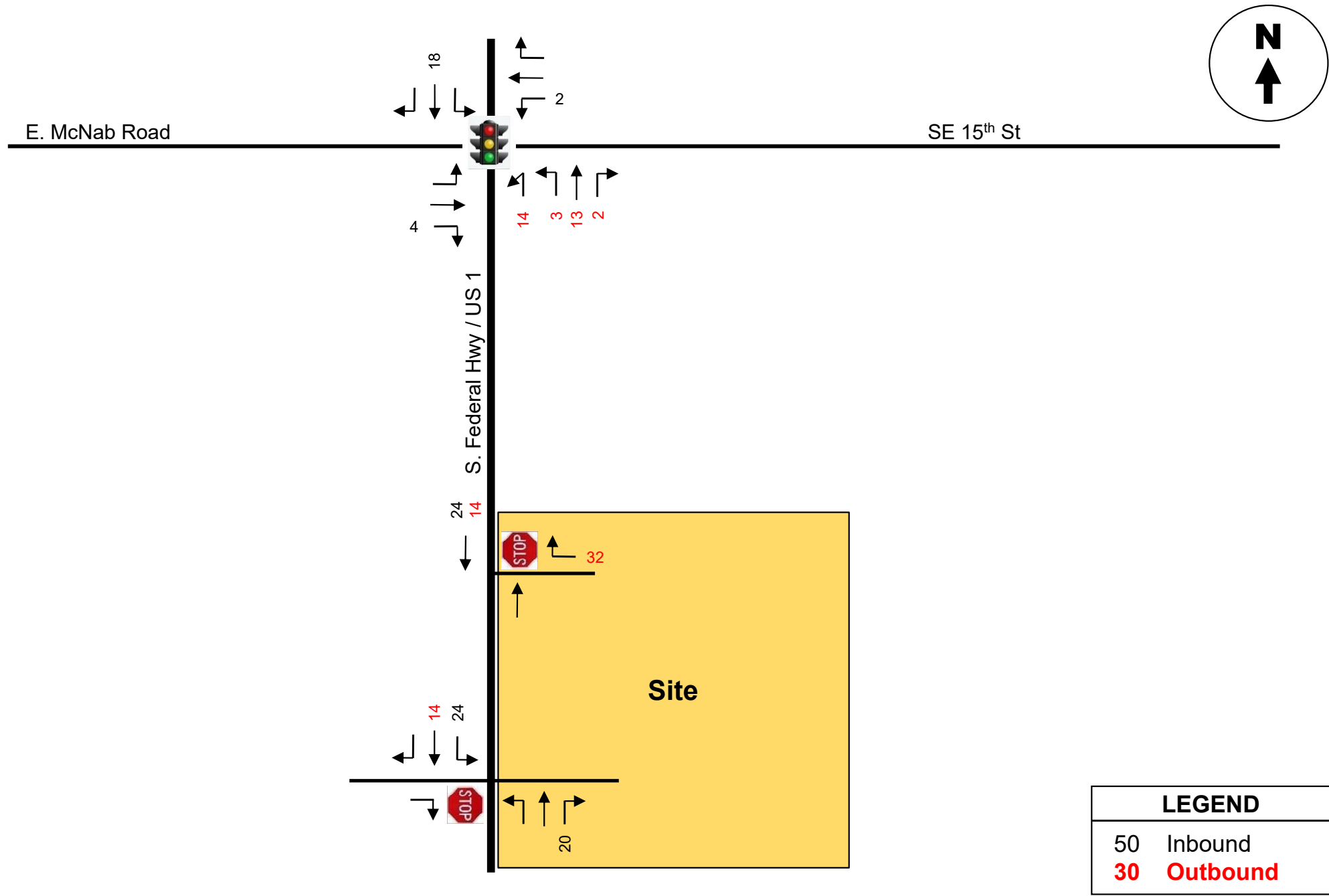
As indicated in Table 1 on the previous page, the proposed residential and retail development on the 1600 S. Federal Highway site is anticipated to generate 967 daily vehicle trips, 55 AM peak hour vehicle trips (16 inbound and 39 outbound) and 76 PM peak hour vehicle trips (44 inbound and 32 outbound).

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the 1600 S. Federal Highway mixed-use project was developed based upon knowledge of the study area, examination of the surrounding roadway network characteristics, review of current traffic volumes / patterns, and existing land use patterns. The resulting trip distribution for the project trips is presented in Figure 5. The anticipated AM and PM peak hour trip assignment for the project is based upon the estimated trip distribution patterns and presented in Figures 6 and 7.







TRAFFIC IMPACT ANALYSES

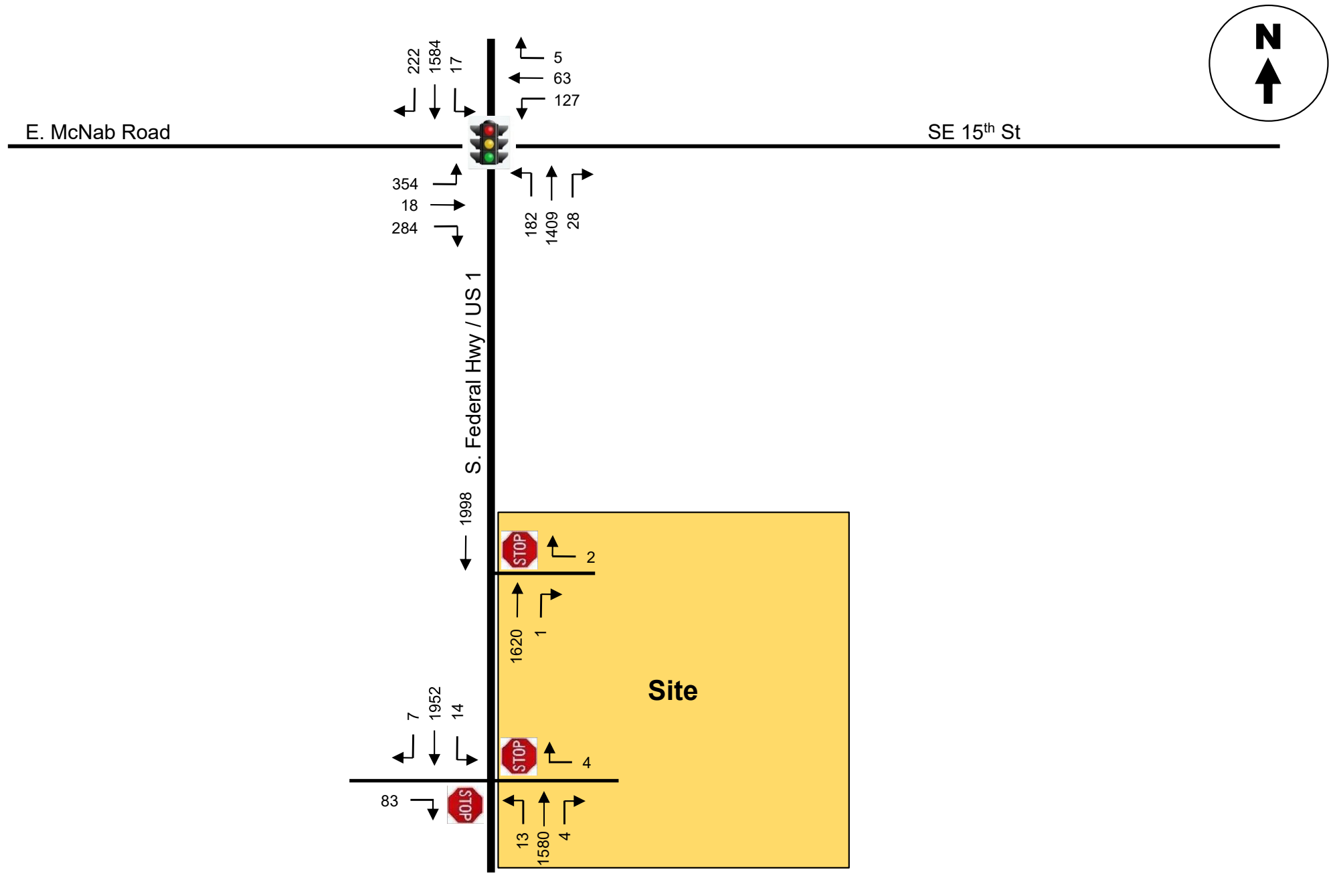
This section of the study is divided into two (2) primary parts. The first part of this section involves the development of the future build-out year (2026) traffic volumes for the study area. The second part of this section includes level-of-service analyses for existing and future conditions and turn lane analyses.

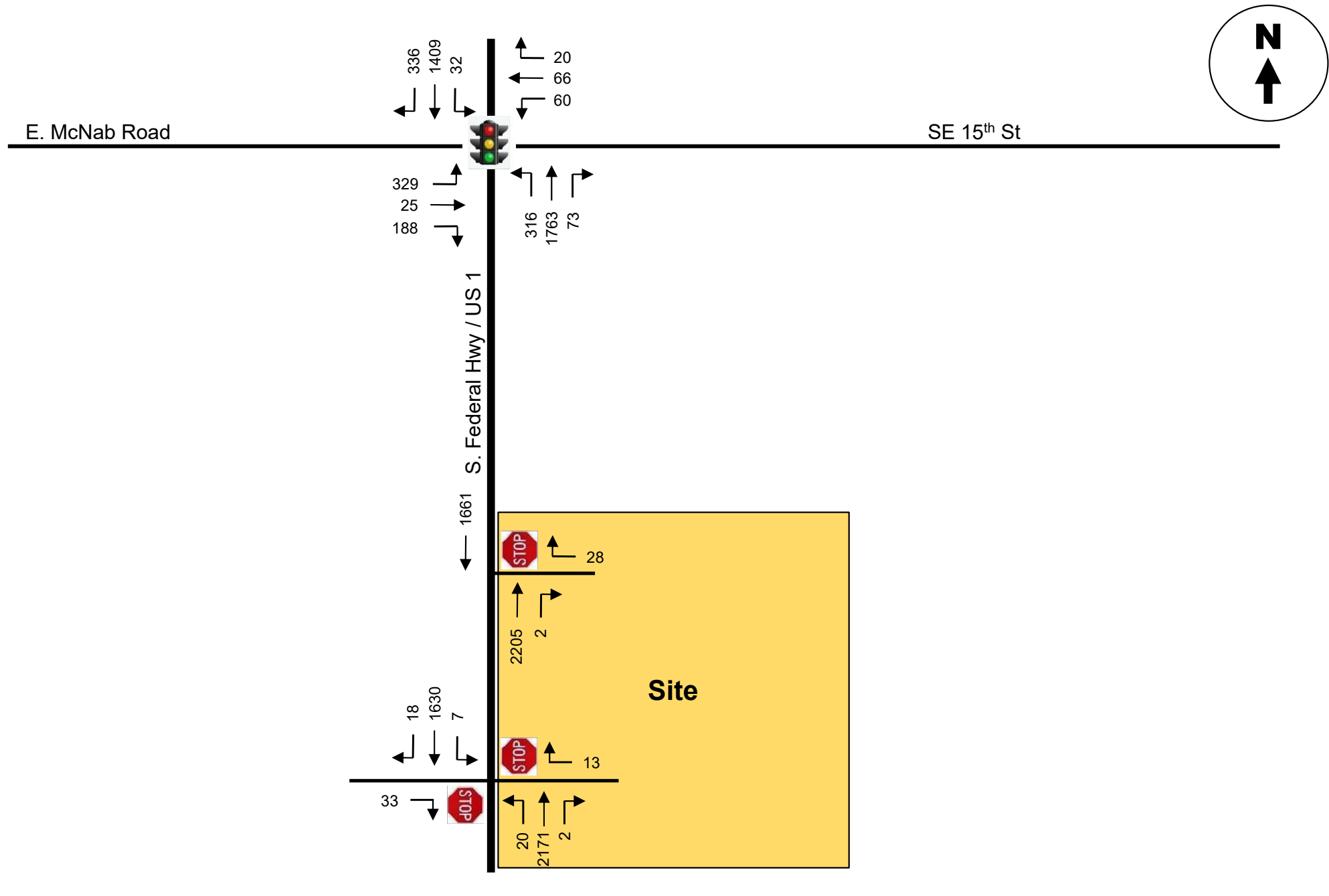
Future Conditions Traffic Volumes

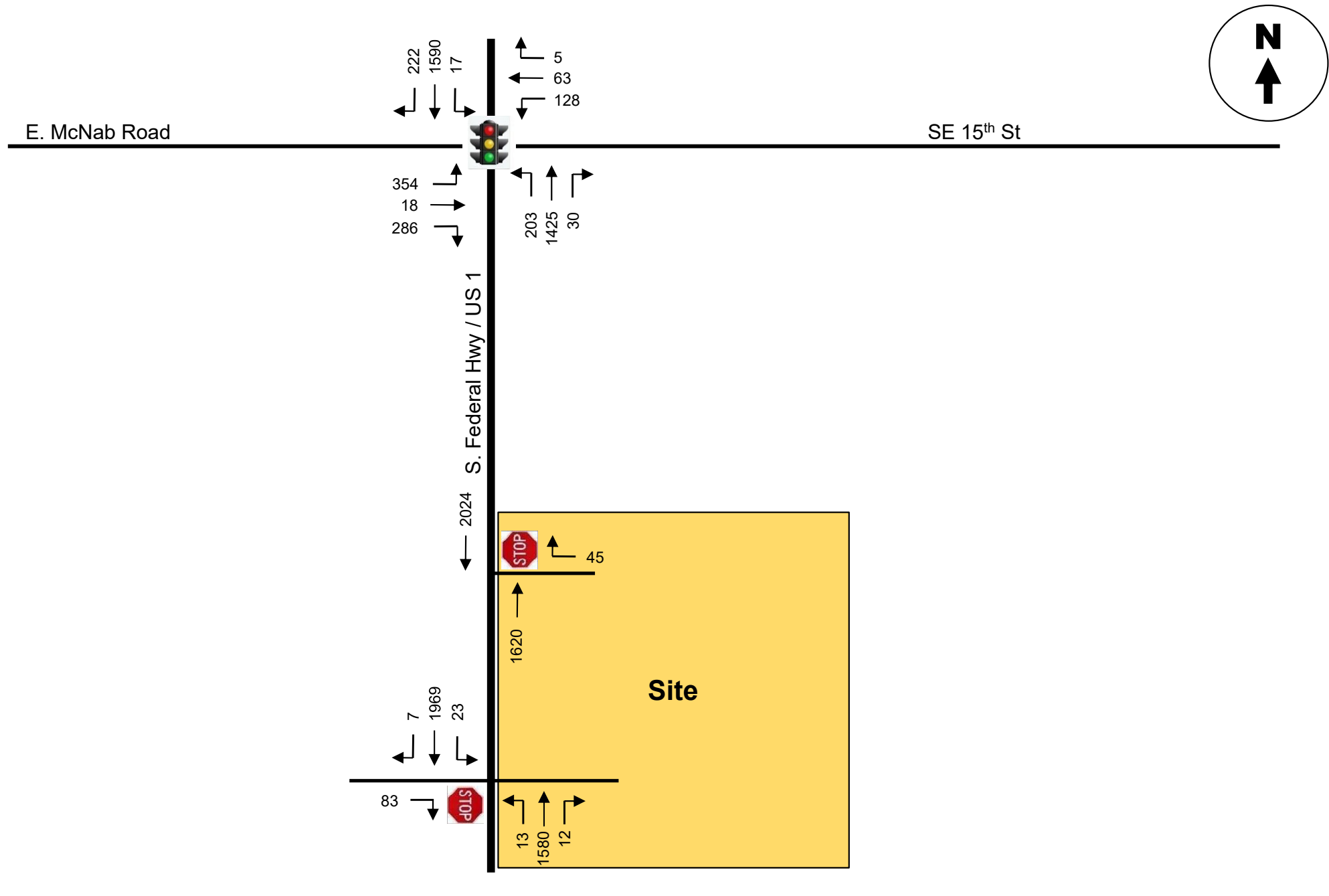
Future, build-out year (2026) traffic volumes were developed for the project study area in the following manner:

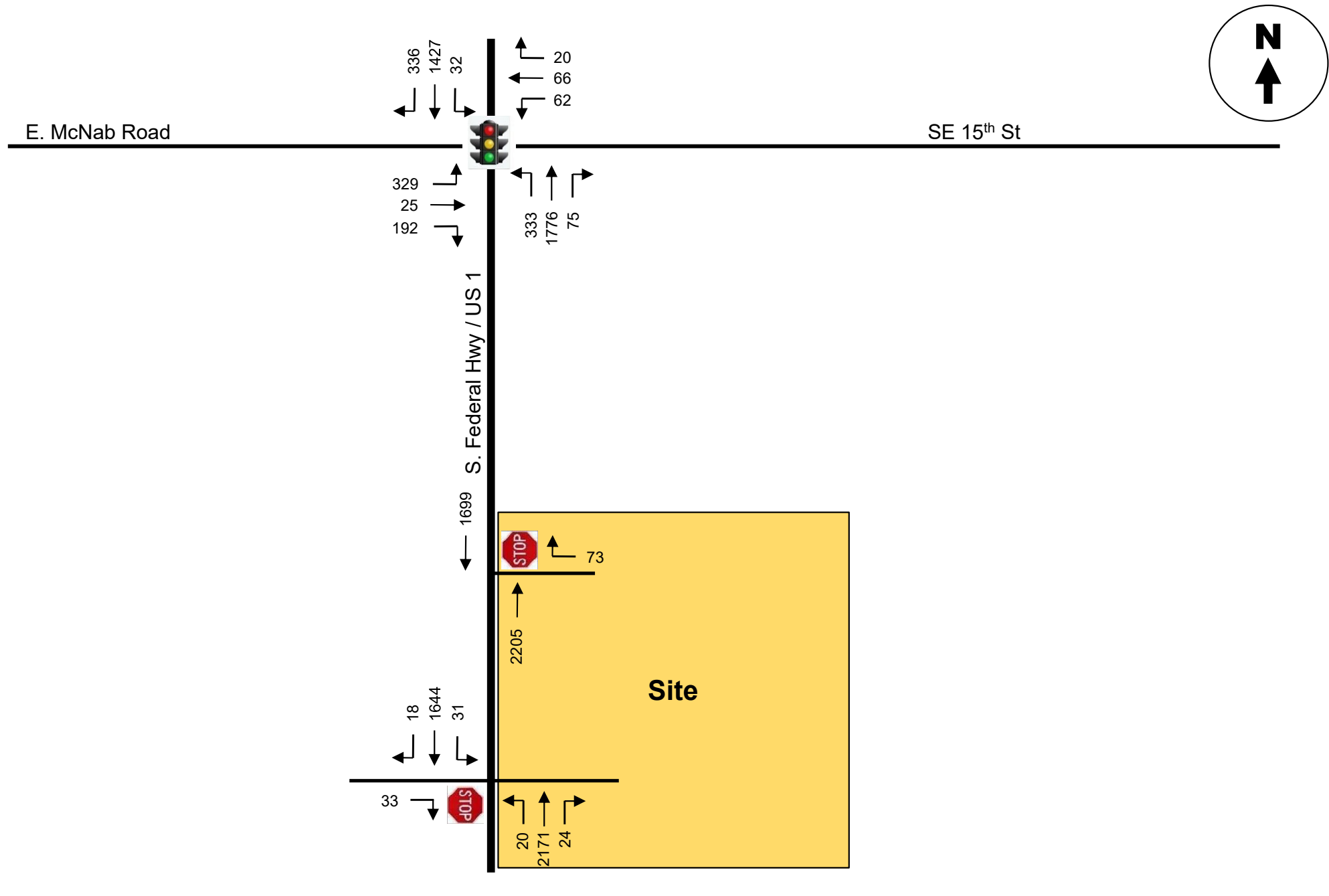
- **Average Peak Season Conversion Factor:** Traffic data collected on Tuesday, September 24, 2024, was reviewed with respect to average peak season conditions. Based on FDOT's Peak Season Factor Category report (see Appendix D), the adjustment factor for data collected during this time period is 1.05.
- **Historic Traffic Growth:** Research relative to the background traffic growth in the area was conducted. Historic traffic count data (i.e. the past 10 years) was obtained from the FDOT for a count station located on S. Federal Highway immediately adjacent to the site. This data is presented in Appendix F of this report. The referenced data indicates that the study area has exhibited a moderate increase (+1.72%) in traffic volumes for the 10-year period between 2014 and 2023. For the purposes of this analysis, a +1.75% annual growth rate has been applied.

The future traffic calculations (peak season adjustments, background traffic growth, and the traffic associated with the 1600 S. Federal Highway mixed-use development) for the study intersections and project driveways are contained in Appendix G in tabular format. Figures 8 through 11 present the future traffic volumes for the study area. Figures 8 and 9 include future background traffic only (without the proposed development) and Figures 10 and 11 include the additional traffic anticipated to be generated by the 1600 S. Federal Highway development.









Level of Service (LOS) Analyses

Intersection capacity/level of service (LOS) analyses were conducted for the study intersection and two (2) project driveways. These analyses were undertaken following the capacity / level of service procedures outlined in the 6th Edition of the Highway Capacity Manual (HCM) using the Synchro software for the signalized and unsignalized intersections. The results of these capacity analyses are summarized in Table 2 below.

Table 2 1600 S. Federal Highway Intersection Levels of Service Pompano Beach, Florida						
Intersection / Movement	Existing (2024) Conditions		Future (2026) Conditions Without Project Traffic		Future (2026) Conditions With Project Traffic	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Signalized Intersection						
S. Federal Hwy / McNab Road	D (41.3)	D (44.5)	D (43.4)	D (47.9)	D (44.6)	D (54.4)
<i>Optimized</i>	--	--	--	--	<i>D (44.3)</i>	<i>D (53.3)</i>
Unsignalized Intersections						
S. Federal Hwy / North Driveway						
- Westbound Right-Turn	B (10.7)	B (12.4)	B (10.9)	B (12.7)	B (11.3)	B (13.4)
S. Federal Hwy / South Driveway						
- Southbound Left-Turn	C (16.4)	C (22.2)	C (16.9)	C (23.5)	C (17.4)	D (26.7)

Source: Highway Capacity Manual and SYNCHRO.

