

June 5, 2023

Mr. James Neal
Partner
Hinkson Company, LLC
5050 N 40th St, Suite 350
Phoenix, AZ 85018

Re: SWC 51st Ave/Glendale Ave Starbucks | Modified Traffic Impact Statement
SWC 51st Ave/Glendale Ave, Glendale, AZ
APN 146-06-054E

1 INTRODUCTION

This Modified Traffic Impact Statement (TIS) was prepared for Hinkson Company, LLC for the 51st Ave/Glendale Ave Starbucks (Project) located on the southwest corner of 51st Avenue and Glendale Ave in Glendale, Arizona (City).

The Project will consist of 1,302 square feet (SF) of gross floor area (GFA) of “Coffee/Donut Shop with Drive-Through Window and No Indoor Seating” land use as shown in the site plan (Attachment A). The Project is forecast to generate approximately 46 AM peak hour trips, 17 PM peak hour trips, and 179 daily trips based on calculations performed using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition.

The site will generate fewer than 100 peak hour trips, which would warrant a TIS scope of work; however, the City is requiring that a right-turn lane warrant analysis be performed for the driveway on the west side of the Project (Glendale Avenue/Driveway A) that currently does not have a right-turn lane. Therefore, a modified TIS has been prepared to satisfy the City’s requirements.

The purpose of this study was to document existing conditions and the proposed Project site plan, as well as calculate anticipated site-generated trips and turn lane warrants associated with the Project.

2 PROJECT BACKGROUND

The Project site is located on the southwest corner of 51st Avenue and Glendale Avenue in Glendale, Arizona, as shown in Figure 1. The Project site is a parking lot for an existing shopping center. The site is bounded by a Chevron Gas Station to the east, a TitleMax Title Loans to the west, a shopping center to the south, and Glendale Avenue to the north.

The Project site access will be primarily achieved through one full-access driveway and one right-in/right-out access driveway off Glendale Avenue. The anticipated Project opening year is 2023.

Figure 1: Project Location



3 EXISTING CONDITIONS

3.1 Existing Roadways

Glendale Avenue is a paved, east-west 5-lane roadway with two through lanes in each direction and a two-way left-turn lane (TWLTL). The existing cross-section includes pavement, curb, gutter, and sidewalk on both sides of the roadway. The posted speed limit is 35 mph adjacent to the Project site. Glendale Avenue is classified as an Urban Minor Arterial based on the ADOT Statewide Federal Functional System Online Map. Glendale Avenue is classified as an Arterial based on the City of Glendale Transportation Plan (November 2017).

51st Avenue is a paved, north-south 6-lane roadway with three through lanes in the northbound direction, two through lanes in the southbound direction, and divided by a TWLTL. The existing cross-section includes pavement, curb, gutter, and sidewalk along both sides of the roadway. The posted speed limit on 51st Avenue is 40 mph. 51st Avenue is classified as an Urban Principal Arterial based on the ADOT Statewide Federal Functional System Online Map. 51st Avenue is classified as an Arterial based on the City of Glendale Transportation Plan (November 2017).

3.2 Existing Intersections

51st Avenue and Glendale Avenue is a four-leg signalized intersection. The northbound approach consists of one dedicated left-turn lane, two through lanes, and one shared through/right-turn lane; the southbound approach consists of one dedicated left-turn lane, one through lane, and one shared through/right-turn lane; the eastbound approach consists of one dedicated left-turn lane, one through lane, and one shared through/right-turn lane; the westbound approach consists of one dedicated left-turn lane, two through lanes, and one dedicated right-turn lane.

3.3 Existing Traffic Volumes

AM and PM peak hour turning movement volumes were collected between 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. on Thursday, December 15, 2022, at the intersection of:

- Glendale Ave/Driveway A

The volumes are shown in Figure 2. The traffic count data sheets are provided in Attachment B.

4 PROPOSED SITE CONDITIONS

4.1 Site Access, Circulation and Parking

Access to the Project will be provided via one full-access driveway and one right-in/right-out access driveway off Glendale Avenue. The eastern Project driveway (Driveway B) is currently a full-access driveway; however, the City has stipulated that the driveway shall be converted to right-in/right-out access only. Driveway B also has an existing eastbound right-turn lane into the site. There are no sight distance concerns at the site access driveway locations.

There is one drive-through lane present on the site. The drive-through entrance is on the northwest corner of the site and continues along the south and east side of the building in a counterclockwise fashion.

The Project will provide 17 parking spaces, including 1 accessible parking space.