Legend: D (37.7) = LOS (Average Delay - Seconds / Vehicle)

As indicated in Table 2, the study intersection and project driveways are currently operating adequately during the weekday AM and PM peak hours and will continue to do so in the year 2026 with the proposed 1600 S. Federal Highway mixed-use project. The signal timings were optimized for the future build out conditions; however, only minor improvements to the intersection of S. Federal Highway and McNab Road can be achieved as indicated in Table 2 above. It is noted that minor increases in delay are attributed to the proposed development (i.e. +1.2 sec/veh in the AM peak hour and +6.5 sec/veh in the PM peak hour). As such, the project impacts can be described as “de minimis”. The signal timing data from the Broward County Traffic Engineering Division is presented in Appendix H and the Synchro printouts of the intersection capacity analyses are contained in Appendix I.

Turn Lane Storage Analysis

A summary of the estimated 95th percentile queues (for the directly impacted movements) at the intersection of S. Federal Highway and McNab Road and at the southern driveway (southbound left-turn) on S. Federal Highway are presented in Table 3 below.

Table 3 1600 S. Federal Highway Turn Lane Storage Analysis Pompano Beach, Florida							
Intersection / Movement		Existing (2024) Conditions		Future (2026) Conditions Without Project Traffic		Future (2026) Conditions With Project Traffic (Opt.)	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
	Capacity *	95th Percentile Queues					
S. Federal Hwy / McNab Road							
- Northbound Left-Turn	285'	258'	443'	286'	454'	339'	471'
- Eastbound Right-Turn	280'	183'	75'	203'	77'	209'	77'
- Westbound Left-Turn	140'	172'	122'	178'	125'	178'	127'
S. Federal Hwy / South Driveway							
- Southbound Left-Turn	100'	25'	25'	25'	25'	25'	25'

Source: Highway Capacity Manual and SYNCHRO.

* Capacity = Amount of full width storage capacity of the turn lane in feet.

As noted in Table 3 above, the 95th percentile queues for the northbound left-turn lane (in the PM peak hour) and for the westbound left-turn lane (in the AM peak hour) are estimated to exceed the available storage capacity of these turn lanes under existing conditions. This condition will continue in the build out year of 2026 without the subject project. When including the project traffic associated with the 1600 S. Federal Highway development, there is no project impact to the 95th percentile queue of the westbound left-turn lane in the AM peak hour. And the project impact to the 95th percentile queue of the northbound left-turn lane is an increase of 53 feet in the AM peak hour and 17 feet (less than one car length) in the PM peak hour. As such, the project impacts to these movements are considered to be minimal. It is also noted that the northbound left-turn queues may be overestimated as some motorists may elect to continue north on Federal Highway (approximately 650 feet) to the next median opening at the Nissan car dealership driveway where a U-turn maneuver can be made to travel south.

Right-Turn Lane Analyses

Right-turn lane analyses have been performed for the southern project driveway. The generally accepted threshold for the consideration of a right-turn lane is 80 right-turning vehicles in the peak hour. In this case the peak right-turn volume is well below the 80-vehicle threshold. As such, a right-turn lane is not required at the southern project driveway.

Left-Turn Lane Analyses

Since Synchro is known to provide unreliable results for left-turn lane queues at unsignalized intersections, a supplemental left-turn lane analysis has been conducted for the southbound left-turn lane at the project's south driveway on S. Federal Highway. The adequacy of the available storage length (i.e. 100 feet) has been evaluated in accordance with NCHRP Report 745 – Left-Turn Accommodations at Unsignalized Intersections. Excerpts of this report are presented in Appendix J. This report presents several different methods for determining the adequacy of a left-turn lane storage length. The results of these methods are summarized below:

- According to the *Green Book*, the required storage length of a left-turn lane at an unsignalized intersection may be estimated by the number of turning vehicles arriving in a two-minute period. In this case, a peak of 31 left-turning vehicles in the PM peak hour yields approximately one (1) vehicle per each two-minute period, on average. As such, a storage length of 25 feet should be sufficient.
- The equation in the TRB *Access Management Manual* is as follows:

$$L = V / Nc (ks)$$

where L = storage length, V = turning volumes, Nc = number of cycles per hour,
k = queue factor (2.0 for arterials) and s = average length per vehicle (25 feet)

In this case, the storage length is calculated to be 52 feet, which can be accommodated within the currently available storage length.

-
- Lastly, Table 8 in the attached excerpts (Appendix J) from the referenced NCHRP report takes into consideration opposing volumes. At the subject location the opposing (northbound) volume is reported to be 2,209 in the weekday PM peak hour. Although the opposing volume exceeds the maximum volume in the referenced table, the storage length for 31 left-turning vehicles is reported to be 50 feet for the range of 200 to 1,000 opposing vehicles. As such, a storage capacity of 100 feet can be reasonably extrapolated to be adequate.

SUMMARY & CONCLUSIONS

1600 S. Federal Highway is a proposed mixed-use development to be located on the east side of S. Federal Highway (US 1 / State Road 5) between NE 65th Street / Port Royale Boulevard and McNab Road / SE 15th Street in Pompano Beach, Broward County, Florida. The subject site has a land area of approximately 2.35 acres (+/- 102,393 square feet) and is currently developed with an 11-story office building that includes a drive-in bank (BrightStar Credit Union) on the first floor. The site is served by two (2) driveways on S. Federal Highway. One (1) driveway is located near the southern boundary of the site and is limited to left-turns in, right-turns in and right-turns out. The other driveway is located near the northern boundary of the site and is limited to right-turns in and right-turns out.

The proposed development on this site includes 132 dwelling units in a 10-story building and 3,650 square feet of commercial / retail space on the ground floor adjacent to S. Federal Highway. Vehicular access to the site will be modified. The existing southern driveway will remain in its current location; however, it will be converted to a left-turn in / right-turn in only driveway. The northern driveway will be relocated approximately 80 feet to the south and will be converted to a right-turn out only driveway.

The proposed residential and retail development on the 1600 S. Federal Highway site is anticipated to generate 967 daily vehicle trips, 55 AM peak hour vehicle trips (16 inbound and 39 outbound) and 76 PM peak hour vehicle trips (44 inbound and 32 outbound).

The study intersection and project driveways are currently operating adequately during the weekday AM and PM peak hours and will continue to do so in the year 2026 with the proposed 1600 S. Federal Highway mixed-use project. The signal timings were optimized for the future build out conditions; however, only minor improvements to the intersection of S. Federal Highway and McNab Road can be achieved. It is noted that minor increases in delay are attributed to the proposed development (i.e. +1.2 sec/veh in the AM peak hour and +6.5 sec/veh in the PM peak hour). As such, the project impacts can be described as “de minimis”.

The 95th percentile queues for the northbound left-turn lane (in the PM peak hour) and for the westbound left-turn lane (in the AM peak hour) at the intersection of Federal Highway and McNab Road are estimated to exceed the available storage capacity of these turn lanes under existing conditions. This condition will continue in the build out year of 2026 without the subject project. When including the project traffic associated with the 1600 S. Federal Highway development, there is no project impact to the 95th percentile queue of the westbound left-turn lane in the AM peak hour. And the project impact to the 95th percentile queue of the northbound left-turn lane is an increase of 53 feet in the AM peak hour and 17 feet (less than one car length) in the PM peak hour. As such, the project impacts to these movements are considered to be minimal.

Based upon the projected driveway volumes, exclusive right-turn lanes are not warranted and the existing southbound left-turn lane at the southern driveway has adequate storage capacity to accommodate the projected left-turn volume.

APPENDIX A

1600 S. Federal Highway – Pompano Beach, FL

Survey

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PZ24-12000027

03/05/2025

APPENDIX B

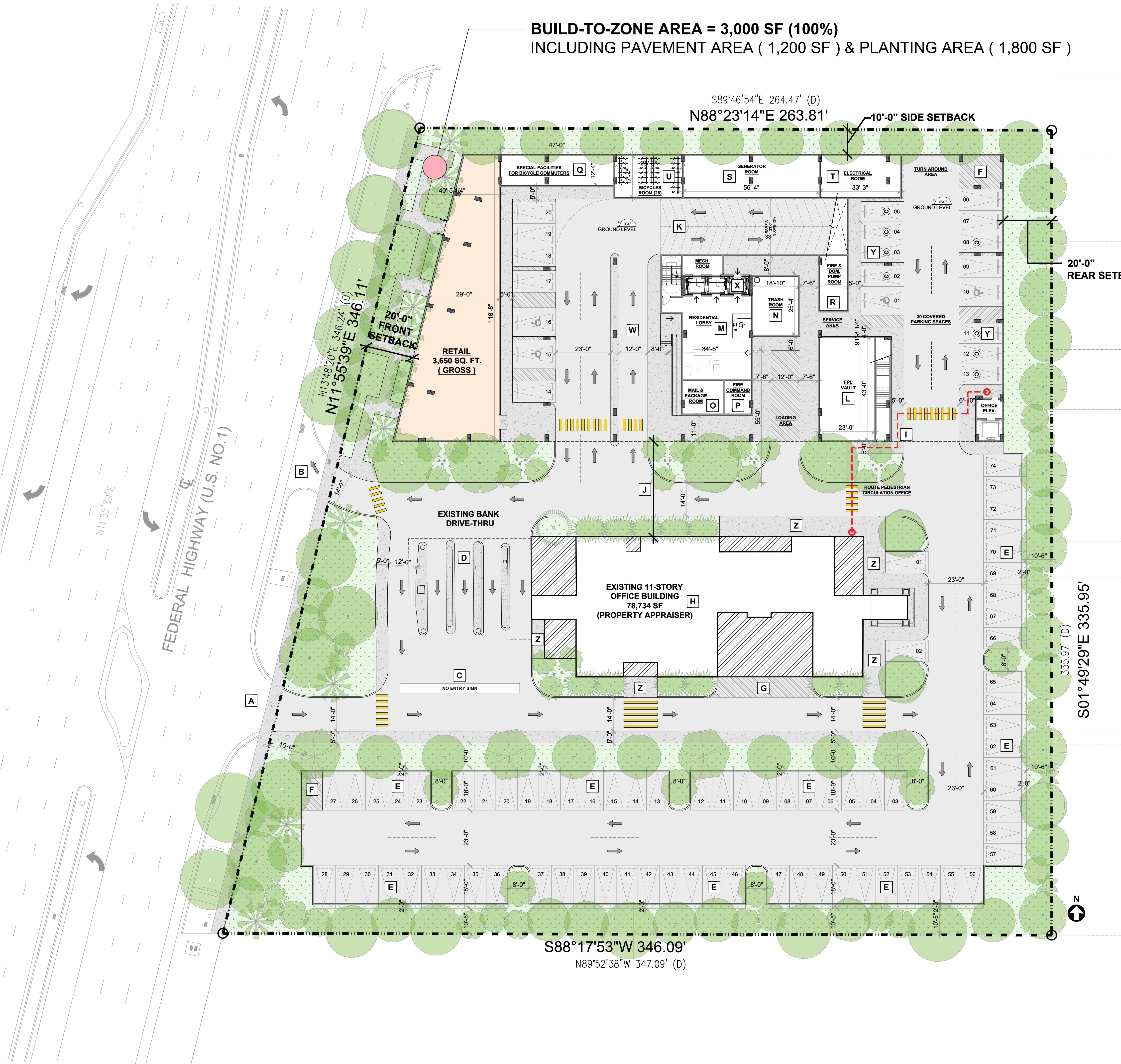
1600 S. Federal Highway – Pompano Beach, FL

Preliminary Site Plan

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PZ24-12000027

03/05/2025



BUILD-TO-ZONE AREA = 3,000 SF (100%)
INCLUDING PAVEMENT AREA (1,200 SF) & PLANTING AREA (1,800 SF)

SITE PLAN KEYNOTES & LEGEND

A

SITE ENTRANCE (ONE-WAY ONLY) FROM FEDERAL HIGHWAY

B

SITE EXIT (ONE-WAY ONLY) TO FEDERAL HIGHWAY

C

NO ENTRY SIGN, DRIVE-THRU EXIT FOR EXISTING BANK

D

EXISTING BANK DRIVE-THRU TO REMAIN

E

TYPICAL 9' X 18' PARKING STALL WITH 2 FEET OVERHANG

F

VEHICULAR TURN AROUND AREA FOR DEAD END

G

EXISTING LOADING AREA FOR OFFICE BUILDING USE ONLY

H

EXISTING 11-STORY OFFICE BUILDING (78,734 SF)

I

PEDESTRIAN CIRCULATION ROUTE FOR EXISTING OFFICE BUILDING

J

40 FEET BUILDING SEPARATION FROM EXISTING BUILDING

K

SPEED RAMP (12% SLOPE) ACCESS TO UPPER PARKING LEVEL

L

FPL VAULT TO BE COORDINATED WITH CIVIL ENGINEER

M

RESIDENTIAL LOBBY WITH SERVICE ELEVATOR IN THE BACK

N

SHARED TRASH ROOM (18'-10" X 25'-4")

O

MAIL & PACKAGE ROOM (13'-10" X 22'-10")

P

FIRE COMMAND ROOM (11'-2" X 13'-10")

Q

SPECIAL FACILITIES FOR BICYCLE COMMUTERS (TBD)

R

FIRE & DOMESTIC PUMP ROOM (11'-8" X 22'-11")

S

GENERATOR ROOM (17'-4" X 56'-4")

T

ELECTRICAL ROOM (17'-4" X 33'-3")

U

BICYCLES ROOM (17'-4" X 28'-3")

V

PROPOSED LOADING AREA (12'-0" X 36'-0")

W

PROPOSED RESIDENTIAL DROP-OFF AREA

X

SERVICE ELEVATOR FOR RESIDENTIAL USE

Y

8'-6" X 18'-0" COMPACT PARKING STALL

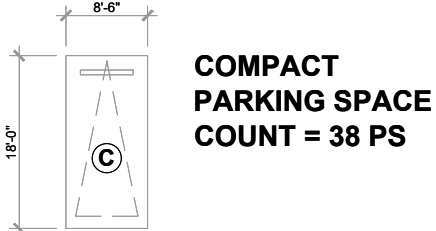
Z

EXISTING SIDEWALK TO REMAIN

GROUND RETAIL AREA

GROSS FLOOR AREA: 3,650 SF

PERVIOUS / IMPERVIOUS AREA	
PERVIOUS AREA	IMPERVIOUS AREA
<div></div> LANDSCAPE 25,386 SF	<div></div> ASPHALT 45,093 SF
	<div></div> SIDEWALK 10,741 SF
TOTAL = 25,386 SF	TOTAL = 55,834 SF



PARKING COUNT PER LEVEL	
LEVEL	COUNT
LEVEL 3	18 PS
LEVEL 2	77 PS
LEVEL 1.5	60 PS
LEVEL 1	20 PS
SURFACE	74 PS
TOTAL	249 PS

idea

Architect

absolute-idea.com
CANAL PARK
3323 NE 163rd Street, Suite 200 North Miami Beach, FL 33160
(305) 792.0015 (305) 931.0279 @info@absolute-idea.com

SEAL
TO THE BEST OF MY KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE FIRE-SAFETY STANDARDS AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH THIS SECTION AND 633 FLORIDA STATUTES.
STEPHANE L'ECUYER
AR 93637

STATE OF FLORIDA

STEPHANE L'ECUYER

AR93637

REGISTERED ARCHITECT

ISSUE FOR:
DRC SUBMITTAL

REV.

DATE

DESCRIPTION

01

12-19-2024

D.R.C. SUBMITTAL

ALL MEASUREMENTS MUST BE VERIFIED BEFORE BEGINNING THE WORK. NO MEASUREMENTS ARE TO BE SCALED DIRECTLY FROM THIS DRAWING.

Key section

Client

VERA FUND
NICK POLYUSHKIN
& YURI KHARITONENKOV
TEL: 305.833.3303

Project

1600 S FEDERAL HIGHWAY
(MIXED-USE PROJECT)
1600 SOUTH FEDERAL HIGHWAY,
POMPAHO BEACH, FL 33062

Title

SITE PLAN

Drawn

J. WU

Field

ARCHITECTURE

Verified

N. TREMBLAY

Scale

as shown

Approved

S. L'ECUYER

Date

12-19-2024

Project Manager

J. WU

Dwg. no.

A-080

Project

PZ24-12000037

24-0338

03/05/2025

APPENDIX C

Traffic Counts

DRC

PZ24-12000027

03/05/2025

Traff Tech Engineering Inc.

File Name : 1-Federal Hwy & McNab Rd

Site Code : 00000000

Start Date : 9/24/2024

Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Federal Hwy From North					SE 15th Street From East					Federal Hwy From South					McNab Rd From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:00	44	276	2	0	322	2	5	10	0	17	5	144	16	0	165	20	1	32	0	53	557
07:15	49	367	0	1	417	2	10	14	0	26	3	253	38	0	294	42	0	50	0	92	829
07:30	79	406	0	3	488	1	22	53	0	76	5	350	40	2	397	69	6	93	0	168	1129
07:45	54	412	2	5	473	2	20	37	0	59	9	343	52	1	405	75	7	106	0	188	1125
Total	226	1461	4	9	1700	7	57	114	0	178	22	1090	146	3	1261	206	14	281	0	501	3640
08:00	22	272	3	2	299	0	6	13	0	19	9	350	34	0	393	75	4	77	0	156	867
08:15	33	325	9	3	370	4	6	13	0	23	5	211	39	4	259	86	2	61	0	149	801
08:30	44	398	4	6	452	2	7	13	0	22	6	342	30	1	379	68	1	50	0	119	972
08:45	31	340	2	4	377	7	13	10	0	30	6	260	38	3	307	82	3	71	0	156	870
Total	130	1335	18	15	1498	13	32	49	0	94	26	1163	141	8	1338	311	10	259	0	580	3510
*** BREAK ***																					
16:00	81	290	4	2	377	10	10	10	0	30	3	341	58	2	404	46	5	96	0	147	958
16:15	74	288	1	5	368	4	13	15	0	32	6	369	69	1	445	33	3	76	0	112	957
16:30	96	325	4	4	429	3	18	15	0	36	18	377	63	8	466	37	9	74	0	120	1051
16:45	69	305	4	4	382	6	14	13	0	33	12	356	60	1	429	38	3	82	0	123	967
Total	320	1208	13	15	1556	23	55	53	0	131	39	1443	250	12	1744	154	20	328	0	502	3933
17:00	71	316	3	2	392	5	18	15	0	38	21	453	77	1	552	47	4	66	0	117	1099
17:15	73	350	3	5	431	4	11	12	0	27	16	436	74	7	533	51	7	81	0	139	1130
17:30	77	303	3	3	386	2	11	20	0	33	10	413	65	2	490	47	7	68	1	123	1032
17:45	67	288	2	3	360	3	10	16	0	29	8	349	57	2	416	46	5	73	0	124	929
Total	288	1257	11	13	1569	14	50	63	0	127	55	1651	273	12	1991	191	23	288	1	503	4190
Grand Total	964	5261	46	52	6323	57	194	279	0	530	142	5347	810	35	6334	862	67	1156	1	2086	15273
Apprch %	15.2	83.2	0.7	0.8		10.8	36.6	52.6	0		2.2	84.4	12.8	0.6		41.3	3.2	55.4	0		
Total %	6.3	34.4	0.3	0.3	41.4	0.4	1.3	1.8	0	3.5	0.9	35	5.3	0.2	41.5	5.6	0.4	7.6	0	13.7	
Autos	951	5206	46	50	6253	56	193	276	0	525	141	5290	796	35	6262	854	67	1146	1	2068	15108
% Autos	98.7	99	100	96.2	98.9	98.2	99.5	98.9	0	99.1	99.3	98.9	98.3	100	98.9	99.1	100	99.1	100	99.1	98.9
Heavy Vehicles																					
% Heavy Vehicles	1.3	1	0	3.8	1.1	1.8	0.5	1.1	0	0.9	0.7	1.1	1.7	0	1.1	0.9	0	0.9	0	0.9	1.1

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PZ24-12000027

03/05/2025

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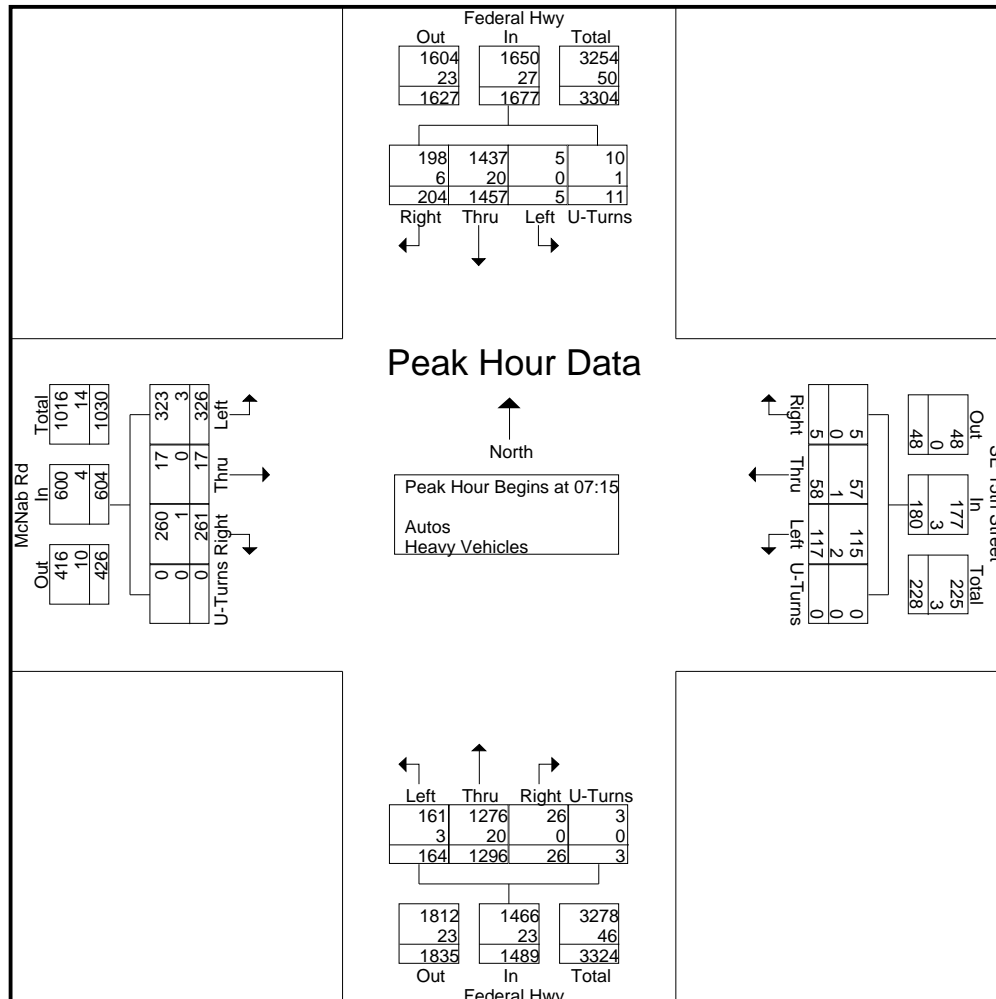
File Name : 1-Federal Hwy & McNab Rd

Site Code : 00000000

Start Date : 9/24/2024

Page No : 4

	Federal Hwy From North					SE 15th Street From East					Federal Hwy From South					McNab Rd From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	49	367	0	1	417	2	10	14	0	26	3	253	38	0	294	42	0	50	0	92	829
07:30	79	406	0	3	488	1	22	53	0	76	5	350	40	2	397	69	6	93	0	168	1129
07:45	54	412	2	5	473	2	20	37	0	59	9	343	52	1	405	75	7	106	0	188	1125
08:00	22	272	3	2	299	0	6	13	0	19	9	350	34	0	393	75	4	77	0	156	867
Total Volume	204	1457	5	11	1677	5	58	117	0	180	26	1296	164	3	1489	261	17	326	0	604	3950
% App. Total	12.2	86.9	0.3	0.7		2.8	32.2	65	0		1.7	87	11	0.2		43.2	2.8	54	0		
PHF	.646	.884	.417	.550	.859	.625	.659	.552	.000	.592	.722	.926	.788	.375	.919	.870	.607	.769	.000	.803	.875
Autos	198	1437	5	10	1650	5	57	115	0	177	26	1276	161	3	1466	260	17	323	0	600	3893
% Autos	97.1	98.6	100	90.9	98.4	100	98.3	98.3	0	98.3	100	98.5	98.2	100	98.5	99.6	100	99.1	0	99.3	98.6
Heavy Vehicles	6	20	0	1	27	0	1	2	0	3	0	20	3	0	23	1	0	3	0	4	57
% Heavy Vehicles	2.9	1.4	0	9.1	1.6	0	1.7	1.7	0	1.7	0	1.5	1.8	0	1.5	0.4	0	0.9	0	0.7	1.4



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PZ24-12000027

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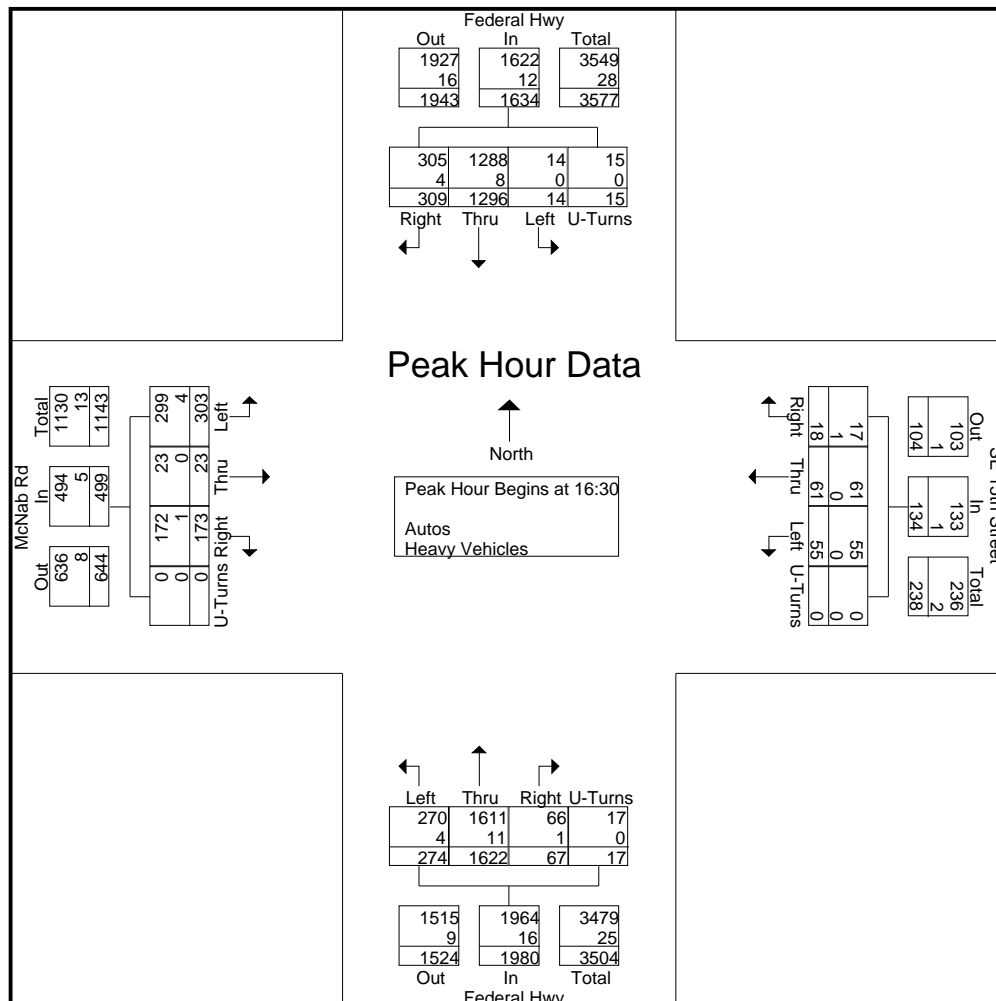
File Name : 1-Federal Hwy & McNab Rd

Site Code : 00000000

Start Date : 9/24/2024

Page No : 5

	Federal Hwy From North					SE 15th Street From East					Federal Hwy From South					McNab Rd From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	96	325	4	4	429	3	18	15	0	36	18	377	63	8	466	37	9	74	0	120	1051
16:45	69	305	4	4	382	6	14	13	0	33	12	356	60	1	429	38	3	82	0	123	967
17:00	71	316	3	2	392	5	18	15	0	38	21	453	77	1	552	47	4	66	0	117	1099
17:15	73	350	3	5	431	4	11	12	0	27	16	436	74	7	533	51	7	81	0	139	1130
Total Volume	309	1296	14	15	1634	18	61	55	0	134	67	1622	274	17	1980	173	23	303	0	499	4247
% App. Total	18.9	79.3	0.9	0.9		13.4	45.5	41	0		3.4	81.9	13.8	0.9		34.7	4.6	60.7	0		
PHF	.805	.926	.875	.750	.948	.750	.847	.917	.000	.882	.798	.895	.890	.531	.897	.848	.639	.924	.000	.897	.940
Autos	305	1288	14	15	1622	17	61	55	0	133	66	1611	270	17	1964	172	23	299	0	494	4213
% Autos	98.7	99.4	100	100	99.3	94.4	100	100	0	99.3	98.5	99.3	98.5	100	99.2	99.4	100	98.7	0	99.0	99.2
Heavy Vehicles	4	8	0	0	12	1	0	0	0	1	1	11	4	0	16	1	0	4	0	5	34
% Heavy Vehicles	1.3	0.6	0	0	0.7	5.6	0	0	0	0.7	1.5	0.7	1.5	0	0.8	0.6	0	1.3	0	1.0	0.8



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PZ24-12000027

03/05/2025

Traff Tech Engineering Inc.

File Name : 2-Federal Hwy at Site N Driveway

Site Code : 00000000

Start Date : 9/24/2024

Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Federal Hwy From North					N Driveway From East					Federal Hwy From South					N Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:00	0	306	0	0	306	0	0	0	0	0	1	164	0	0	165	0	0	0	0	0	471
07:15	0	423	0	0	423	0	0	0	0	0	0	294	0	0	294	0	0	0	0	0	717
07:30	0	530	0	0	530	0	0	0	0	0	0	397	0	0	397	0	0	0	0	0	927
07:45	0	525	0	0	525	1	0	0	0	1	1	405	0	0	406	0	0	0	0	0	932
Total	0	1784	0	0	1784	1	0	0	0	1	2	1260	0	0	1262	0	0	0	0	0	3047
08:00	0	360	0	0	360	1	0	0	0	1	0	394	0	0	394	0	0	0	0	0	755
08:15	0	428	0	0	428	0	0	0	0	0	1	258	0	0	259	0	0	0	0	0	687
08:30	0	480	0	0	480	1	0	0	0	1	0	380	0	0	380	0	0	0	0	0	861
08:45	0	435	0	0	435	2	0	0	0	2	2	307	0	0	309	0	0	0	0	0	746
Total	0	1703	0	0	1703	4	0	0	0	4	3	1339	0	0	1342	0	0	0	0	0	3049
*** BREAK ***																					
16:00	0	348	0	0	348	4	0	0	0	4	0	408	0	0	408	0	0	0	0	0	760
16:15	0	337	0	0	337	2	0	0	0	2	0	447	0	0	447	0	0	0	0	0	786
16:30	0	385	0	0	385	7	0	0	0	7	0	473	0	0	473	0	0	0	0	0	865
16:45	0	357	0	0	357	4	0	0	0	4	2	431	0	0	433	0	0	0	0	0	794
Total	0	1427	0	0	1427	17	0	0	0	17	2	1759	0	0	1761	0	0	0	0	0	3205
17:00	0	379	0	0	379	10	0	0	0	10	0	562	0	0	562	0	0	0	0	0	951
17:15	0	420	0	0	420	3	0	0	0	3	0	536	0	0	536	0	0	0	0	0	959
17:30	0	372	0	0	372	9	0	0	0	9	0	499	0	0	499	0	0	0	0	0	880
17:45	0	352	0	0	352	9	0	0	0	9	0	425	0	0	425	0	0	0	0	0	786
Total	0	1523	0	0	1523	31	0	0	0	31	0	2022	0	0	2022	0	0	0	0	0	3576
Grand Total	0	6437	0	0	6437	53	0	0	0	53	7	6380	0	0	6387	0	0	0	0	0	12877
Apprch %	0	100	0	0		100	0	0	0		0.1	99.9	0	0		0	0	0	0		
Total %	0	50	0	0	50	0.4	0	0	0	0.4	0.1	49.5	0	0	49.6	0	0	0	0	0	
Autos	0	6371	0	0	6371	52	0	0	0	52	6	6308	0	0	6314	0	0	0	0	0	12737
% Autos	0	99	0	0	99	98.1	0	0	0	98.1	85.7	98.9	0	0	98.9	0	0	0	0	0	98.9
Heavy Vehicles																					
% Heavy Vehicles	0	1	0	0	1	1.9	0	0	0	1.9	14.3	1.1	0	0	1.1	0	0	0	0	0	1.1

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PZ24-12000027

03/05/2025

Traff Tech Engineering Inc.

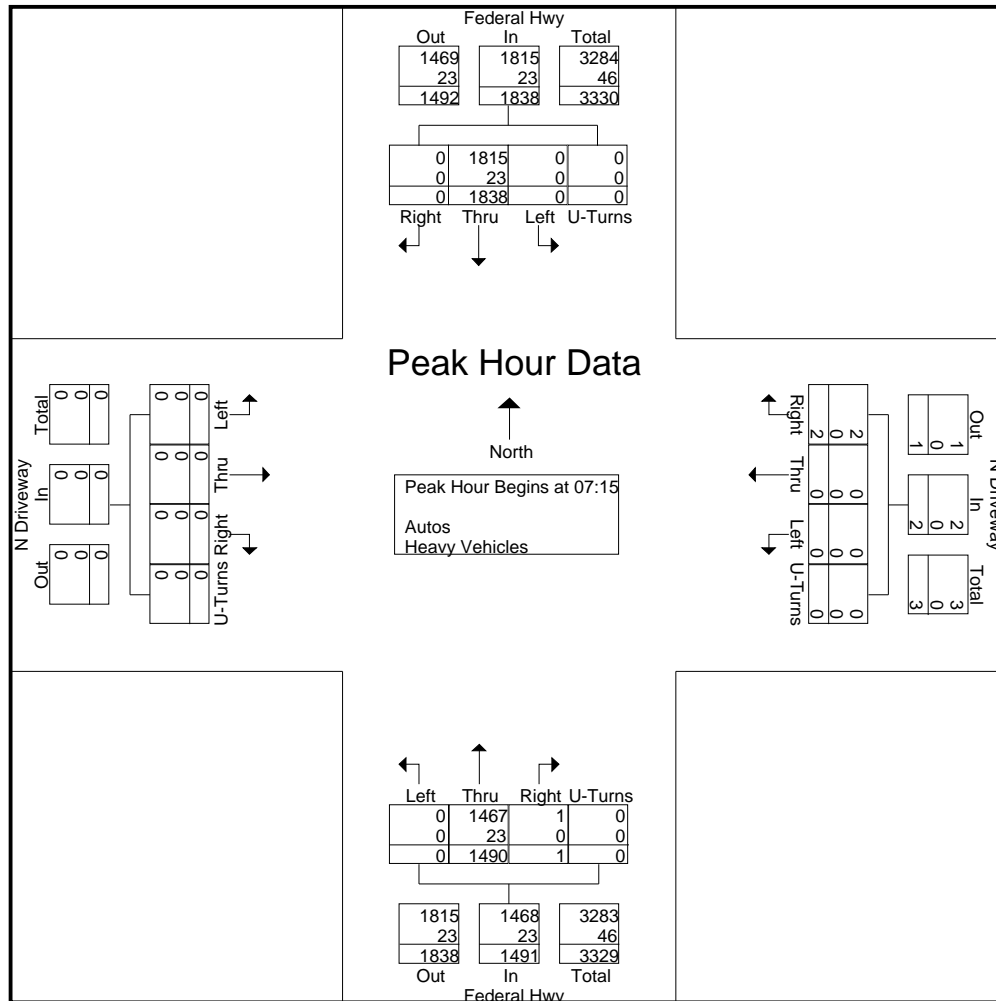
File Name : 2-Federal Hwy at Site N Driveway

Site Code : 00000000

Start Date : 9/24/2024

Page No : 4

	Federal Hwy From North					N Driveway From East					Federal Hwy From South					N Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	423	0	0	423	0	0	0	0	0	0	294	0	0	294	0	0	0	0	0	717
07:30	0	530	0	0	530	0	0	0	0	0	0	397	0	0	397	0	0	0	0	0	927
07:45	0	525	0	0	525	1	0	0	0	1	1	405	0	0	406	0	0	0	0	0	932
08:00	0	360	0	0	360	1	0	0	0	1	0	394	0	0	394	0	0	0	0	0	755
Total Volume	0	1838	0	0	1838	2	0	0	0	2	1	1490	0	0	1491	0	0	0	0	0	3331
% App. Total	0	100	0	0	0	100	0	0	0	0	0.1	99.9	0	0	0	0	0	0	0	0	0
PHF	.000	.867	.000	.000	.867	.500	.000	.000	.000	.500	.250	.920	.000	.000	.918	.000	.000	.000	.000	.000	.894
Autos	0	1815	0	0	1815	2	0	0	0	2	1	1467	0	0	1468	0	0	0	0	0	3285
% Autos	0	98.7	0	0	98.7	100	0	0	0	100	100	98.5	0	0	98.5	0	0	0	0	0	98.6
Heavy Vehicles	0	23	0	0	23	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	46
% Heavy Vehicles	0	1.3	0	0	1.3	0	0	0	0	0	0	1.5	0	0	1.5	0	0	0	0	0	1.4



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PZ24-12000027

03/05/2025

Traff Tech Engineering Inc.

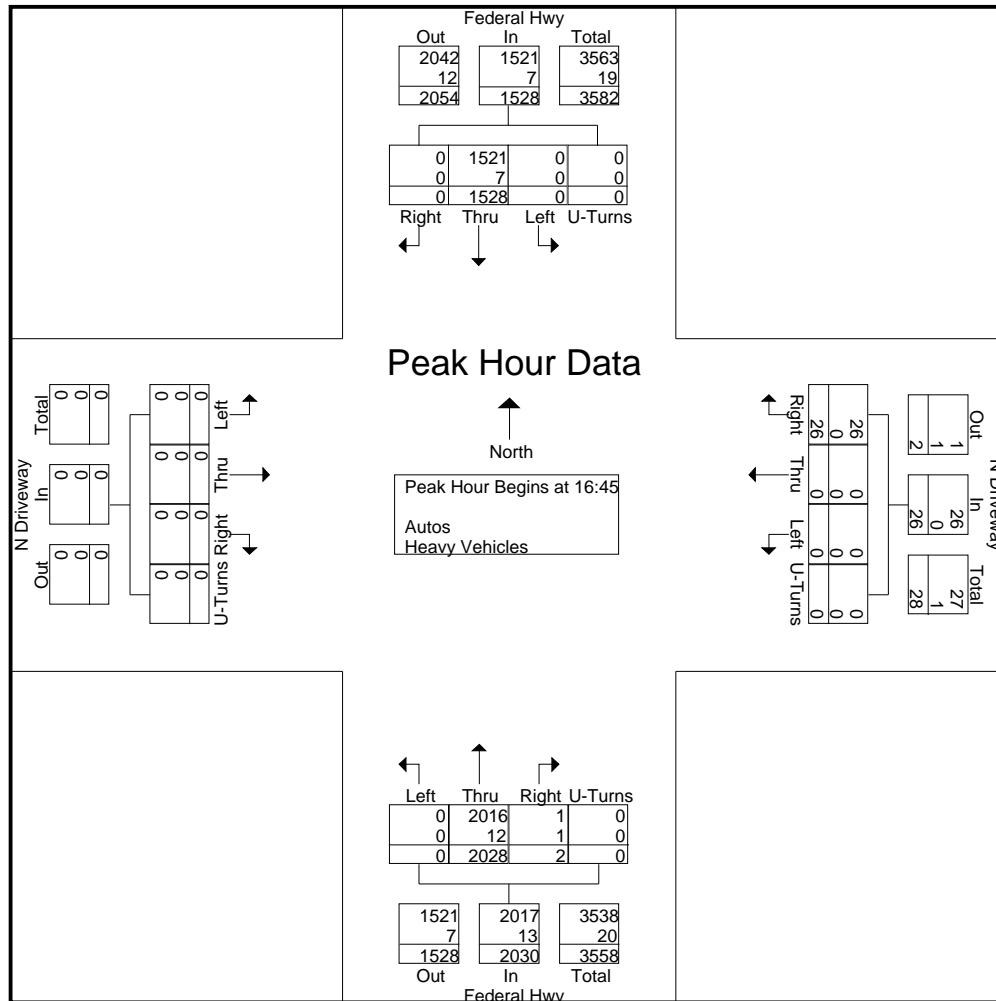
File Name : 2-Federal Hwy at Site N Driveway

Site Code : 00000000

Start Date : 9/24/2024

Page No : 5

	Federal Hwy From North					N Driveway From East					Federal Hwy From South					N Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	0	357	0	0	357	4	0	0	0	4	2	431	0	0	433	0	0	0	0	0	794
17:00	0	379	0	0	379	10	0	0	0	10	0	562	0	0	562	0	0	0	0	0	951
17:15	0	420	0	0	420	3	0	0	0	3	0	536	0	0	536	0	0	0	0	0	959
17:30	0	372	0	0	372	9	0	0	0	9	0	499	0	0	499	0	0	0	0	0	880
Total Volume	0	1528	0	0	1528	26	0	0	0	26	2	2028	0	0	2030	0	0	0	0	0	3584
% App. Total	0	100	0	0	0	100	0	0	0	0	0.1	99.9	0	0	0	0	0	0	0	0	0
PHF	.000	.910	.000	.000	.910	.650	.000	.000	.000	.650	.250	.902	.000	.000	.903	.000	.000	.000	.000	.000	.934
Autos	0	1521	0	0	1521	26	0	0	0	26	1	2016	0	0	2017	0	0	0	0	0	3564
% Autos	0	99.5	0	0	99.5	100	0	0	0	100	50.0	99.4	0	0	99.4	0	0	0	0	0	99.4
Heavy Vehicles	0	7	0	0	7	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	20
% Heavy Vehicles	0	0.5	0	0	0.5	0	0	0	0	0	50.0	0.6	0	0	0.6	0	0	0	0	0	0.6



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PZ24-12000027

03/05/2025

Traff Tech Engineering Inc.