4.2 Trip Generation

The Project will consist of 1,302 SF of GFA and 1 drive-through lane of “Coffee/Donut Shop with Drive-Through Window and No Indoor Seating” land use (ITE Trip Generation Manual, 11th Edition). The Project is forecast to generate approximately 46 AM peak hour trips, 17 PM peak hour trips, and 179 daily trips.

The calculated trip values are shown in Table 1. The complete Project trip generation calculation sheet is shown in Attachment C.

Table 1: Project Trip Generation

Land Use	ITE Code ¹	Size	Unit	AM Peak Hour			PM Peak Hour			Daily Volume
				In	Out	Total	In	Out	Total	
Coffee/Donut Shop with Drive-Through Window and No Indoor Seating	938	1	Drive-Through Lanes	23	23	46	8	9	17	179
Total Trips				23	23	46	8	9	17	179

1. Land Use Code (LUC), per ITE Trip Generation Manual, 11th Edition.

4.3 Trip Distribution and Assignment

The site-generated trips were distributed across the study area roadway network based on access to surrounding residential areas and other attractors using the percentages shown in Table 2. Site-generated trips are shown in Figure 3 respectively.

Table 2: Trip Distribution

Roadway	Segment	Distribution	
		From Site	To Site
Glendale Ave	East of 51 st Ave	20%	20%
Glendale Ave	West of 51 st Ave	30%	30%
51 st Ave	North of Glendale Ave	20%	20%
51 st Ave	South of Glendale Ave	30%	30%