File Name : 3-Federal Hwy at Sive S Driveway

Site Code : 00000000

Start Date : 9/24/2024

Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Federal Hwy From North					S Driveway From East					Federal Hwy From South					S Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:00	1	301	0	1	303	0	0	0	0	0	0	151	3	4	158	6	0	0	0	6	467
07:15	0	415	0	0	415	0	0	0	0	0	0	286	3	1	290	14	0	0	0	14	719
07:30	3	517	3	3	526	0	0	0	0	0	3	387	1	2	393	23	0	0	0	23	942
07:45	3	513	2	4	522	3	0	0	0	3	1	394	3	1	399	17	0	1	0	18	942
Total	7	1746	5	8	1766	3	0	0	0	3	4	1218	10	8	1240	60	0	1	0	61	3070
08:00	0	351	1	0	352	1	0	0	0	1	0	386	0	1	387	21	0	0	0	21	761
08:15	4	409	5	3	421	2	0	0	0	2	3	249	3	0	255	18	0	1	0	19	697
08:30	6	461	1	1	469	1	0	0	0	1	3	370	1	0	374	10	0	0	0	10	854
08:45	2	412	17	2	433	1	0	0	0	1	4	295	2	1	302	9	0	0	0	9	745
Total	12	1633	24	6	1675	5	0	0	0	5	10	1300	6	2	1318	58	0	1	0	59	3057
*** BREAK ***																					
16:00	4	337	1	0	342	1	0	0	0	1	4	394	4	1	403	7	0	0	0	7	753
16:15	3	327	5	0	335	8	0	0	0	8	2	436	5	2	445	7	0	0	0	7	795
16:30	0	375	5	2	382	14	0	0	0	14	1	463	4	0	468	7	0	0	0	7	871
16:45	0	353	1	2	356	4	0	1	0	5	0	423	3	1	427	6	0	0	0	6	794
Total	7	1392	12	4	1415	27	0	1	0	28	7	1716	16	4	1743	27	0	0	0	27	3213
17:00	5	369	1	1	376	5	0	0	0	5	1	551	6	2	560	9	0	1	0	10	951
17:15	6	413	1	0	420	2	0	0	0	2	1	525	4	2	532	5	0	0	0	5	959
17:30	6	364	0	0	370	0	0	0	0	0	0	498	0	0	498	8	0	1	0	9	877
17:45	10	339	2	1	352	0	0	0	0	0	0	423	0	0	423	12	0	1	0	13	788
Total	27	1485	4	2	1518	7	0	0	0	7	2	1997	10	4	2013	34	0	3	0	37	3575
Grand Total	53	6256	45	20	6374	42	0	1	0	43	23	6231	42	18	6314	179	0	5	0	184	12915
Apprch %	0.8	98.1	0.7	0.3		97.7	0	2.3	0		0.4	98.7	0.7	0.3		97.3	0	2.7	0		
Total %	0.4	48.4	0.3	0.2	49.4	0.3	0	0	0	0.3	0.2	48.2	0.3	0.1	48.9	1.4	0	0	0	1.4	
Autos	53	6256	43	19	6371	41	0	1	0	42	22	6231	42	18	6313	179	0	5	0	184	12910
% Autos	100	100	95.6	95	100	97.6	0	100	0	97.7	95.7	100	100	100	100	100	0	100	0	100	100
Heavy Vehicles																					
% Heavy Vehicles	0	0	4.4	5	0	2.4	0	0	0	2.3	4.3	0	0	0	0	0	0	0	0	0	0

DRC

PZ24-12000027

03/05/2025

Traff Tech Engineering Inc.

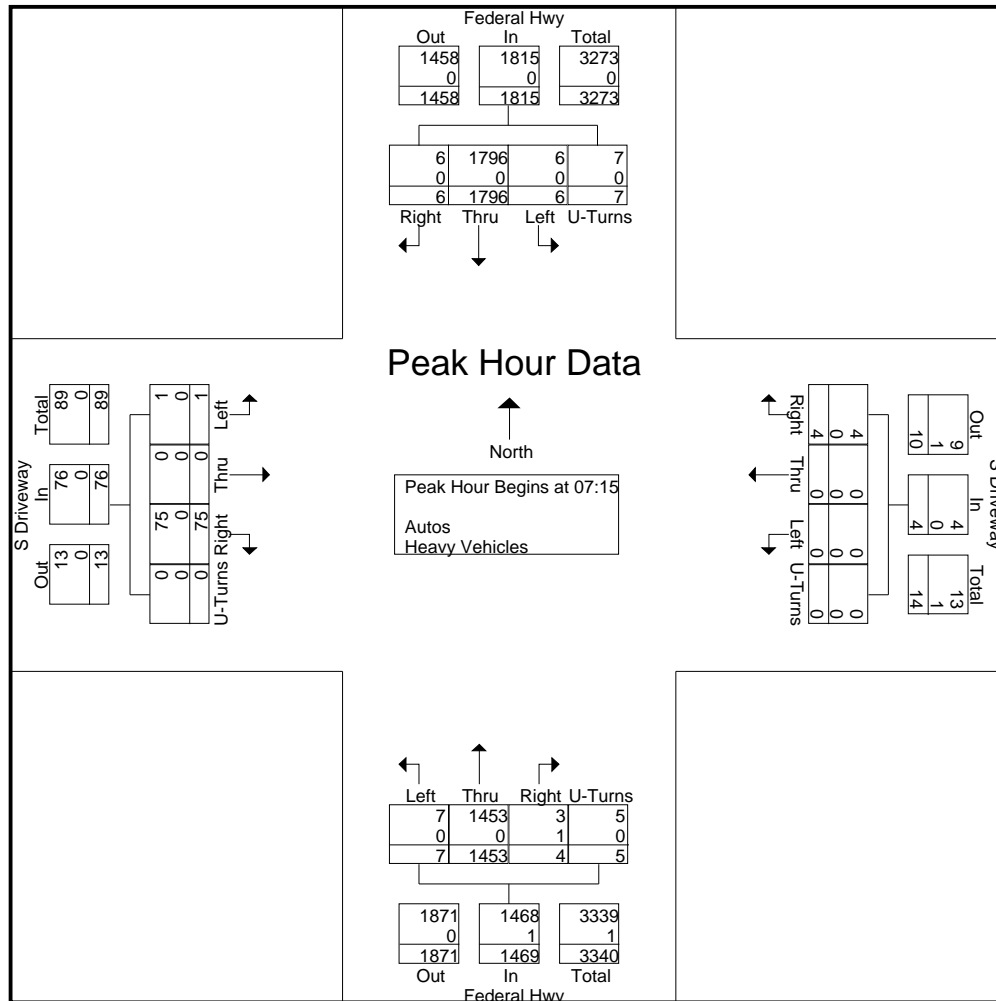
File Name : 3-Federal Hwy at Sive S Driveway

Site Code : 00000000

Start Date : 9/24/2024

Page No : 4

	Federal Hwy From North					S Driveway From East					Federal Hwy From South					S Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	415	0	0	415	0	0	0	0	0	0	286	3	1	290	14	0	0	0	14	719
07:30	3	517	3	3	526	0	0	0	0	0	3	387	1	2	393	23	0	0	0	23	942
07:45	3	513	2	4	522	3	0	0	0	3	1	394	3	1	399	17	0	1	0	18	942
08:00	0	351	1	0	352	1	0	0	0	1	0	386	0	1	387	21	0	0	0	21	761
Total Volume	6	1796	6	7	1815	4	0	0	0	4	4	1453	7	5	1469	75	0	1	0	76	3364
% App. Total	0.3	99	0.3	0.4		100	0	0	0		0.3	98.9	0.5	0.3		98.7	0	1.3	0		
PHF	.500	.868	.500	.438	.863	.333	.000	.000	.000	.333	.333	.922	.583	.625	.920	.815	.000	.250	.000	.826	.893
Autos	6	1796	6	7	1815	4	0	0	0	4	3	1453	7	5	1468	75	0	1	0	76	3363
% Autos	100	100	100	100	100	100	0	0	0	100	75.0	100	100	100	99.9	100	0	100	0	100	100.0
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	25.0	0	0	0	0.1	0	0	0	0	0	0.0



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Traff Tech Engineering Inc.

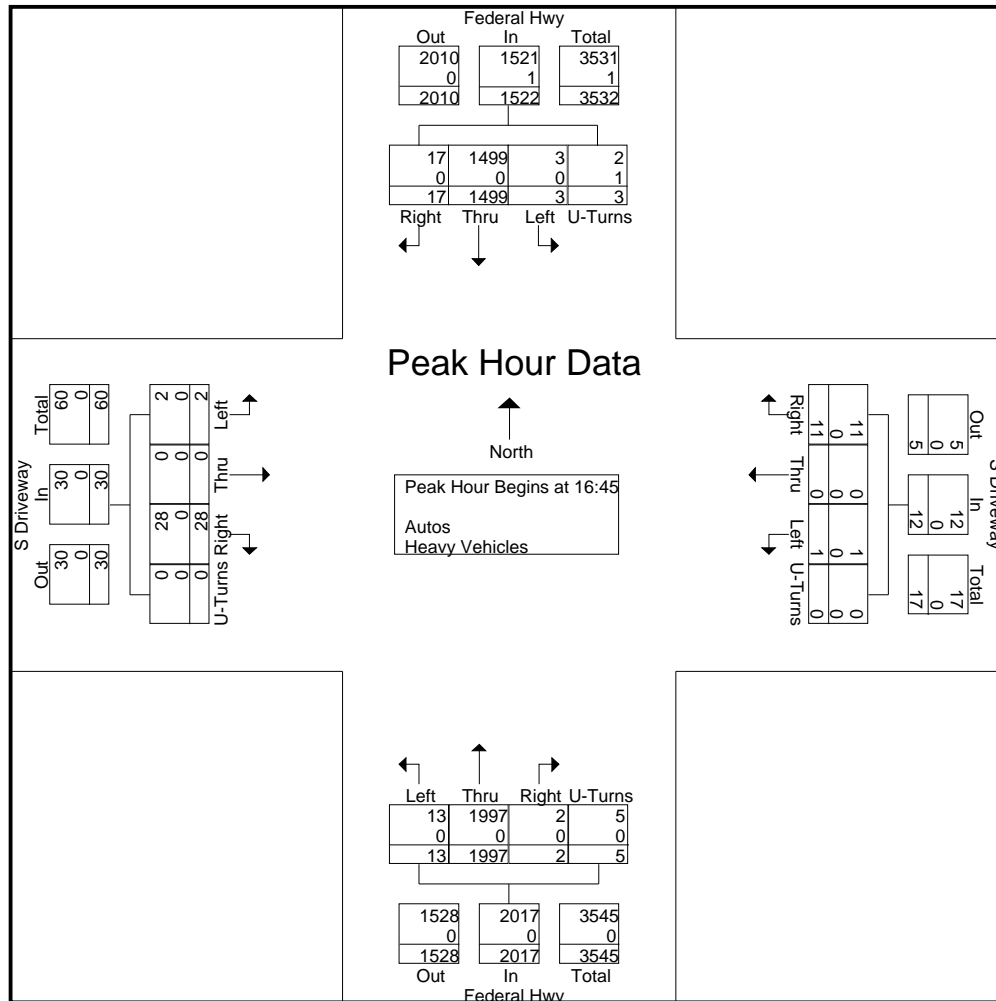
File Name : 3-Federal Hwy at Sive S Driveway

Site Code : 00000000

Start Date : 9/24/2024

Page No : 5

	Federal Hwy From North					S Driveway From East					Federal Hwy From South					S Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	0	353	1	2	356	4	0	1	0	5	0	423	3	1	427	6	0	0	0	6	794
17:00	5	369	1	1	376	5	0	0	0	5	1	551	6	2	560	9	0	1	0	10	951
17:15	6	413	1	0	420	2	0	0	0	2	1	525	4	2	532	5	0	0	0	5	959
17:30	6	364	0	0	370	0	0	0	0	0	0	498	0	0	498	8	0	1	0	9	877
Total Volume	17	1499	3	3	1522	11	0	1	0	12	2	1997	13	5	2017	28	0	2	0	30	3581
% App. Total	1.1	98.5	0.2	0.2		91.7	0	8.3	0		0.1	99	0.6	0.2		93.3	0	6.7	0		
PHF	.708	.907	.750	.375	.906	.550	.000	.250	.000	.600	.500	.906	.542	.625	.900	.778	.000	.500	.000	.750	.934
Autos	17	1499	3	2	1521	11	0	1	0	12	2	1997	13	5	2017	28	0	2	0	30	3580
% Autos	100	100	100	66.7	99.9	100	0	100	0	100	100	100	100	100	100	100	0	100	0	100	100.0
Heavy Vehicles	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Heavy Vehicles	0	0	0	33.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0



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APPENDIX D

FDOT Peak Season Conversion Factor Report

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PZ24-12000027

03/05/2025

2023 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 8601 CEN.-W OF US1 TO SR7

WEEK	DATES	SF	MOCF: 0.97 PSCF
1	01/01/2023 - 01/07/2023	1.01	1.04
2	01/08/2023 - 01/14/2023	1.00	1.03
3	01/15/2023 - 01/21/2023	0.99	1.02
* 4	01/22/2023 - 01/28/2023	0.98	1.01
* 5	01/29/2023 - 02/04/2023	0.98	1.01
* 6	02/05/2023 - 02/11/2023	0.97	1.00
* 7	02/12/2023 - 02/18/2023	0.96	0.99
* 8	02/19/2023 - 02/25/2023	0.96	0.99
* 9	02/26/2023 - 03/04/2023	0.96	0.99
*10	03/05/2023 - 03/11/2023	0.96	0.99
*11	03/12/2023 - 03/18/2023	0.96	0.99
*12	03/19/2023 - 03/25/2023	0.97	1.00
*13	03/26/2023 - 04/01/2023	0.98	1.01
*14	04/02/2023 - 04/08/2023	0.99	1.02
*15	04/09/2023 - 04/15/2023	1.00	1.03
*16	04/16/2023 - 04/22/2023	0.99	1.02
17	04/23/2023 - 04/29/2023	0.99	1.02
18	04/30/2023 - 05/06/2023	0.99	1.02
19	05/07/2023 - 05/13/2023	0.99	1.02
20	05/14/2023 - 05/20/2023	0.99	1.02
21	05/21/2023 - 05/27/2023	1.00	1.03
22	05/28/2023 - 06/03/2023	1.00	1.03
23	06/04/2023 - 06/10/2023	1.01	1.04
24	06/11/2023 - 06/17/2023	1.01	1.04
25	06/18/2023 - 06/24/2023	1.02	1.05
26	06/25/2023 - 07/01/2023	1.02	1.05
27	07/02/2023 - 07/08/2023	1.02	1.05
28	07/09/2023 - 07/15/2023	1.02	1.05
29	07/16/2023 - 07/22/2023	1.02	1.05
30	07/23/2023 - 07/29/2023	1.02	1.05
31	07/30/2023 - 08/05/2023	1.02	1.05
32	08/06/2023 - 08/12/2023	1.02	1.05
33	08/13/2023 - 08/19/2023	1.02	1.05
34	08/20/2023 - 08/26/2023	1.03	1.06
35	08/27/2023 - 09/02/2023	1.03	1.06
36	09/03/2023 - 09/09/2023	1.03	1.06
37	09/10/2023 - 09/16/2023	1.03	1.06
38	09/17/2023 - 09/23/2023	1.03	1.06
39	09/24/2023 - 09/30/2023	1.02	1.05
40	10/01/2023 - 10/07/2023	1.02	1.05
41	10/08/2023 - 10/14/2023	1.01	1.04
42	10/15/2023 - 10/21/2023	1.01	1.04
43	10/22/2023 - 10/28/2023	1.01	1.04
44	10/29/2023 - 11/04/2023	1.02	1.05
45	11/05/2023 - 11/11/2023	1.03	1.06
46	11/12/2023 - 11/18/2023	1.04	1.07
47	11/19/2023 - 11/25/2023	1.03	1.06
48	11/26/2023 - 12/02/2023	1.02	1.05
49	12/03/2023 - 12/09/2023	1.02	1.05
50	12/10/2023 - 12/16/2023	1.01	1.04
51	12/17/2023 - 12/23/2023	1.01	1.04
52	12/24/2023 - 12/30/2023	1.00	1.03
53	12/31/2023 - 12/31/2023	0.99	1.02

* PEAK SEASON

09-MAR-2024 18:41:40

830UPD

4_8601_PKSEASON.TXT

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PZ24-12000027

03/05/2025

APPENDIX E

ITE Trip Generation Manual (11th Edition)

Relevant Excerpts

Land Use: 221

Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevator, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (mid-rise) (Land Use 226), and mid-rise residential with ground-floor commercial (Land Use 231) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.5 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, Ontario (CAN), Oregon, Utah, and Virginia.

Source Numbers

168, 188, 204, 305, 306, 321, 818, 857, 862, 866, 901, 904, 910, 949, 951, 959, 963, 964, 966, 967, 969, 970, 1004, 1014, 1022, 1023, 1025, 1031, 1032, 1035, 1047, 1056, 1057, 1058, 1071, 1076

Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 11

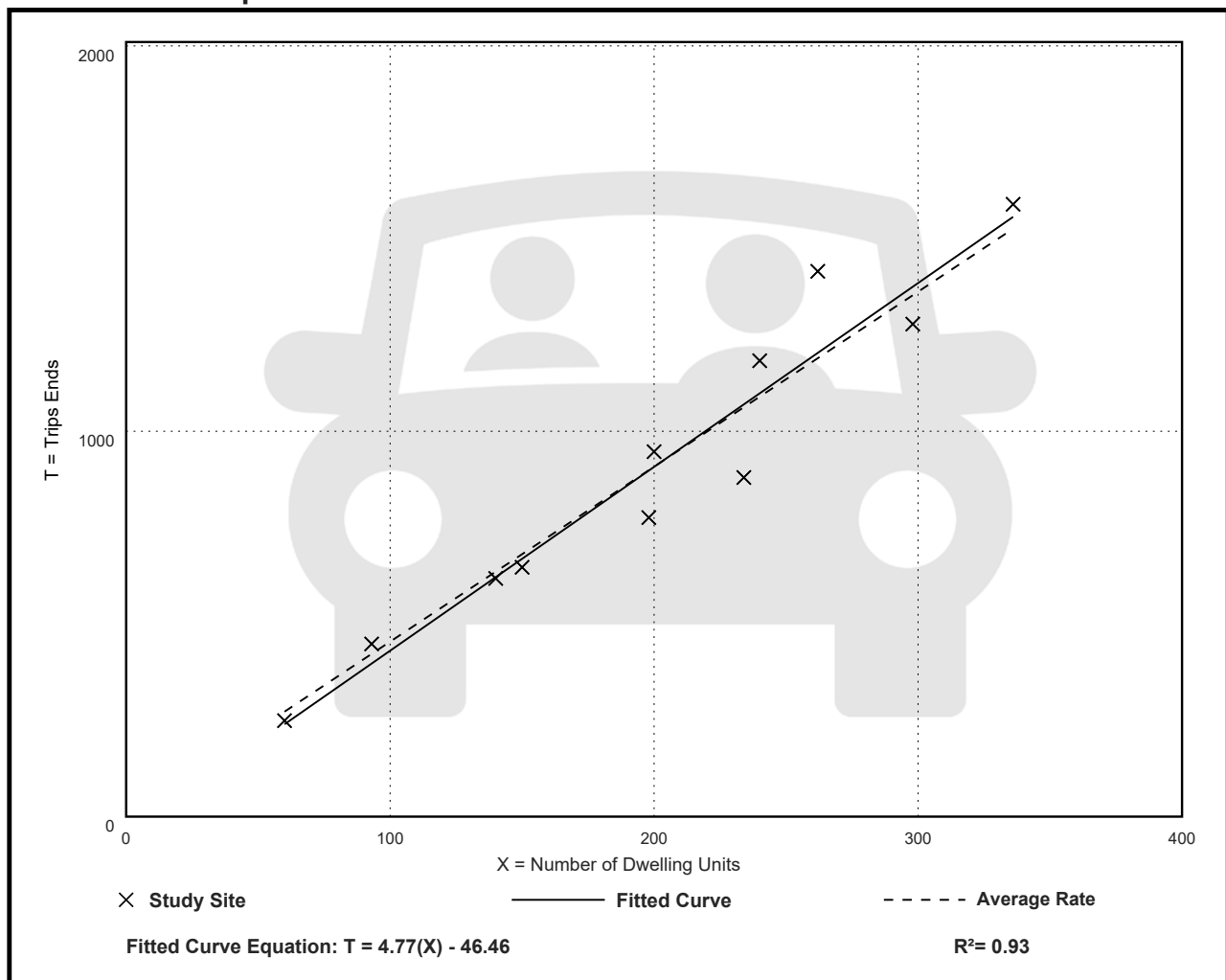
Avg. Num. of Dwelling Units: 201

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.76 - 5.40	0.51

Data Plot and Equation



Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 30

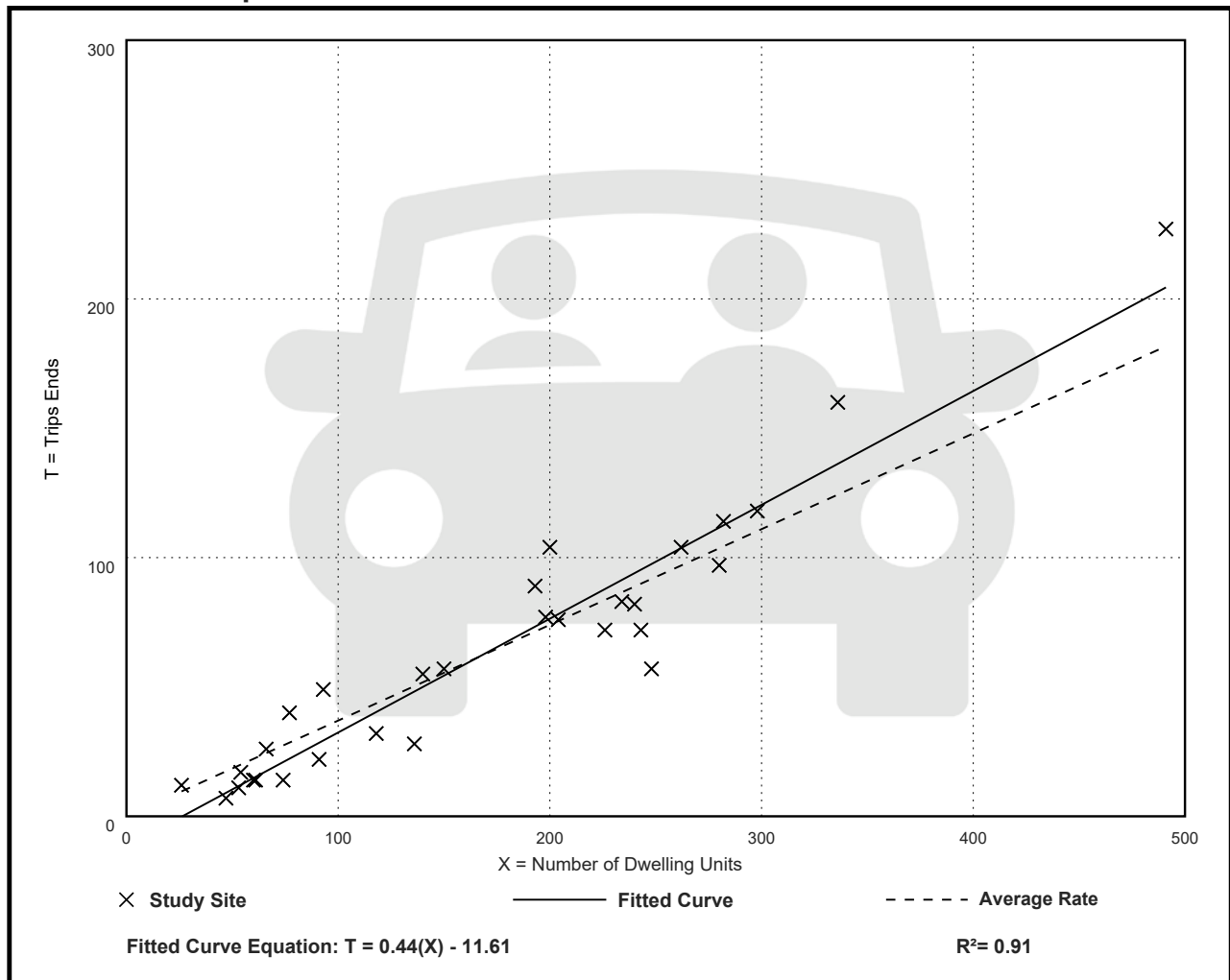
Avg. Num. of Dwelling Units: 173

Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



DRC

Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 31

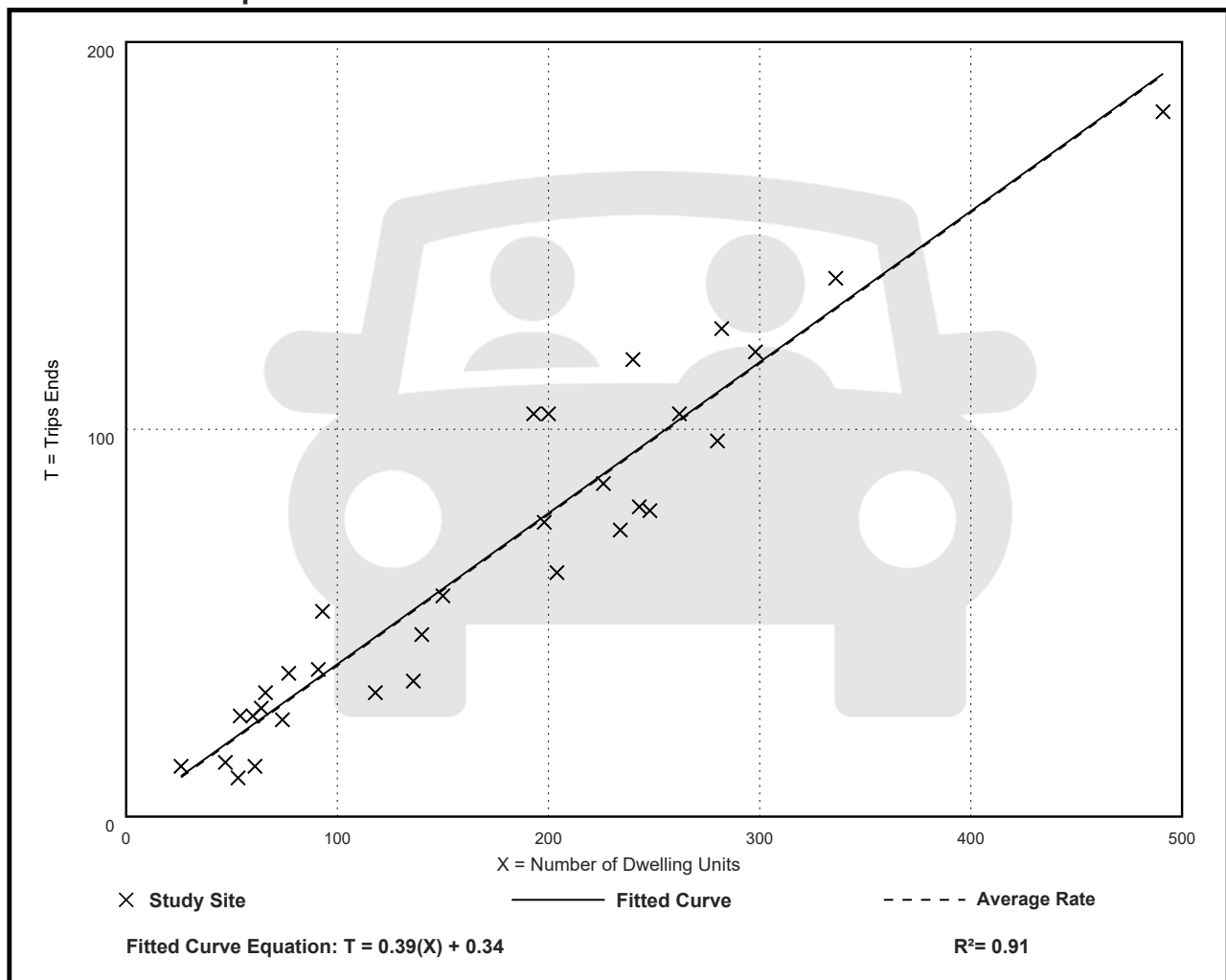
Avg. Num. of Dwelling Units: 169

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



Land Use: 822

Strip Retail Plaza (<40k)

Description

A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land use 820), shopping plaza (40-150k) (Land Use 821), and factory outlet center (Land Use 823) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, New Jersey, Ontario (CAN), South Dakota, Vermont, Washington, and Wisconsin.

Source Numbers

304, 358, 423, 428, 437, 507, 715, 728, 936, 960, 961, 974, 1009

Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 4

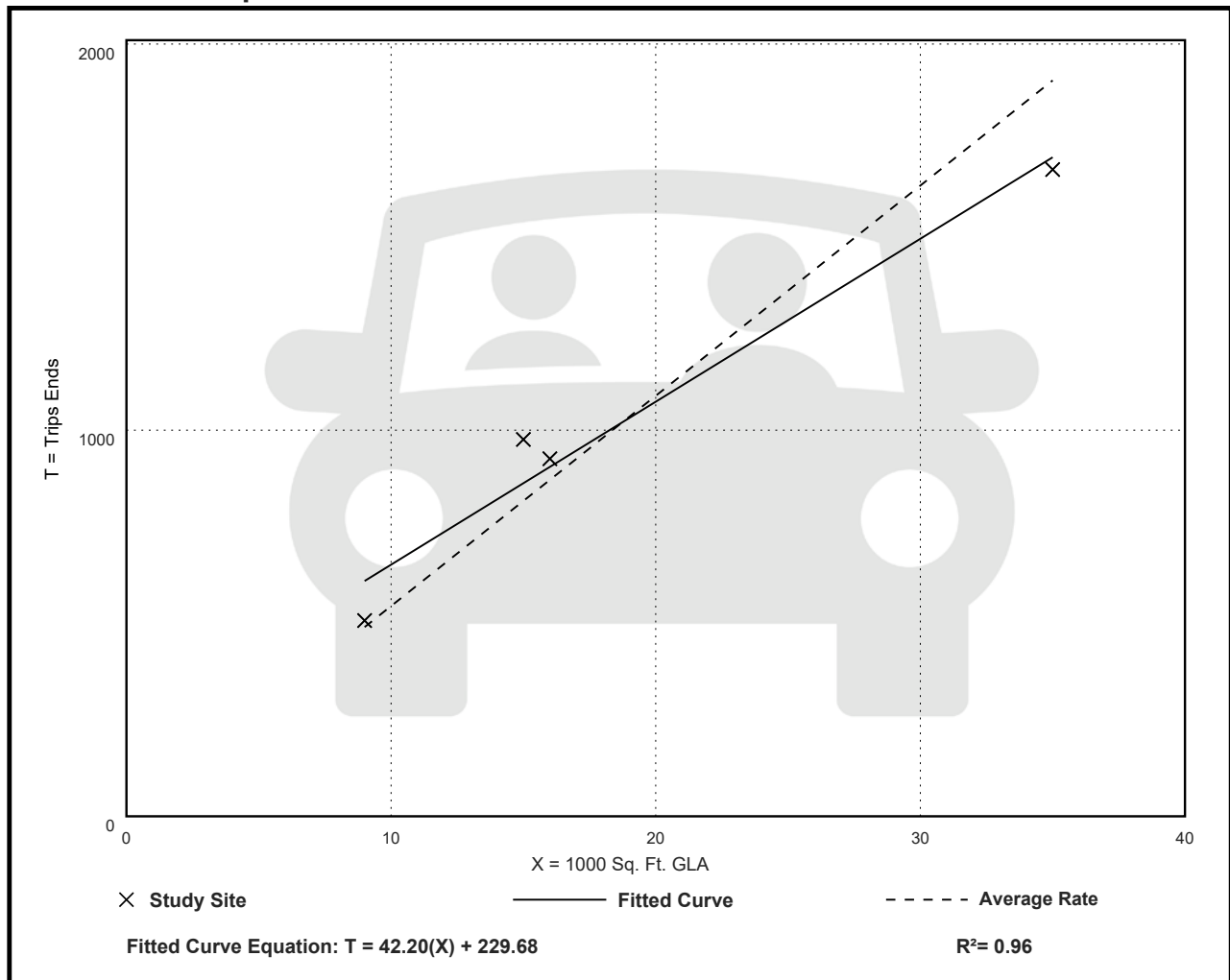
Avg. 1000 Sq. Ft. GLA: 19

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation



DRC

Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 5

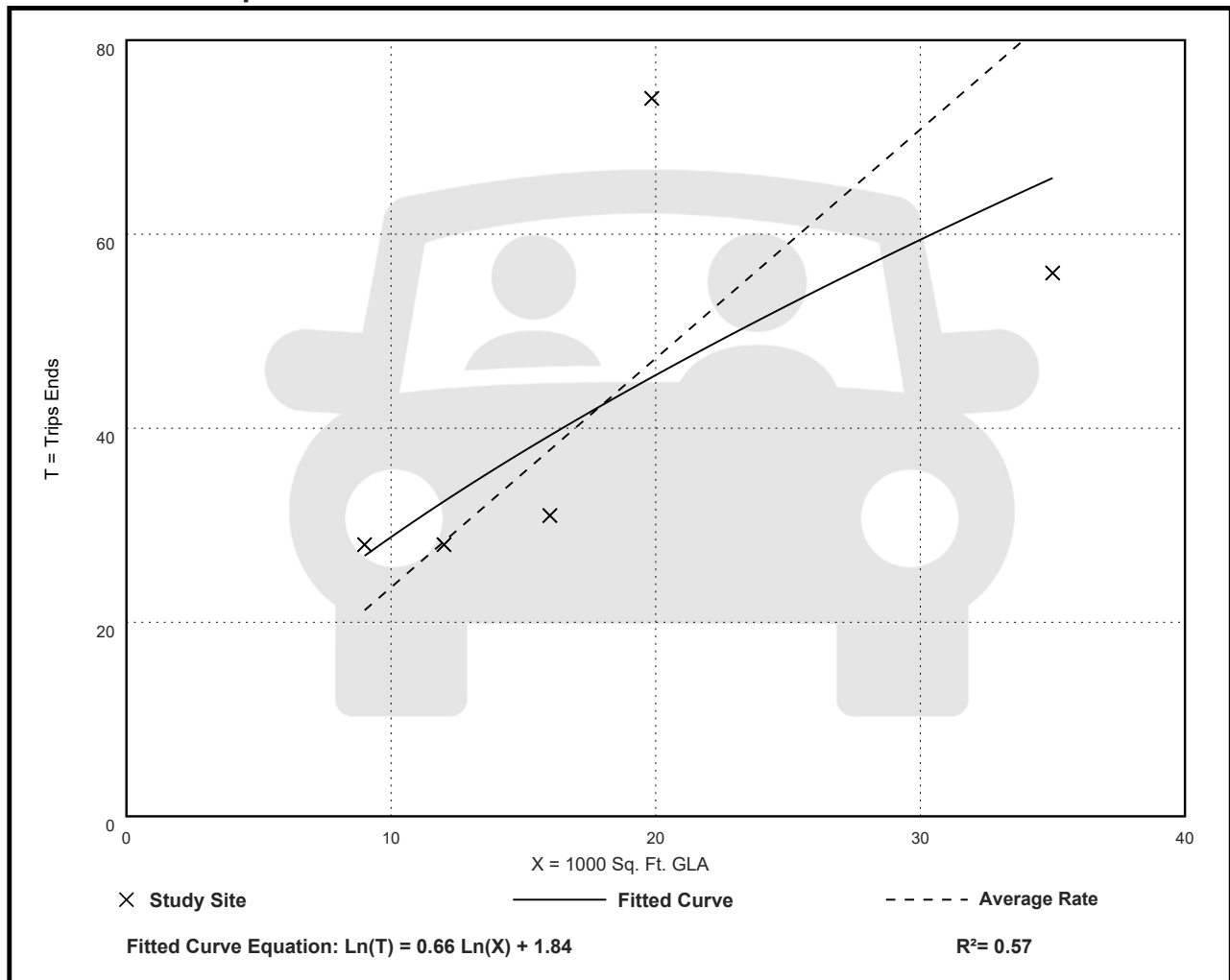
Avg. 1000 Sq. Ft. GLA: 18

Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 25

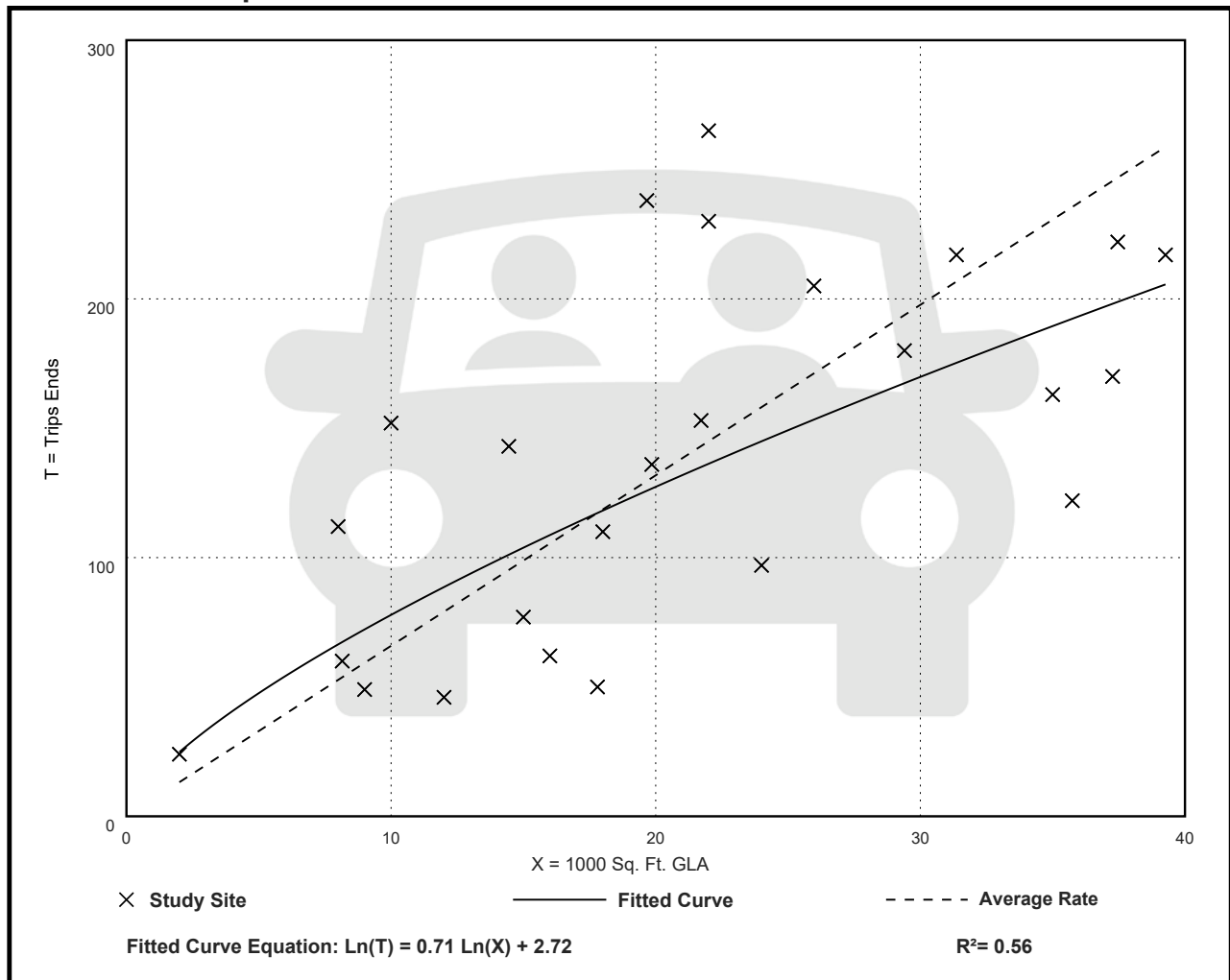
Avg. 1000 Sq. Ft. GLA: 21

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



DRC

APPENDIX F

Historic Traffic Counts And Growth Rate Analysis

DRC

PZ24-12000027

03/05/2025

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2023 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 0386 - SR 5 / US 1 - N OF CYPRESS CREEK RD,POMPANO

YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----		-----	-----	-----	-----
2023	49000	F	N 24500		S 24500	9.00	54.20	2.30
2022	46000	C	N 23000		S 23000	9.00	53.50	2.30
2021	45500	C	N 22500		S 23000	9.00	54.50	3.10
2020	41000	F	N 20000		S 21000	9.00	53.50	3.10
2019	43000	C	N 21000		S 22000	9.00	54.70	3.10
2018	42500	C	N 21500		S 21000	9.00	54.10	2.10
2017	40000	C	N 20000		S 20000	9.00	53.80	2.10
2016	47000	C	N 24000		S 23000	9.00	55.20	2.10
2015	43000	C	N 21000		S 22000	9.00	54.90	4.30
2014	45000	C	N 23500		S 21500	9.00	54.50	4.50
2013	43000	C	N 21000		S 22000	9.00	54.60	4.40
2012	43000	C	N 22000		S 21000	9.00	55.00	3.50
2011	40500	C	N 20000		S 20500	9.00	54.50	3.50
2010	45500	C	N 23000		S 22500	9.37	54.06	3.50
2009	41000	C	N 20500		S 20500	9.31	53.74	4.80
2008	47500	C	N 24500		S 23000	9.70	54.48	4.80

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

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PZ24-12000027

03/05/2025

1600 S. Federal Highway

Pompano Beach, FL

Growth Rate Analysis

Site #860386 - SR 5 / US 1 - North of Cypress Creek Road, Pompano

Year	Volume	Growth Rate
2014	45,000	
2023	49,000	1.72%

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PZ24-12000027

03/05/2025

APPENDIX G

Future Traffic Volumes Spreadsheets

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

S. Federal Highway and McNab Road AM Peak Hour

Description	S. Federal Highway Northbound			S. Federal Highway Southbound			McNab Road Eastbound			McNab Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (9/24/2024)	167	1,296	26	16	1,457	204	326	17	261	117	58	5
Season Adjustment Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2024 Peak Season Traffic	175	1,361	27	17	1,530	214	342	18	274	123	61	5
Annual Growth Rate	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
2026 Background Traffic	182	1,409	28	17	1,584	222	354	18	284	127	63	5
1600 S. Federal Highway	21	16	2		6				2	1		
2026 Total Traffic	203	1,425	30	17	1,590	222	354	18	286	128	63	5

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PZ24-12000027

03/05/2025

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

S. Federal Highway and McNab Road PM Peak Hour

Description	S. Federal Highway Northbound			S. Federal Highway Southbound			McNab Road Eastbound			McNab Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (9/24/2024)	291	1,622	67	29	1,296	309	303	23	173	55	61	18
Season Adjustment Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2024 Peak Season Traffic	306	1,703	70	30	1,361	324	318	24	182	58	64	19
Annual Growth Rate	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
2026 Background Traffic	316	1,763	73	32	1,409	336	329	25	188	60	66	20
1600 S. Federal Highway	17	13	2		18				4	2		
2026 Total Traffic	333	1,776	75	32	1,427	336	329	25	192	62	66	20

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PZ24-12000027

03/05/2025

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

S. Federal Highway and North Project Driveway AM Peak Hour

Description	S. Federal Highway Northbound			S. Federal Highway Southbound			Eastbound			North Project DW Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (9/24/2024)	0	1,490	1	0	1,838	0	0	0	0	0	0	2
Season Adjustment Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2024 Peak Season Traffic	0	1,565	1	0	1,930	0	0	0	0	0	0	2
Annual Growth Rate	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
2026 Background Traffic	0	1,620	1	0	1,998	0	0	0	0	0	0	2
1600 S. Federal Highway					26							39
2026 Total Traffic	0	1,620	0	0	2,024	0	0	0	0	0	0	45