Figure 2: Existing Volumes

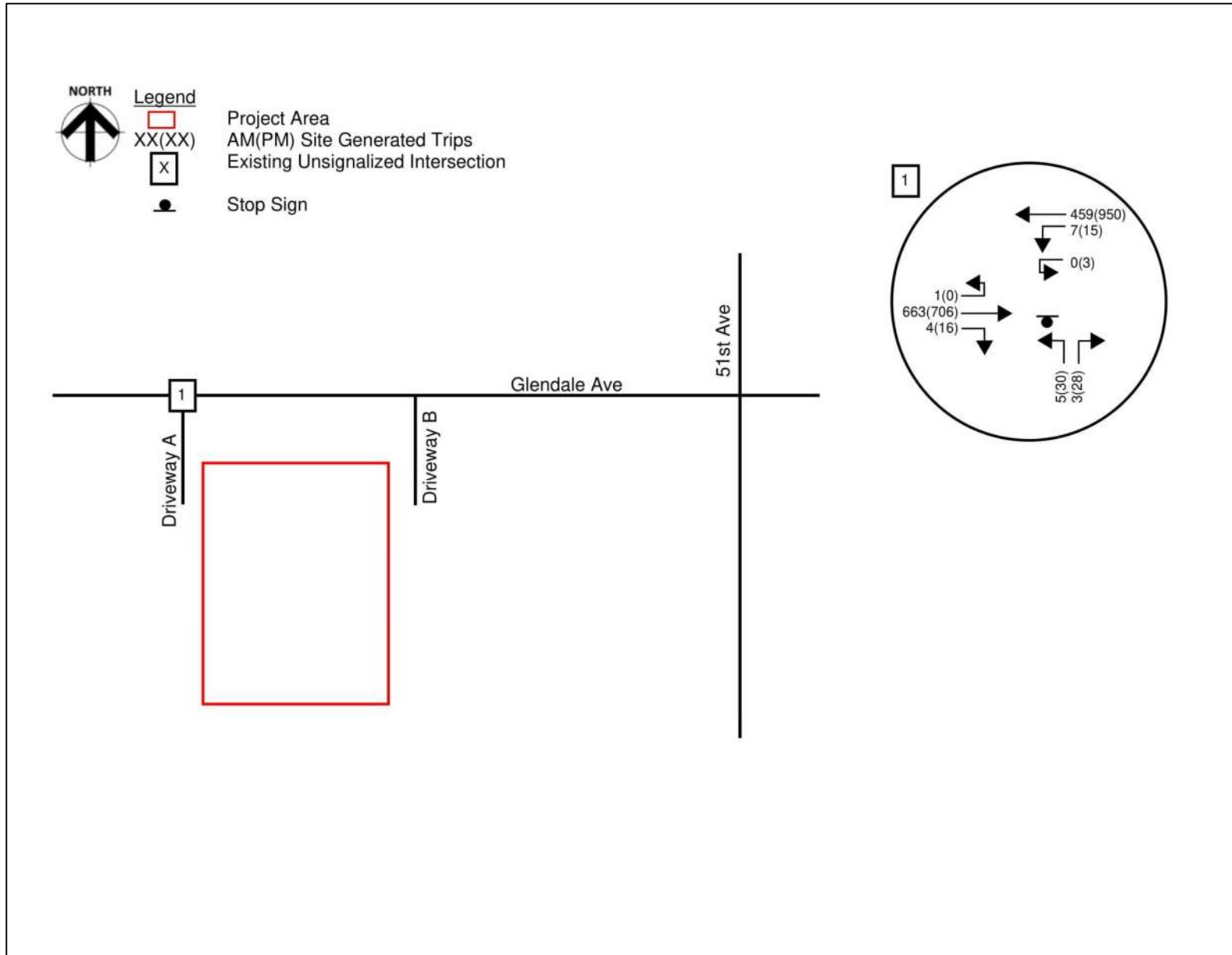
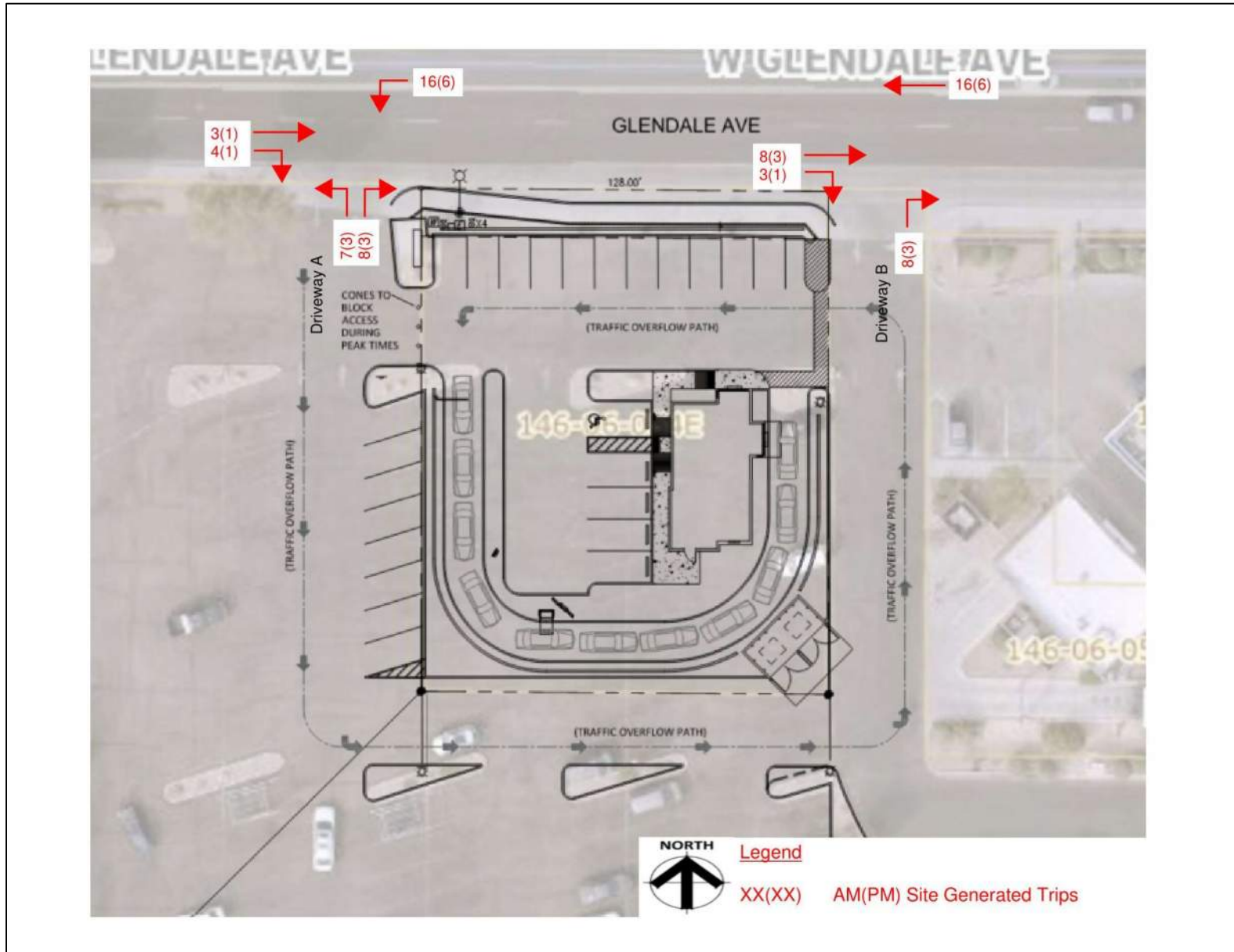


Figure 3: Site-Generated Trips



5 TRAFFIC FORECASTING

Non-site traffic forecasting accounts for ambient growth of vehicle trips that occur on the roadway network adjacent to the Project site. This includes trips along Glendale Avenue.