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PZ24-12000027

03/05/2025

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

S. Federal Highway and North Project Driveway PM Peak Hour

Description	S. Federal Highway Northbound			S. Federal Highway Southbound			Eastbound			North Project DW Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (9/24/2024)	0	2,028	2	0	1,528	0	0	0	0	0	0	26
Season Adjustment Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2024 Peak Season Traffic	0	2,129	2	0	1,604	0	0	0	0	0	0	27
Annual Growth Rate	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
2026 Background Traffic	0	2,205	2	0	1,661	0	0	0	0	0	0	28
1600 S. Federal Highway					38							32
2026 Total Traffic	0	2,205	0	0	1,699	0	0	0	0	0	0	73

DRC

PZ24-12000027

03/05/2025

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

S. Federal Highway and South Project Driveway AM Peak Hour

Description	S. Federal Highway Northbound			S. Federal Highway Southbound			Avana DW Eastbound			South Project DW Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (9/24/2024)	12	1,453	4	13	1,796	6	0	0	76	0	0	4
Season Adjustment Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2024 Peak Season Traffic	13	1,526	4	14	1,886	6	0	0	80	0	0	4
Annual Growth Rate	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
2026 Background Traffic	13	1,580	4	14	1,952	7	0	0	83	0	0	4
1600 S. Federal Highway			7	9	17							
2026 Total Traffic	13	1,580	12	23	1,969	7	0	0	83	0	0	0

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FUTURE TURNING MOVEMENT VOLUME ANALYSIS

S. Federal Highway and South Project Driveway PM Peak Hour

Description	S. Federal Highway Northbound			S. Federal Highway Southbound			Avana DW Eastbound			South Project DW Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (9/24/2024)	18	1,997	2	6	1,499	17	0	0	30	0	0	12
Season Adjustment Factor	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
2024 Peak Season Traffic	19	2,097	2	6	1,574	18	0	0	32	0	0	13
Annual Growth Rate	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
2026 Background Traffic	20	2,171	2	7	1,630	18	0	0	33	0	0	13
1600 S. Federal Highway			20	24	14							
2026 Total Traffic	20	2,171	24	31	1,644	18	0	0	33	0	0	0

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APPENDIX H

Signal Timing Data



BROWARD COUNTY TRAFFIC ENGINEERING
ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number 1261 Initial Operation Date 3/20/84
Controller Type 2070 LN System Number 1261
Modification Number 9 Modification Date 03/24/2015
Drawing/Project No PBSJ 228092-1-52-01 FPL Grid Number 87886676200
Intersection FEDERAL HWY. (US 1/SR 5) and McNAB ROAD/ SE 15 STREET
Municipality POMPANO BEACH

Controller Phase	1	2	3	4	5	6	7	8
Face Number	1	2	4,7	3,8	5	6		
Direction	SBL	NB	EB	WB	NBL	SB		
Initial Green(MIN)	4	12	6	6	4	12		
Vehicle Ext.(GAP)	1.5	3.0	2.0	2.0	1.5	3.0		
Maximum Green I	15	60	25	25	15	60		
Maximum Green II								
Yellow Clearance	5.0	5.0	4.0	4.0	5.0	5.0		
All Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0		
Phase Recall	OFF	MIN	OFF	OFF	OFF	MIN		
Detector Delay								
Walk		7	7	7		7		
Pedestrian Clearance		21	31	31		21		
Permissive	5 SECT				5 SECT			
Flash Operation		YELLOW	RED	RED		YELLOW		

Attachment

NOTES:

1. ANTI-BACKDOWN NORTH/SOUTH: PHASES 2+6 ON--->OMIT PHASES 1+5.
2. MOD. 9 UPDATES NS/NSL YELLOW CLEARANCE VALUES PER FDOT STANDARDS.

Submitted By _____

Approved By _____

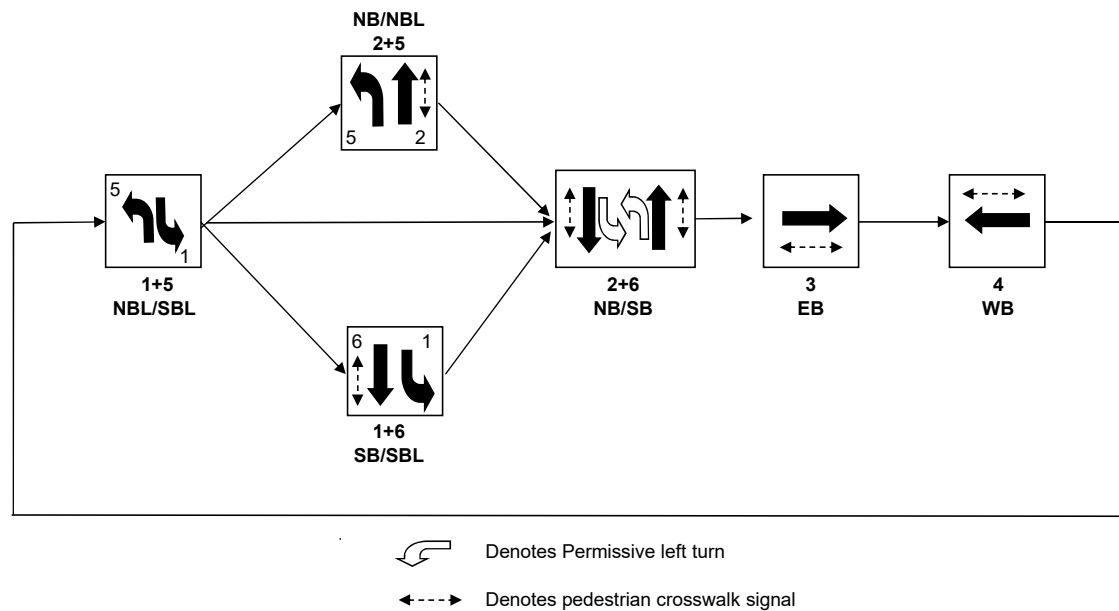
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Sequence of Operation for (1261) Federal Hwy (US 1/SR 5) and McNab Road/SE 15 Street

Pompano Beach



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Station : 1261 - US 1 & McNab Rd/SE 15 St (Standard File)

Phase	1 (SL)	2 (NT)	3 (ET)	4 (WT)	5 (NL)	6 (ST)	7	8	9	10	11	12	13	14	15	16
Walk		7	7	7		7										
Ped Clearance		21	31	31		21										
Min Green	4	12	6	6	4	12										
Gap Ext	1.5	3	2	2	1.5	3										
Max1	15	60	25	25	15	60										
Max2																
Yellow Clr	5	5	4	4	5	5			3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2	2	2	2	2			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON	ON	ON	ON	ON										
Auto Flash Entry				ON												
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall				ON												
Max Recall		ON				ON										
Ped Recall																
Soft Recall																
Dual Entry																
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON	ON	ON	ON	ON
Override Higher Preempt	ON	ON	ON	ON	ON	ON
Flash in Dwell	ON	ON	ON	ON	ON	ON
Link to Preempt						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1						
Dwell Cyc Veh 2						
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						
Dwell Cyc Veh 7						
Dwell Cyc Veh 8						
Dwell Cyc Veh 9						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

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APPENDIX I

SYNCHRO Output

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03/05/2025

Existing (2024) SYNCHRO Output





















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Timings

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	342	18	274	123	61	5	175	1361	17	1530
Future Volume (vph)	342	18	274	123	61	5	175	1361	17	1530
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	3	3		4	4		5	2	1	6
Permitted Phases			3			4	2		6	
Detector Phase	3	3	3	4	4	4	5	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	12.0	4.0	12.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.0	35.0	11.0	35.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	25.0	79.0	25.0	79.0
Total Split (%)	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	15.6%	49.4%	15.6%	49.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	21.2	21.2	21.2	14.2	14.2	14.2	105.6	98.4	87.1	82.5
Actuated g/C Ratio	0.13	0.13	0.13	0.09	0.09	0.09	0.66	0.62	0.54	0.52
v/c Ratio	0.91	0.92	0.76	0.68	0.69	0.02	0.88	0.51	0.11	0.77
Control Delay (s/veh)	107.8	111.0	29.8	92.6	92.8	0.2	81.2	19.3	13.7	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	107.8	111.0	29.8	92.6	92.8	0.2	81.2	19.3	13.7	34.9
LOS	F	F	C	F	F	A	F	B	B	C
Approach Delay (s/veh)		75.0			90.1			26.2		34.7
Approach LOS		E			F			C		C

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 55 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay (s/veh): 40.2





Intersection LOS: D

Intersection Capacity Utilization 80.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 101: S. Federal Hwy/US 1 & E. McNab Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
25 s	79 s	28 s	28 s
 Ø5	 Ø6 (R)		
25 s	79 s		

Existing AM Peak Hour

Synchro 12 Light Report











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Queues

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	207	311	102	107	6	199	1578	19	1982
v/c Ratio	0.91	0.92	0.76	0.68	0.69	0.02	0.88	0.51	0.11	0.77
Control Delay (s/veh)	107.8	111.0	29.8	92.6	92.8	0.2	81.2	19.3	13.7	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	107.8	111.0	29.8	92.6	92.8	0.2	81.2	19.3	13.7	34.9
Queue Length 50th (ft)	222	227	74	110	116	0	155	353	7	609
Queue Length 95th (ft)	#364	#375	183	172	178	0	#258	424	18	718
Internal Link Dist (ft)	990				992				1534	
Turn Bay Length (ft)	230		280		140		140		285	
Base Capacity (vph)	231	232	416	231	239	313	255	3116	323	2576
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.89	0.75	0.44	0.45	0.02	0.78	0.51	0.06	0.77

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

101: S. Federal Hwy/US 1 & E. McNab Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	18	274	123	61	5	175	1361	27	17	1530	214
Future Volume (vph)	342	18	274	123	61	5	175	1361	27	17	1530	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1693	1549	1681	1739	1555	1770	5067		1770	4977	
Flt Permitted	0.95	0.96	1.00	0.95	0.98	1.00	0.04	1.00		0.13	1.00	
Satd. Flow (perm)	1681	1693	1549	1681	1739	1555	83	5067		243	4977	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	389	20	311	140	69	6	199	1547	31	19	1739	243
RTOR Reduction (vph)	0	0	205	0	0	5	0	1	0	0	10	0
Lane Group Flow (vph)	202	207	106	102	107	1	199	1577	0	19	1972	0
Confl. Peds. (#/hr)	5		8	8		5	1		2	2		1
Confl. Bikes (#/hr)									8			2
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2			6		
Actuated Green, G (s)	21.2	21.2	21.2	14.2	14.2	14.2	105.6	95.6		85.5	82.5	
Effective Green, g (s)	21.2	21.2	21.2	14.2	14.2	14.2	105.6	95.6		85.5	82.5	
Actuated g/C Ratio	0.13	0.13	0.13	0.09	0.09	0.09	0.66	0.60		0.53	0.52	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	222	224	205	149	154	138	224	3027		158	2566	
v/s Ratio Prot	0.12	c0.12		0.06	c0.06		c0.09	0.31		0.00	0.40	
v/s Ratio Perm			0.07			0.00	c0.49			0.06		
v/c Ratio	0.91	0.92	0.52	0.68	0.69	0.00	0.89	0.52		0.12	0.77	
Uniform Delay, d1	68.5	68.6	64.6	70.7	70.8	66.5	52.1	18.8		17.9	31.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.7	39.1	0.9	9.9	10.4	0.0	31.0	0.6		0.1	2.3	
Delay (s)	104.2	107.7	65.6	80.6	81.2	66.5	83.1	19.5		18.0	33.4	
Level of Service	F	F	E	F	F	E	F	B		B	C	
Approach Delay (s/veh)		88.5			80.5			26.6			33.2	
Approach LOS		F			F			C			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			41.3									
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			80.8%									
Analysis Period (min)			15									
c Critical Lane Group												

Existing AM Peak Hour

Synchro 12 Light Report

DRC

PZ24-12000027

03/05/2025

HCM 7th Signalized Intersection Summary
101: S. Federal Hwy/US 1 & E. McNab Road

HCM 7th Edition methodology expects strict NEMA phasing.

HCM 7th TWSC
201: S. Federal Hwy/US 1 & North Driveway

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	2	1565	1	0	1930
Future Vol, veh/h	0	2	1565	1	0	1930
Conflicting Peds, #/hr	0	0	0	7	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	1758	1	0	2169
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	887	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	4	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3	-	-	-	-
Pot Cap-1 Maneuver	0	634	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	629	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v10.74		0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	629		-		
HCM Lane V/C Ratio	-	0.004		-		
HCM Control Delay (s/veh)	-	10.7		-		
HCM Lane LOS	-	B		-		
HCM 95th %tile Q(veh)	-	0		-		

HCM 7th TWSC
202: S. Federal Hwy/US 1 & South Driveway

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗ ↑↑↑			↗ ↑↑↑		↗
Traffic Vol, veh/h	0	0	80	0	0	4	13	1526	4	14	1886	6
Future Vol, veh/h	0	0	80	0	0	4	13	1526	4	14	1886	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	90	0	0	4	15	1715	4	16	2119	7





















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	1060	-	-	863	2126	0	0	1722	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	4	-	-	4	4	-	-	4	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3	3	-	-	3	-	-
Pot Cap-1 Maneuver	0	0	477	0	0	645	241	-	-	334	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	477	-	-	643	241	-	-	333	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.29		10.63	0.18	0.12
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	241	-	-	477	643	333	-
HCM Lane V/C Ratio	0.061	-	-	0.188	0.007	0.047	-
HCM Control Delay (s/veh)	20.9	-	-	14.3	10.6	16.4	-
HCM Lane LOS	C	-	-	B	B	C	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0	0.1	-

Timings

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	318	24	182	58	64	19	306	1703	30	1361
Future Volume (vph)	318	24	182	58	64	19	306	1703	30	1361
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	3	3		4	4		5	2	1	6
Permitted Phases			3			4	2		6	
Detector Phase	3	3	3	4	4	4	5	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	12.0	4.0	12.0
Minimum Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	11.0	35.0	11.0	35.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	31.0	67.0	25.0	61.0
Total Split (%)	24.4%	24.4%	24.4%	24.4%	24.4%	24.4%	17.2%	37.2%	13.9%	33.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	24.5	24.5	24.5	12.0	12.0	12.0	124.5	114.6	81.2	76.0
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.69	0.64	0.45	0.42
v/c Ratio	0.80	0.78	0.51	0.50	0.63	0.10	0.73	0.59	0.24	0.86
Control Delay (s/veh)	99.2	97.2	12.3	95.4	104.4	1.0	61.1	21.8	21.4	51.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	99.2	97.2	12.3	95.4	104.4	1.0	61.1	21.8	21.4	51.1
LOS	F	F	B	F	F	A	E	C	C	D
Approach Delay (s/veh)		68.3			87.3			27.6		50.5
Approach LOS		E			F			C		D

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 39 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay (s/veh): 43.1

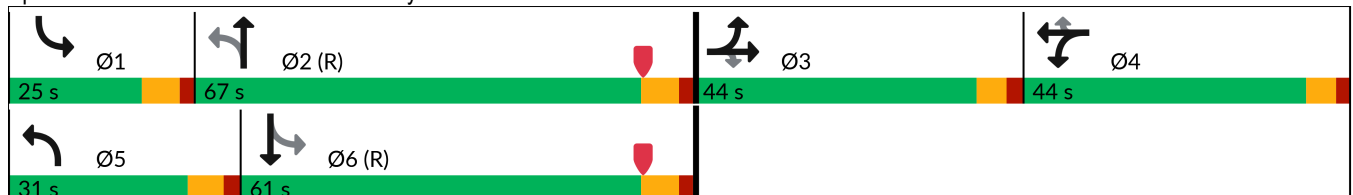
Intersection LOS: D

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 101: S. Federal Hwy/US 1 & E. McNab Road



Existing PM Peak Hour

Synchro 12 Light Report











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Queues

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	183	181	194	56	74	20	326	1886	32	1793
v/c Ratio	0.80	0.78	0.51	0.50	0.63	0.10	0.73	0.59	0.24	0.86
Control Delay (s/veh)	99.2	97.2	12.3	95.4	104.4	1.0	61.1	21.8	21.4	51.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	99.2	97.2	12.3	95.4	104.4	1.0	61.1	21.8	21.4	51.1
Queue Length 50th (ft)	225	222	0	68	91	0	312	465	11	663
Queue Length 95th (ft)	307	303	75	122	151	0	443	643	31	#919
Internal Link Dist (ft)		990			992			1534		468
Turn Bay Length (ft)	230		280	140		140	285		220	
Base Capacity (vph)	354	358	482	354	372	406	448	3216	260	2092
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.51	0.40	0.16	0.20	0.05	0.73	0.59	0.12	0.86

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

101: S. Federal Hwy/US 1 & E. McNab Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	24	182	58	64	19	306	1703	70	30	1361	324
Future Volume (vph)	318	24	182	58	64	19	306	1703	70	30	1361	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1697	1557	1681	1762	1542	1770	5050		1770	4910	
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.05	1.00		0.11	1.00	
Satd. Flow (perm)	1681	1697	1557	1681	1762	1542	90	5050		200	4910	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	338	26	194	62	68	20	326	1812	74	32	1448	345
RTOR Reduction (vph)	0	0	168	0	0	19	0	1	0	0	18	0
Lane Group Flow (vph)	183	181	26	56	74	1	326	1885	0	32	1775	0
Confl. Peds. (#/hr)	10		1	1		10	3		2	2		3
Confl. Bikes (#/hr)			2						4			1
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2			6		
Actuated Green, G (s)	24.5	24.5	24.5	12.0	12.0	12.0	124.5	113.2		80.3	76.0	
Effective Green, g (s)	24.5	24.5	24.5	12.0	12.0	12.0	124.5	113.2		80.3	76.0	
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.69	0.63		0.45	0.42	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	228	230	211	112	117	102	449	3175		126	2073	
v/s Ratio Prot	c0.11	0.11		0.03	c0.04		c0.17	0.37		0.01	c0.36	
v/s Ratio Perm			0.02			0.00	0.34			0.11		
v/c Ratio	0.80	0.79	0.13	0.50	0.63	0.01	0.73	0.59		0.25	0.86	
Uniform Delay, d1	75.4	75.2	68.3	81.1	81.9	78.5	53.1	19.8		28.1	47.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.2	15.0	0.1	1.3	7.9	0.0	4.9	0.8		0.4	4.8	
Delay (s)	92.6	90.2	68.4	82.4	89.8	78.5	58.1	20.6		28.5	51.9	
Level of Service	F	F	E	F	F	E	E	C		C	D	
Approach Delay (s/veh)		83.4			85.5			26.1			51.4	
Approach LOS		F			F			C			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			44.5									D
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			180.0									
Intersection Capacity Utilization			83.8%									E
Analysis Period (min)			15									
c Critical Lane Group												

Existing PM Peak Hour

Synchro 12 Light Report

DRC

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HCM 7th Signalized Intersection Summary
101: S. Federal Hwy/US 1 & E. McNab Road

HCM 7th Edition methodology expects strict NEMA phasing.

HCM 7th TWSC
201: S. Federal Hwy/US 1 & North Driveway

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	27	2129	2	0	1604
Future Vol, veh/h	0	27	2129	2	0	1604
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	29	2289	2	0	1725

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	1152	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3	-
Pot Cap-1 Maneuver	0	519	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	516	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v12.39		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	516
HCM Lane V/C Ratio	-	-	0.056
HCM Control Delay (s/veh)	-	-	12.4
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

HCM 7th TWSC
202: S. Federal Hwy/US 1 & South Driveway

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↰			↰	↰ ↑↑↑			↰ ↑↑↑		↰
Traffic Vol, veh/h	0	0	32	0	0	13	19	2097	2	6	1574	18
Future Vol, veh/h	0	0	32	0	0	13	19	2097	2	6	1574	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	92	93	92	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	34	0	0	14	21	2255	2	6	1692	19

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	846	-	-	1132	1712	0	0	2261	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	4	-	-	4	4	-	-	4	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3	3	-	-	3	-	-
Pot Cap-1 Maneuver	0	0	549	0	0	527	336	-	-	216	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	549	-	-	525	336	-	-	215	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	12		12.05		0.15		0.08	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	336	-	-	549	525	215	-
HCM Lane V/C Ratio	0.061	-	-	0.063	0.027	0.03	-
HCM Control Delay (s/veh)	16.4	-	-	12	12	22.2	-
HCM Lane LOS	C	-	-	B	B	C	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.1	0.1	-

Future (2026) Background SYNCHRO Output





















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Timings

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	354	18	284	127	63	5	182	1409	17	1584
Future Volume (vph)	354	18	284	127	63	5	182	1409	17	1584
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	3	3		4	4		5	2	1	6
Permitted Phases			3			4	2		6	
Detector Phase	3	3	3	4	4	4	5	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	12.0	4.0	12.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.0	35.0	11.0	35.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	25.0	79.0	25.0	79.0
Total Split (%)	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	15.6%	49.4%	15.6%	49.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	21.4	21.4	21.4	14.5	14.5	14.5	105.0	97.8	87.5	82.8
Actuated g/C Ratio	0.13	0.13	0.13	0.09	0.09	0.09	0.66	0.61	0.55	0.52
v/c Ratio	0.93	0.94	0.79	0.70	0.69	0.02	0.97	0.53	0.12	0.79
Control Delay (s/veh)	111.4	113.8	33.7	93.6	92.0	0.2	100.7	19.9	13.9	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	111.4	113.8	33.7	93.6	92.0	0.2	100.7	19.9	13.9	35.5
LOS	F	F	C	F	F	A	F	B	B	D
Approach Delay (s/veh)		78.4			90.3			29.0		35.3
Approach LOS		E			F			C		D

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 55 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay (s/veh): 42.0




Intersection LOS: D

Intersection Capacity Utilization 82.7%

ICU Level of Service E











Analysis Period (min) 15

Splits and Phases: 101: S. Federal Hwy/US 1 & E. McNab Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
25 s	79 s	28 s	28 s
 Ø5	 Ø6 (R)		
25 s	79 s		

Queues

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	209	213	323	107	109	6	207	1633	19	2052
v/c Ratio	0.93	0.94	0.79	0.70	0.69	0.02	0.97	0.53	0.12	0.79
Control Delay (s/veh)	111.4	113.8	33.7	93.6	92.0	0.2	100.7	19.9	13.9	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	111.4	113.8	33.7	93.6	92.0	0.2	100.7	19.9	13.9	35.5
Queue Length 50th (ft)	230	234	92	116	118	0	168	373	7	637
Queue Length 95th (ft)	#382	#391	203	178	180	0	#286	447	19	759
Internal Link Dist (ft)		990			992			1534		468
Turn Bay Length (ft)	230		280	140		140	285		220	
Base Capacity (vph)	231	232	413	231	239	313	250	3098	312	2587
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.92	0.78	0.46	0.46	0.02	0.83	0.53	0.06	0.79

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis




101: S. Federal Hwy/US 1 & E. McNab Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	18	284	127	63	5	182	1409	28	17	1584	222
Future Volume (vph)	354	18	284	127	63	5	182	1409	28	17	1584	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1693	1549	1681	1740	1555	1770	5067		1770	4977	
Flt Permitted	0.95	0.96	1.00	0.95	0.98	1.00	0.04	1.00		0.12	1.00	
Satd. Flow (perm)	1681	1693	1549	1681	1740	1555	83	5067		221	4977	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	402	20	323	144	72	6	207	1601	32	19	1800	252
RTOR Reduction (vph)	0	0	202	0	0	5	0	1	0	0	10	0
Lane Group Flow (vph)	209	213	121	107	109	1	207	1632	0	19	2042	0
Confl. Peds. (#/hr)	5		8	8		5	1		2	2		1
Confl. Bikes (#/hr)									8			2
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2			6		
Actuated Green, G (s)	21.4	21.4	21.4	14.5	14.5	14.5	105.1	95.1		85.9	82.9	
Effective Green, g (s)	21.4	21.4	21.4	14.5	14.5	14.5	105.1	95.1		85.9	82.9	
Actuated g/C Ratio	0.13	0.13	0.13	0.09	0.09	0.09	0.66	0.59		0.54	0.52	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	224	226	207	152	157	140	214	3011		147	2578	
v/s Ratio Prot	0.12	c0.13		c0.06	0.06		c0.09	0.32		0.00	0.41	
v/s Ratio Perm			0.08			0.00	c0.54			0.07		
v/c Ratio	0.93	0.94	0.59	0.70	0.69	0.00	0.97	0.54		0.13	0.79	
Uniform Delay, d1	68.6	68.7	65.1	70.7	70.6	66.2	54.2	19.4		17.9	31.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	41.3	43.5	2.7	11.4	10.2	0.0	51.4	0.7		0.1	2.6	
Delay (s)	109.9	112.1	67.8	82.1	80.8	66.2	105.6	20.1		18.1	34.1	
Level of Service	F	F	E	F	F	E	F	C		B	C	
Approach Delay (s/veh)		92.3			81.0			29.7			33.9	
Approach LOS		F			F			C			C	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			43.4									
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			82.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary
101: S. Federal Hwy/US 1 & E. McNab Road

HCM 7th Edition methodology expects strict NEMA phasing.

HCM 7th TWSC
201: S. Federal Hwy/US 1 & North Driveway

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	1620	1	0	1998
Future Vol, veh/h	0	2	1620	1	0	1998
Conflicting Peds, #/hr	0	0	0	7	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	1820	1	0	2245
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	918	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	4	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3	-	-	-	-
Pot Cap-1 Maneuver	0	619	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	615	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v10.87		0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	615		-		
HCM Lane V/C Ratio	-	0.004		-		
HCM Control Delay (s/veh)	-	10.9		-		
HCM Lane LOS	-	B		-		
HCM 95th %tile Q(veh)	-	0		-		

HCM 7th TWSC
202: S. Federal Hwy/US 1 & South Driveway

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↰			↰	↰ ↑↑↑			↰ ↑↑↑		↰
Traffic Vol, veh/h	0	0	83	0	0	4	13	1580	4	14	1952	7
Future Vol, veh/h	0	0	83	0	0	4	13	1580	4	14	1952	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	93	0	0	4	15	1775	4	16	2193	8





















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	1097	-	-	893	2201	0	0	1783	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	4	-	-	4	4	-	-	4	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3	4	-	-	3	-	-
Pot Cap-1 Maneuver	0	0	465	0	0	631	209	-	-	318	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	465	-	-	629	209	-	-	317	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v14.67			10.76		0.19		0.12	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	209	-	-	465	629	317	-
HCM Lane V/C Ratio	0.07	-	-	0.2	0.007	0.05	-
HCM Control Delay (s/veh)	23.5	-	-	14.7	10.8	16.9	-
HCM Lane LOS	C	-	-	B	B	C	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0	0.2	-

Timings

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	329	25	188	60	66	20	316	1763	32	1409
Future Volume (vph)	329	25	188	60	66	20	316	1763	32	1409
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	3	3		4	4		5	2	1	6
Permitted Phases			3			4	2		6	
Detector Phase	3	3	3	4	4	4	5	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	12.0	4.0	12.0
Minimum Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	11.0	35.0	11.0	35.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	31.0	67.0	25.0	61.0
Total Split (%)	24.4%	24.4%	24.4%	24.4%	24.4%	24.4%	17.2%	37.2%	13.9%	33.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	25.1	25.1	25.1	12.2	12.2	12.2	123.7	113.7	77.8	72.7
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.69	0.63	0.43	0.40
v/c Ratio	0.81	0.80	0.51	0.51	0.64	0.11	0.71	0.61	0.27	0.93
Control Delay (s/veh)	99.0	97.5	12.0	95.6	104.5	1.1	58.7	23.0	23.6	58.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	99.0	97.5	12.0	95.6	104.5	1.1	58.7	23.0	23.6	58.6
LOS	F	F	B	F	F	A	E	C	C	E
Approach Delay (s/veh)		68.3			87.1			28.2		58.0
Approach LOS		E			F			C		E

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 39 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay (s/veh): 46.2

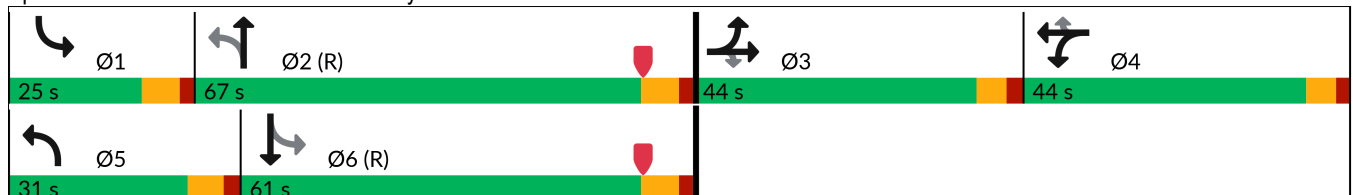
Intersection LOS: D

Intersection Capacity Utilization 85.9%

ICU Level of Service E











Analysis Period (min) 15

Splits and Phases: 101: S. Federal Hwy/US 1 & E. McNab Road



Queues

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	188	200	58	76	21	336	1954	34	1856
v/c Ratio	0.81	0.80	0.51	0.51	0.64	0.11	0.71	0.61	0.27	0.93
Control Delay (s/veh)	99.0	97.5	12.0	95.6	104.5	1.1	58.7	23.0	23.6	58.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	99.0	97.5	12.0	95.6	104.5	1.1	58.7	23.0	23.6	58.6
Queue Length 50th (ft)	232	230	0	71	93	0	319	500	12	721
Queue Length 95th (ft)	314	312	77	125	155	0	454	689	32	#1001
Internal Link Dist (ft)		990			992			1534		468
Turn Bay Length (ft)	230		280	140		140	285		220	
Base Capacity (vph)	354	358	486	354	372	406	473	3190	252	2000
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.53	0.41	0.16	0.20	0.05	0.71	0.61	0.13	0.93

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

101: S. Federal Hwy/US 1 & E. McNab Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	25	188	60	66	20	316	1763	73	32	1409	336
Future Volume (vph)	329	25	188	60	66	20	316	1763	73	32	1409	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1697	1557	1681	1763	1542	1770	5049		1770	4910	
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.05	1.00		0.10	1.00	
Satd. Flow (perm)	1681	1697	1557	1681	1763	1542	93	5049		186	4910	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	350	27	200	64	70	21	336	1876	78	34	1499	357
RTOR Reduction (vph)	0	0	172	0	0	20	0	2	0	0	19	0
Lane Group Flow (vph)	189	188	28	58	76	1	336	1952	0	34	1837	0
Confl. Peds. (#/hr)	10		1	1		10	3		2	2		3
Confl. Bikes (#/hr)			2						4			1
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2			6		
Actuated Green, G (s)	25.1	25.1	25.1	12.2	12.2	12.2	123.7	112.3		77.1	72.7	
Effective Green, g (s)	25.1	25.1	25.1	12.2	12.2	12.2	123.7	112.3		77.1	72.7	
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.69	0.62		0.43	0.40	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	234	236	217	113	119	104	473	3150		118	1983	
v/s Ratio Prot	c0.11	0.11		0.03	c0.04		c0.17	0.39		0.01	c0.37	
v/s Ratio Perm			0.02			0.00	0.31			0.12		
v/c Ratio	0.81	0.80	0.13	0.51	0.64	0.01	0.71	0.62		0.29	0.93	
Uniform Delay, d1	75.1	75.0	67.9	81.0	81.8	78.3	52.0	20.8		30.0	51.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.2	15.8	0.1	1.6	8.0	0.0	4.2	0.9		0.5	9.0	
Delay (s)	92.4	90.8	68.0	82.7	89.8	78.3	56.1	21.7		30.5	60.1	
Level of Service	F	F	E	F	F	E	E	C		C	E	
Approach Delay (s/veh)		83.4			85.6			26.7			59.5	
Approach LOS		F			F			C			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			47.9									
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			180.0									
Intersection Capacity Utilization			85.9%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary
101: S. Federal Hwy/US 1 & E. McNab Road

HCM 7th Edition methodology expects strict NEMA phasing.

HCM 7th TWSC
201: S. Federal Hwy/US 1 & North Driveway

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑			↗ ↑↑↑
Traffic Vol, veh/h	0	28	2205	2	0	1661
Future Vol, veh/h	0	28	2205	2	0	1661
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	30	2371	2	0	1786

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	1193	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3	-
Pot Cap-1 Maneuver	0	503	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	500	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v12.65		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	500
HCM Lane V/C Ratio	-	-	0.06
HCM Control Delay (s/veh)	-	-	12.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

HCM 7th TWSC
202: S. Federal Hwy/US 1 & South Driveway

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗ ↑↑↑			↗ ↑↑↑		↗
Traffic Vol, veh/h	0	0	33	0	0	13	20	2171	2	7	1630	18
Future Vol, veh/h	0	0	33	0	0	13	20	2171	2	7	1630	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	100	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	92	93	92	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	35	0	0	14	22	2334	2	8	1753	19

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	876	-	-	1172	1772	0	0	2341	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	4	-	-	4	4	-	-	4	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3	3	-	-	3	-	-
Pot Cap-1 Maneuver	0	0	538	0	0	511	321	-	-	203	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	538	-	-	509	321	-	-	202	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.16		12.27	0.16	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	321	-	-	538	509	202	-
HCM Lane V/C Ratio	0.068	-	-	0.066	0.027	0.037	-
HCM Control Delay (s/veh)	17	-	-	12.2	12.3	23.5	-
HCM Lane LOS	C	-	-	B	B	C	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.1	0.1	-

Future (2026) Total SYNCHRO Output





















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03/05/2025

Timings

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	354	18	286	128	63	5	203	1425	17	1590
Future Volume (vph)	354	18	286	128	63	5	203	1425	17	1590
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	3	3		4	4		5	2	1	6
Permitted Phases			3			4	2		6	
Detector Phase	3	3	3	4	4	4	5	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	12.0	4.0	12.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.0	35.0	11.0	35.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	25.0	79.0	25.0	79.0
Total Split (%)	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	15.6%	49.4%	15.6%	49.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	21.4	21.4	21.4	14.5	14.5	14.5	105.0	97.8	82.8	78.1
Actuated g/C Ratio	0.13	0.13	0.13	0.09	0.09	0.09	0.66	0.61	0.52	0.49
v/c Ratio	0.93	0.94	0.80	0.70	0.70	0.02	0.87	0.53	0.12	0.84
Control Delay (s/veh)	111.4	113.8	34.4	93.6	92.6	0.2	75.7	20.1	14.4	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	111.4	113.8	34.4	93.6	92.6	0.2	75.7	20.1	14.4	40.3
LOS	F	F	C	F	F	A	E	C	B	D
Approach Delay (s/veh)		78.6			90.6			26.9		40.0
Approach LOS		E			F			C		D

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 55 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay (s/veh): 43.1







Intersection LOS: D

Intersection Capacity Utilization 84.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 101: S. Federal Hwy/US 1 & E. McNab Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
25 s	79 s	28 s	28 s
 Ø5	 Ø6 (R)		
25 s	79 s		

Future AM Peak Hour

Synchro 12 Light Report











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03/05/2025

Queues

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	209	213	325	107	110	6	231	1653	19	2059
v/c Ratio	0.93	0.94	0.80	0.70	0.70	0.02	0.87	0.53	0.12	0.84
Control Delay (s/veh)	111.4	113.8	34.4	93.6	92.6	0.2	75.7	20.1	14.4	40.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	111.4	113.8	34.4	93.6	92.6	0.2	75.7	20.1	14.4	40.3
Queue Length 50th (ft)	230	234	96	116	120	0	185	380	7	698
Queue Length 95th (ft)	#382	#391	209	178	183	0	#339	455	19	764
Internal Link Dist (ft)	990				992				1534	
Turn Bay Length (ft)	230			280	140			140	285	220
Base Capacity (vph)	231	232	413	231	239	313	274	3098	310	2442
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.92	0.79	0.46	0.46	0.02	0.84	0.53	0.06	0.84

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

101: S. Federal Hwy/US 1 & E. McNab Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	18	286	128	63	5	203	1425	30	17	1590	222
Future Volume (vph)	354	18	286	128	63	5	203	1425	30	17	1590	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1693	1549	1681	1740	1555	1770	5066		1770	4977	
Flt Permitted	0.95	0.96	1.00	0.95	0.98	1.00	0.05	1.00		0.12	1.00	
Satd. Flow (perm)	1681	1693	1549	1681	1740	1555	87	5066		227	4977	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	402	20	325	145	72	6	231	1619	34	19	1807	252
RTOR Reduction (vph)	0	0	201	0	0	5	0	1	0	0	11	0
Lane Group Flow (vph)	209	213	124	107	110	1	231	1652	0	19	2048	0
Confl. Peds. (#/hr)	5		8	8		5	1		2	2		1
Confl. Bikes (#/hr)									8			2
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2			6		
Actuated Green, G (s)	21.4	21.4	21.4	14.5	14.5	14.5	105.1	95.1		81.2	78.2	
Effective Green, g (s)	21.4	21.4	21.4	14.5	14.5	14.5	105.1	95.1		81.2	78.2	
Actuated g/C Ratio	0.13	0.13	0.13	0.09	0.09	0.09	0.66	0.59		0.51	0.49	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	224	226	207	152	157	140	266	3011		144	2432	
v/s Ratio Prot	0.12	c0.13		c0.06	0.06		c0.11	0.33		0.00	0.41	
v/s Ratio Perm			0.08			0.00	c0.46			0.06		
v/c Ratio	0.93	0.94	0.60	0.70	0.70	0.00	0.87	0.55		0.13	0.84	
Uniform Delay, d1	68.6	68.7	65.3	70.7	70.6	66.2	53.1	19.5		19.9	35.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	41.3	43.5	3.1	11.4	10.9	0.0	23.8	0.7		0.2	3.8	
Delay (s)	109.9	112.1	68.4	82.1	81.6	66.2	76.9	20.3		20.0	39.3	
Level of Service	F	F	E	F	F	E	E	C		C	D	
Approach Delay (s/veh)		92.5			81.4			27.2			39.1	
Approach LOS		F			F			C			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			44.6									
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			160.0									
Intersection Capacity Utilization			84.0%									
Analysis Period (min)			15									
c Critical Lane Group												

Future AM Peak Hour

Synchro 12 Light Report

DRC

PZ24-12000027

03/05/2025

HCM 7th Signalized Intersection Summary
101: S. Federal Hwy/US 1 & E. McNab Road

HCM 7th Edition methodology expects strict NEMA phasing.

HCM 7th TWSC

201: S. Federal Hwy/US 1 & North Driveway (Outbound Only)

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↑↑↑			↑↑↑
Traffic Vol, veh/h	0	45	1620	0	0	2024
Future Vol, veh/h	0	45	1620	0	0	2024
Conflicting Peds, #/hr	0	0	0	7	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	51	1820	0	0	2274

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	910	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3	-
Pot Cap-1 Maneuver	0	623	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	623	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v11.29		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 623	-
HCM Lane V/C Ratio	- 0.081	-
HCM Control Delay (s/veh)	- 11.3	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.3	-

Future AM Peak Hour

Synchro 12 Light Report

DRC

PZ24-12000027

03/05/2025

HCM 7th TWSC

202: S. Federal Hwy/US 1 & South Driveway (Inbound Only)

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗				↗ ↑↑↑			↗ ↑↑↑		↗
Traffic Vol, veh/h	0	0	83	0	0	0	13	1580	12	23	1969	7
Future Vol, veh/h	0	0	83	0	0	0	13	1580	12	23	1969	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	93	0	0	0	15	1775	13	26	2212	8





















Major/Minor	Minor2			Major1	Major2				
Conflicting Flow All	-	-	1106	2220	0	0	1792	0	0
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	4	4	-	-	4	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	3	-	-	3	-	-
Pot Cap-1 Maneuver	0	0	462	224	-	-	316	-	-
Stage 1	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	-	0	462	224	-	-	316	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-	-	-	-
Stage 1	-	0	-	-	-	-	-	-	-
Stage 2	-	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v14.75		0.18	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	224	-	-	462	316	-	-
HCM Lane V/C Ratio	0.065	-	-	0.202	0.082	-	-
HCM Control Delay (s/veh)	22.2	-	-	14.7	17.4	-	-
HCM Lane LOS	C	-	-	B	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.3	-	-

Timings

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	329	25	192	62	66	20	333	1776	32	1427
Future Volume (vph)	329	25	192	62	66	20	333	1776	32	1427
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	3	3		4	4		5	2	1	6
Permitted Phases			3			4	2		6	
Detector Phase	3	3	3	4	4	4	5	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	12.0	4.0	12.0
Minimum Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	11.0	35.0	11.0	35.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	31.0	67.0	25.0	61.0
Total Split (%)	24.4%	24.4%	24.4%	24.4%	24.4%	24.4%	17.2%	37.2%	13.9%	33.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	25.3	25.3	25.3	12.3	12.3	12.3	123.4	113.4	73.0	67.8
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.69	0.63	0.41	0.38
v/c Ratio	0.80	0.79	0.52	0.52	0.64	0.10	0.68	0.62	0.28	1.00
Control Delay (s/veh)	98.0	96.6	12.0	95.7	104.6	1.1	55.1	23.3	25.3	75.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	98.0	96.6	12.0	95.7	104.6	1.1	55.1	23.3	25.3	75.0
LOS	F	F	B	F	F	A	E	C	C	E
Approach Delay (s/veh)		67.3			87.4			28.2		74.1
Approach LOS		E			F			C		E

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 39 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 52.3

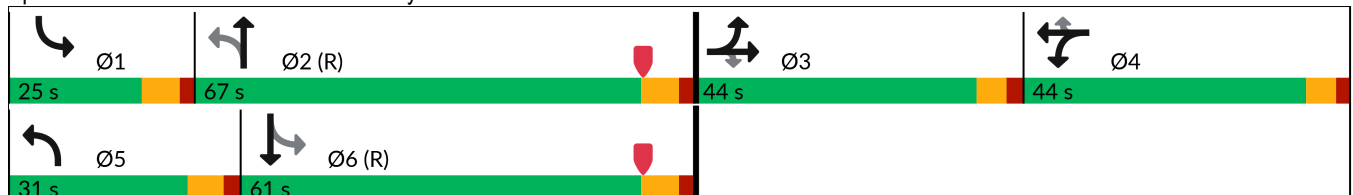
Intersection LOS: D

Intersection Capacity Utilization 87.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 101: S. Federal Hwy/US 1 & E. McNab Road



Future PM Peak Hour

Synchro 12 Light Report











DRC

PZ24-12000027

03/05/2025

Queues

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	188	204	59	77	21	354	1969	34	1875
v/c Ratio	0.80	0.79	0.52	0.52	0.64	0.10	0.68	0.62	0.28	1.00
Control Delay (s/veh)	98.0	96.6	12.0	95.7	104.6	1.1	55.1	23.3	25.3	75.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	98.0	96.6	12.0	95.7	104.6	1.1	55.1	23.3	25.3	75.0
Queue Length 50th (ft)	231	229	0	72	94	0	333	516	12	766
Queue Length 95th (ft)	314	312	77	127	157	0	471	698	32	#1054
Internal Link Dist (ft)		990			992			1534		468
Turn Bay Length (ft)	230		280	140		140	285		220	
Base Capacity (vph)	354	358	490	354	371	406	518	3181	245	1867
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.53	0.42	0.17	0.21	0.05	0.68	0.62	0.14	1.00

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

101: S. Federal Hwy/US 1 & E. McNab Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	25	192	62	66	20	333	1776	75	32	1427	336
Future Volume (vph)	329	25	192	62	66	20	333	1776	75	32	1427	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1697	1557	1681	1762	1542	1770	5048		1770	4911	
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.05	1.00		0.10	1.00	
Satd. Flow (perm)	1681	1697	1557	1681	1762	1542	100	5048		183	4911	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	350	27	204	66	70	21	354	1889	80	34	1518	357
RTOR Reduction (vph)	0	0	175	0	0	20	0	2	0	0	19	0
Lane Group Flow (vph)	189	188	29	59	77	1	354	1967	0	34	1856	0
Confl. Peds. (#/hr)	10		1	1		10	3		2	2		3
Confl. Bikes (#/hr)			2						4			1
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2			6		
Actuated Green, G (s)	25.3	25.3	25.3	12.3	12.3	12.3	123.4	112.0		72.2	67.8	
Effective Green, g (s)	25.3	25.3	25.3	12.3	12.3	12.3	123.4	112.0		72.2	67.8	
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.69	0.62		0.40	0.38	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	236	238	218	114	120	105	519	3140		112	1849	
v/s Ratio Prot	c0.11	0.11		0.04	c0.04		c0.18	0.39		0.01	c0.38	
v/s Ratio Perm			0.02			0.00	0.28			0.11		
v/c Ratio	0.80	0.79	0.13	0.52	0.64	0.01	0.68	0.63		0.30	1.00	
Uniform Delay, d1	74.9	74.8	67.7	81.0	81.7	78.2	49.5	21.1		32.9	56.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.6	14.8	0.1	1.6	8.5	0.0	2.9	1.0		0.6	21.8	
Delay (s)	91.5	89.5	67.8	82.6	90.2	78.2	52.4	22.0		33.5	77.9	
Level of Service	F	F	E	F	F	E	D	C		C	E	
Approach Delay (s/veh)		82.5			85.7			26.6			77.1	
Approach LOS		F			F			C			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			54.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			180.0				Sum of lost time (s)			26.0		
Intersection Capacity Utilization			87.2%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 7th Signalized Intersection Summary

101: S. Federal Hwy/US 1 & E. McNab Road

HCM 7th Edition methodology expects strict NEMA phasing.

HCM 7th TWSC

201: S. Federal Hwy/US 1 & North Driveway (Outbound Only)

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↑↑↑↑			↑↑↑↑
Traffic Vol, veh/h	0	73	2205	0	0	1699
Future Vol, veh/h	0	73	2205	0	0	1699
Conflicting Peds, #/hr	0	0	0	6	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	78	2371	0	0	1827

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	1185	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3	-
Pot Cap-1 Maneuver	0	506	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	506	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v13.42		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 506	-
HCM Lane V/C Ratio	- 0.155	-
HCM Control Delay (s/veh)	- 13.4	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.5	-

Future PM Peak Hour

Synchro 12 Light Report

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HCM 7th TWSC

202: S. Federal Hwy/US 1 & South Driveway (Inbound Only)

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗				↗ ↑↑↑			↗ ↑↑↑		↗
Traffic Vol, veh/h	0	0	33	0	0	0	20	2171	24	31	1644	18
Future Vol, veh/h	0	0	33	0	0	0	20	2171	24	31	1644	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	-	100	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	35	0	0	0	22	2334	26	33	1768	19

Major/Minor	Minor2			Major1		Major2			
Conflicting Flow All	-	-	884	1787	0	0	2364	0	0
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	4	4	-	-	4	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	3	-	-	3	-	-
Pot Cap-1 Maneuver	0	0	536	317	-	-	199	-	-
Stage 1	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	-	0	536	317	-	-	199	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-	-	-	-
Stage 1	-	0	-	-	-	-	-	-	-
Stage 2	-	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.2	0.16	0.49
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	317	-	-	536	199	-	-
HCM Lane V/C Ratio	0.068	-	-	0.066	0.168	-	-
HCM Control Delay (s/veh)	17.2	-	-	12.2	26.7	-	-
HCM Lane LOS	C	-	-	B	D	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.6	-	-

Future PM Peak Hour

Synchro 12 Light Report

DRC

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Future (2026) Total SYNCHRO Output – *Optimized*

DRC





















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Timings

101: S. Federal Hwy/US 1 & E. McNab Road

01/21/2025

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	354	18	286	128	63	5	203	1425	17	1590
Future Volume (vph)	354	18	286	128	63	5	203	1425	17	1590
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	3	3		4	4		5	2	1	6
Permitted Phases			3			4	2		6	
Detector Phase	3	3	3	4	4	4	5	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	12.0	4.0	12.0
Minimum Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.0	35.0	11.0	35.0
Total Split (s)	29.0	29.0	29.0	28.0	28.0	28.0	30.0	92.0	11.0	73.0
Total Split (%)	18.1%	18.1%	18.1%	17.5%	17.5%	17.5%	18.8%	57.5%	6.9%	45.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	22.0	22.0	22.0	14.5	14.5	14.5	104.5	97.2	82.9	78.2
Actuated g/C Ratio	0.14	0.14	0.14	0.09	0.09	0.09	0.65	0.61	0.52	0.49
v/c Ratio	0.90	0.91	0.79	0.70	0.70	0.02	0.89	0.54	0.12	0.84
Control Delay (s/veh)	106.1	107.7	34.8	93.6	92.6	0.2	80.7	20.5	15.2	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	106.1	107.7	34.8	93.6	92.6	0.2	80.7	20.5	15.2	40.5
LOS	F	F	C	F	F	A	F	C	B	D
Approach Delay (s/veh)		75.5			90.6			27.9		40.2
Approach LOS		E			F			C		D

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 55 (34%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay (s/veh): 43.2

Intersection LOS: D

Intersection Capacity Utilization 84.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 101: S. Federal Hwy/US 1 & E. McNab Road



Future + Opt + TL ext AM Peak Hour

Synchro 12 Light Report

Page 1

DRC

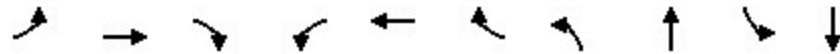
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Queues

101: S. Federal Hwy/US 1 & E. McNab Road

01/21/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	209	213	325	107	110	6	231	1653	19	2059
v/c Ratio	0.90	0.91	0.79	0.70	0.70	0.02	0.89	0.54	0.12	0.84
Control Delay (s/veh)	106.1	107.7	34.8	93.6	92.6	0.2	80.7	20.5	15.2	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	106.1	107.7	34.8	93.6	92.6	0.2	80.7	20.5	15.2	40.5
Queue Length 50th (ft)	228	233	100	116	120	0	188	386	7	687
Queue Length 95th (ft)	#370	#378	212	178	183	0	281	461	19	#861
Internal Link Dist (ft)		990			992			1534		468
Turn Bay Length (ft)	230		280	140		140	300		220	
Base Capacity (vph)	241	243	417	231	239	355	304	3079	160	2444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.88	0.78	0.46	0.46	0.02	0.76	0.54	0.12	0.84

Intersection Summary

























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

101: S. Federal Hwy/US 1 & E. McNab Road

01/21/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	18	286	128	63	5	203	1425	30	17	1590	222
Future Volume (vph)	354	18	286	128	63	5	203	1425	30	17	1590	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1693	1549	1681	1740	1555	1770	5066		1770	4977	
Flt Permitted	0.95	0.96	1.00	0.95	0.98	1.00	0.05	1.00		0.12	1.00	
Satd. Flow (perm)	1681	1693	1549	1681	1740	1555	87	5066		224	4977	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	402	20	325	145	72	6	231	1619	34	19	1807	252
RTOR Reduction (vph)	0	0	197	0	0	5	0	1	0	0	10	0
Lane Group Flow (vph)	209	213	128	107	110	1	231	1652	0	19	2049	0
Confl. Peds. (#/hr)	5		8	8		5	1		2	2		1
Confl. Bikes (#/hr)									8			2
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2			6		
Actuated Green, G (s)	22.0	22.0	22.0	14.5	14.5	14.5	104.5	94.5		81.3	78.3	
Effective Green, g (s)	22.0	22.0	22.0	14.5	14.5	14.5	104.5	94.5		81.3	78.3	
Actuated g/C Ratio	0.14	0.14	0.14	0.09	0.09	0.09	0.65	0.59		0.51	0.49	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	231	232	212	152	157	140	258	2992		142	2435	
v/s Ratio Prot	0.12	c0.13		c0.06	0.06		c0.11	0.33		0.00	0.41	
v/s Ratio Perm			0.08			0.00	c0.47			0.07		
v/c Ratio	0.90	0.92	0.61	0.70	0.70	0.00	0.90	0.55		0.13	0.84	
Uniform Delay, d1	68.0	68.1	64.9	70.7	70.6	66.2	53.6	19.9		19.9	35.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.9	36.6	3.3	11.4	10.9	0.0	29.5	0.7		0.2	3.7	
Delay (s)	101.9	104.7	68.2	82.1	81.6	66.2	83.1	20.6		20.1	39.2	
Level of Service	F	F	E	F	F	E	F	C		C	D	
Approach Delay (s/veh)		88.0			81.4			28.3			39.0	
Approach LOS		F			F			C			D	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			44.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			26.0		
Intersection Capacity Utilization			84.0%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Future + Opt + TL ext AM Peak Hour

Synchro 12 Light Report

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


















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Timings

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	329	25	192	62	66	20	333	1776	32	1427
Future Volume (vph)	329	25	192	62	66	20	333	1776	32	1427
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	3	3		4	4		5	2	1	6
Permitted Phases			3			4	2		6	
Detector Phase	3	3	3	4	4	4	5	2	1	6
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	12.0	4.0	12.0
Minimum Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	11.0	35.0	11.0	35.0
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	32.0	77.0	19.0	64.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	17.8%	42.8%	10.6%	35.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	25.3	25.3	25.3	12.3	12.3	12.3	123.4	113.4	73.8	68.6
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.69	0.63	0.41	0.38
v/c Ratio	0.80	0.79	0.52	0.52	0.64	0.09	0.69	0.62	0.28	0.99
Control Delay (s/veh)	98.3	96.8	12.0	95.7	104.6	0.7	55.7	23.3	25.3	71.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	98.3	96.8	12.0	95.7	104.6	0.7	55.7	23.3	25.3	71.7
LOS	F	F	B	F	F	A	E	C	C	E
Approach Delay (s/veh)		67.5			87.4			28.2		70.9
Approach LOS		E			F			C		E

Intersection Summary

Cycle Length: 180

Actuated Cycle Length: 180

Offset: 39 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay (s/veh): 51.1

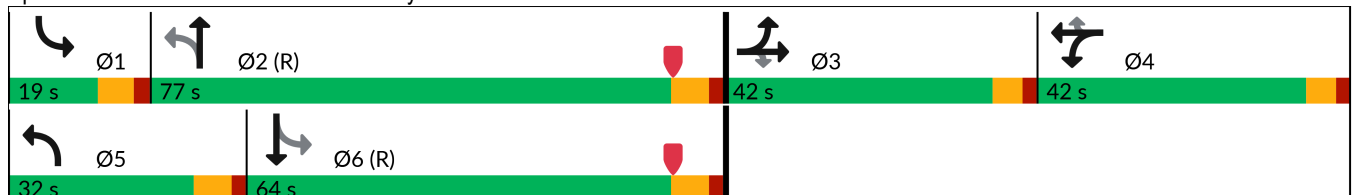
Intersection LOS: D

Intersection Capacity Utilization 87.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 101: S. Federal Hwy/US 1 & E. McNab Road



Future + OPT+ TL ext PM Peak Hour

Synchro 12 Light Report











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Queues

101: S. Federal Hwy/US 1 & E. McNab Road

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	188	204	59	77	21	354	1969	34	1875
v/c Ratio	0.80	0.79	0.52	0.52	0.64	0.09	0.69	0.62	0.28	0.99
Control Delay (s/veh)	98.3	96.8	12.0	95.7	104.6	0.7	55.7	23.3	25.3	71.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	98.3	96.8	12.0	95.7	104.6	0.7	55.7	23.3	25.3	71.7
Queue Length 50th (ft)	231	229	0	72	94	0	333	515	12	765
Queue Length 95th (ft)	314	312	77	127	157	0	471	698	32	#1057
Internal Link Dist (ft)		990			992			1534		468
Turn Bay Length (ft)	230		280	140		140	300		220	
Base Capacity (vph)	336	339	475	336	352	424	512	3183	187	1889
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.55	0.43	0.18	0.22	0.05	0.69	0.62	0.18	0.99

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

101: S. Federal Hwy/US 1 & E. McNab Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	25	192	62	66	20	333	1776	75	32	1427	336
Future Volume (vph)	329	25	192	62	66	20	333	1776	75	32	1427	336
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1697	1557	1681	1762	1542	1770	5048		1770	4911	
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.05	1.00		0.10	1.00	
Satd. Flow (perm)	1681	1697	1557	1681	1762	1542	99	5048		183	4911	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	350	27	204	66	70	21	354	1889	80	34	1518	357
RTOR Reduction (vph)	0	0	175	0	0	20	0	2	0	0	20	0
Lane Group Flow (vph)	189	188	29	59	77	1	354	1967	0	34	1855	0
Confl. Peds. (#/hr)	10		1	1		10	3		2	2		3
Confl. Bikes (#/hr)			2						4			1
Turn Type	Split	NA	Perm	Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4	2			6		
Actuated Green, G (s)	25.3	25.3	25.3	12.3	12.3	12.3	123.4	112.0		72.9	68.5	
Effective Green, g (s)	25.3	25.3	25.3	12.3	12.3	12.3	123.4	112.0		72.9	68.5	
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.69	0.62		0.41	0.38	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.5	3.0		1.5	3.0	
Lane Grp Cap (vph)	236	238	218	114	120	105	512	3140		112	1868	
v/s Ratio Prot	c0.11	0.11		0.04	c0.04		c0.18	0.39		0.01	c0.38	
v/s Ratio Perm			0.02			0.00	0.29			0.11		
v/c Ratio	0.80	0.79	0.13	0.52	0.64	0.01	0.69	0.63		0.30	0.99	
Uniform Delay, d1	74.9	74.8	67.7	81.0	81.7	78.2	50.0	21.1		32.5	55.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.6	14.8	0.1	1.6	8.5	0.0	3.2	1.0		0.6	19.3	
Delay (s)	91.5	89.5	67.8	82.6	90.2	78.2	53.3	22.0		33.0	74.8	
Level of Service	F	F	E	F	F	E	D	C		C	E	
Approach Delay (s/veh)		82.5			85.7			26.8			74.0	
Approach LOS		F			F			C			E	
Intersection Summary												
HCM 2000 Control Delay (s/veh)			53.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			180.0				Sum of lost time (s)			26.0		
Intersection Capacity Utilization			87.2%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Future + OPT+ TL ext PM Peak Hour

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APPENDIX J

NCHRP Report 745 Excerpts

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03/05/2025

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

NCHRP REPORT 745

Left-Turn Accommodations at Unsignalized Intersections

Kay Fitzpatrick
Marcus A. Brewer
William L. Eisele

TEXAS A&M TRANSPORTATION INSTITUTE
College Station, TX

Herbert S. Levinson
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New York, NY

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or high volumes. Therefore, the no-speed-reduction lengths given in Table 6 should be accepted as a desirable goal and should be provided where practical.

Vehicle Storage Length

The left-turn lane should be sufficiently long to store the number of vehicles likely to accumulate during a critical period; the definition of that critical period can vary depending on the traffic conditions at the site. Regardless of the specific critical period, the storage length should be sufficient to avoid the possibility of the left-turning queue spilling over into the through lane.

According to the *Green Book* (5), at unsignalized intersections, the storage length—exclusive of taper—may be based on the number of turning vehicles likely to arrive in an average 2-minute period within the peak hour. Space for at least two passenger cars should be provided; with over 10 percent truck traffic, provisions should be made for at least one car and one truck. The 2-minute waiting time may need to be changed to some other interval that depends largely on the opportunities for completing the left-turn maneuver. These intervals, in turn, depend on the volume of opposing traffic, which the *Green Book* does not address. For additional information on storage length, the *Green Book* refers the reader to

the *Highway Capacity Manual* (3). The equation presented in the *TRB Access Management Manual* (6) (and reproduced in Table 7) can be used to determine the design length for left-turn storage as described by the *Green Book*.

NCHRP Report 457 (11) developed suggested storage length values using equations identified from Harmelink's work (12) regarding storage length of left-turn bays at unsignalized intersections. The storage length equation is a function of movement capacity, which is dependent upon assumed critical gap and follow-up gap. Critical gap is defined by the *Highway Capacity Manual* as the minimum time interval in the major street traffic stream that allows intersection entry for one minor-street vehicle. Thus, the driver's critical gap is the minimum gap that would be acceptable. The time between the departure of one vehicle from the minor street and the departure of the next vehicle using the same major street gap, under a condition of continuous queuing on the minor street, is called the follow-up time.

NCHRP Report 457 used a smaller critical gap (4.1 sec as recommended in the *Highway Capacity Manual* compared to the 5.0 or 6.0 sec used by Harmelink for two-lane and four-lane highways, respectively), which resulted in shorter values than those generated by Harmelink. The assumptions made regarding critical gap or follow-up gap and the

Table 7. Equations used to determine storage length.

Equation in <i>TRB Access Management Manual</i>		
$L = \frac{V}{N_c} ks \quad (1)$		
Where: L = design length for left-turn storage (ft) V = estimated left-turn volume, vehicles per hour (veh/hr) N_c = number of cycles per hour. For the <i>Green Book</i> unsignalized procedure, this would be 30 (V/N is the average number of turning vehicles per cycle). k = factor that is the length of the longest queue (design queue length) divided by average queue length (a value of 2.0 is commonly used for major arterials, and a value of 1.5 to 1.8 might be considered for an approach on a minor street or on a collector where capacity will not be critical). For the <i>Green Book</i> procedure, this would be 1.0. s = average length per vehicle, including the space between vehicles, generally assumed to be 25 ft (adjustments for trucks and buses are available in several documents such as the <i>TRB Access Management Manual</i>)		
Equations Used in <i>NCHRP Report 457</i>		
Equations also used to generate values in Table 8		
$P(n > N) = \left(\frac{v}{c}\right)^{(N+1)}$	$c = \frac{V_o e^{-V_o t_c / 3600}}{1 - e^{-V_o t_f / 3600}}$	$N = \frac{\ln[P(n > N)]}{\ln[v/c]} - 1$
Where: $P(n > N)$ = probability of bay overflow v = left-turn vehicle volume (veh/hr) N = number of vehicle storage positions c = movement capacity (veh/hr) V_o = major-road volume conflicting with the minor movement, assumed to be equal to one-half of the two-way major-road volume (veh/hr) t_c = critical gap (sec) t_f = follow-up gap (sec)		

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resulting capacity for the movement used in these procedures can have a significant effect on the calculated storage length recommendations as demonstrated by several researchers (11, 13, 14).

It is generally recognized that a storage area should adequately store the turn demand a large percentage of the time (e.g., 95 percent or more). A 0.5 percent limit was used for the major road left-turn bay lengths in *NCHRP Report 457* based on the recommendation of Harmelink. This smaller limit reflects the greater potential for severe consequences when a bay overflows on an unstopped, major road approach. The critical and follow-up gaps were assumed to equal 4.1 and 2.2 sec, respectively. When the critical gap of 5.0 and 6.25 sec determined in the NCHRP Project 3-91 field studies are used for critical gap (follow-up gap was 2.2 sec), the stor-

age lengths shown in Table 8 are generated. A critical gap of 5.0 sec represents the 50th percentile, while the critical gap of 6.25 sec represents the 85th percentile value (which is preferred for design) for the data collected as part of the field studies in this project.

Each of the sources on storage length emphasize that the appropriate storage length is dependent on both the volume of turning traffic and the volume of opposing traffic. If volume data are not available, for urban and suburban streets with lower speeds (e.g., less than 40 mph), it is recommended that the minimum storage length be at least 50 ft to accommodate two cars; for high speed and rural locations, a minimum storage length of 100 ft is recommended. Some cities use 250-ft storage lanes for left-turn lanes approaching arterial streets, and 150-ft storage lanes for those approach-

Table 8. Recommended storage lengths for arterials from Access Management Manual equation and NCHRP Report 457 equations with revised critical gap.

Left-Turn Volume (veh/hr)	Storage Length, Rounded Up to Nearest 25-ft Increment (ft)						
	Storage Lengths from Other Manuals for Comparison		Storage Lengths Calculated from Equations ^b Documented in <i>NCHRP Report 457</i> Using Revised Critical Gaps and 0.005 Probability of Overflow				
			Opposing Volume (veh/hr)				
	<i>Green Book</i> Procedure (<i>k</i> =1) ^a	Equation (<i>k</i> =2) ^a	200	400	600	800	1000
Critical Gap = 5.0 sec, Follow-Up Gap = 2.2 sec (Represents the 50th Percentile Critical Gap Found in Field Studies)							
40	75	75	50	50	50	50	50
60	50	100	50	50	50	50	50
80	75	150	50	50	50	50	50
100	100	175	50	50	50	50	75
120	100	200	50	50	50	75	75
140	125	250	50	50	50	75	75
160	150	275	50	50	75	75	100
180	150	300	50	50	75	75	100
200	175	350	50	75	75	100	125
220	200	375	50	75	75	100	125
240	200	400	75	75	100	125	150
260	225	450	75	75	100	125	175
280	250	475	75	75	100	125	175
300	250	500	75	100	125	150	200
Critical Gap = 6.25 sec, Follow-Up Gap = 2.2 sec (Represents the 85th Percentile Critical Gap Found in Field Studies, 85th Percentile Preferred for Design)							
40	75	75	50	50	50	50	50
60	50	100	50	50	50	50	50
80	75	150	50	50	50	50	75
100	100	175	50	50	50	75	75
120	100	200	50	50	75	75	100
140	125	250	50	50	75	100	125
160	150	275	50	75	75	100	150
180	150	300	50	75	75	125	150
200	175	350	50	75	100	125	200
220	200	375	75	75	100	150	225
240	200	400	75	75	125	150	275
260	225	450	75	100	125	175	325
280	250	475	75	100	125	200	400
0	250	500	75	100	150	225	525
^{a, b} See Table 7 for equations. This table assumes 25 ft per vehicle spacing. Table 4 provides other suggested spacing lengths based on percent trucks.							