The existing traffic volumes were increased with a compounding growth rate of 2.0% per year to obtain the non-site traffic volumes. Total traffic volumes were obtained by adding the estimated Project trips to the non-site traffic volumes. These are shown in Figure 4 and Figure 5, respectively.

Figure 4: 2023 Non-Site Volumes

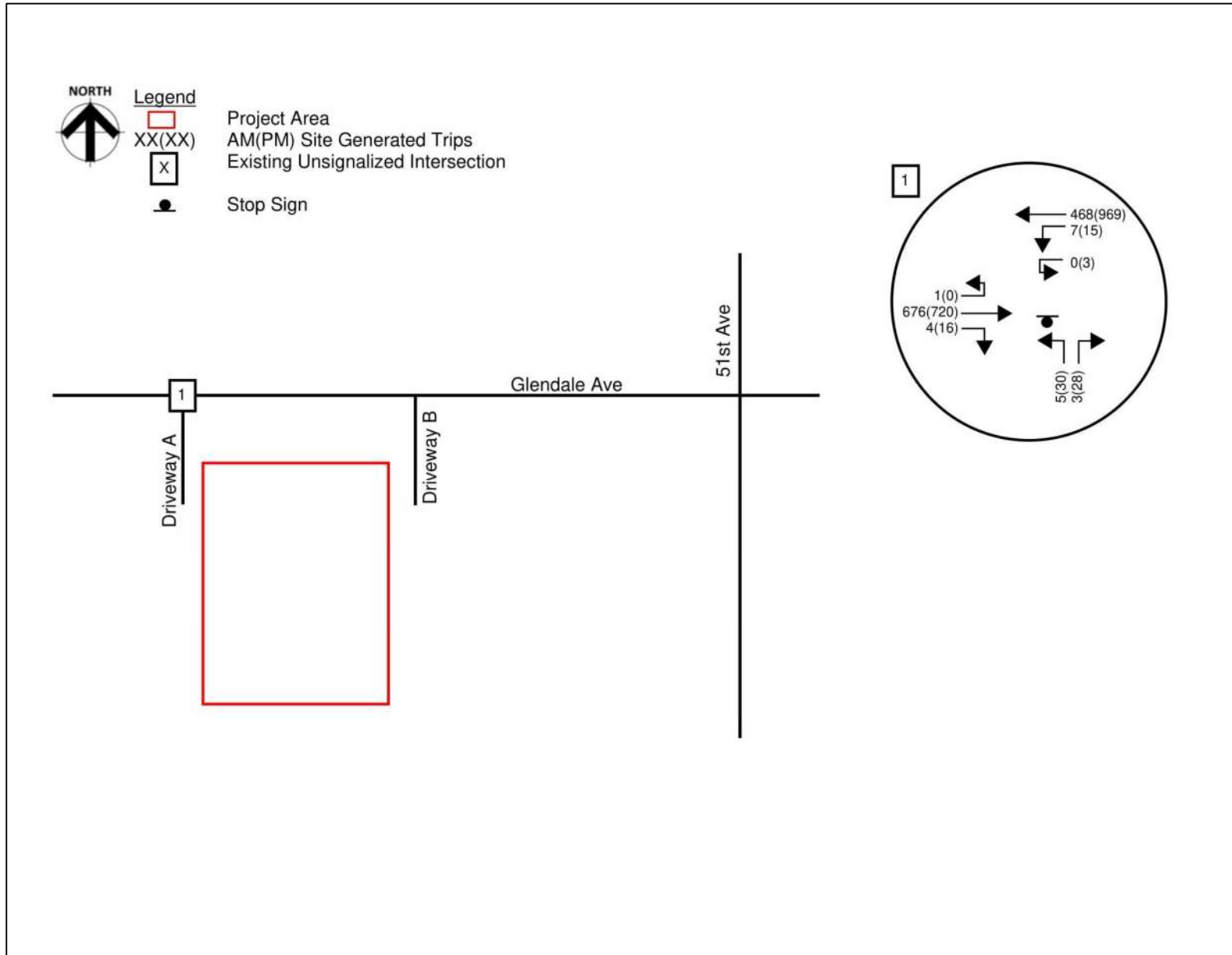
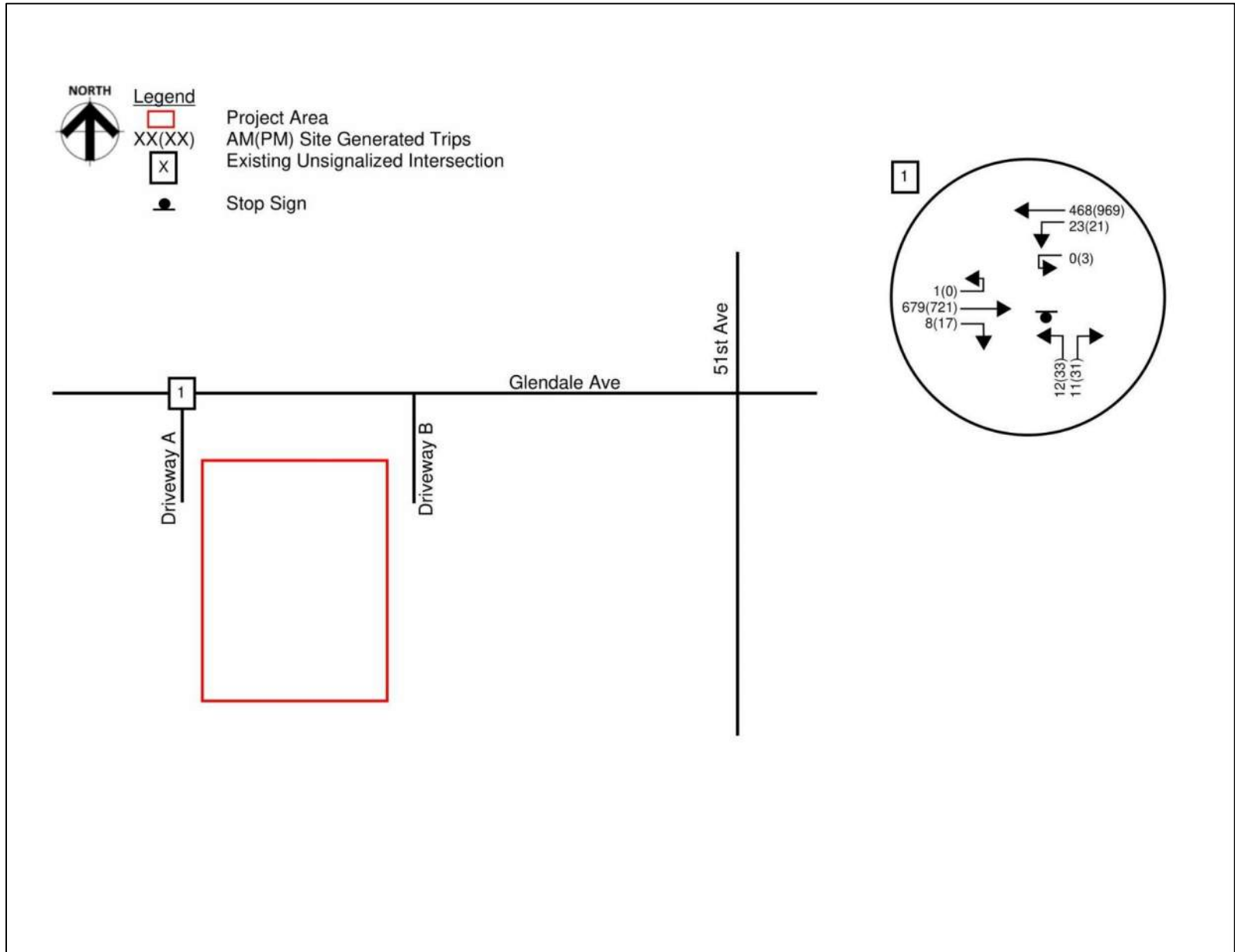


Figure 5: 2023 Total Site Volumes



6 TURN LANE WARRANTS

A right turn lane warrant analysis was performed for the western Project driveway (Driveway A) and was evaluated according to the MCDOT Roadway Design Manual Section 7.15. The results are summarized in Table 3.

Table 3: Turn Lane Warrant Analysis

Intersection	Movement	AM Peak Hour			PM Peak Hour		
		Advancing Volume	Right-Turn Volume	Right-Turn Warrant Met?	Advancing Volume	Right-Turn Volume	Right-Turn Warrant Met?
Existing Conditions							
Glendale Ave/Driveway A	EBR	663	4	NO	706	16	NO
2023 Non-Site Traffic Conditions							
Glendale Ave/Driveway A	EBR	676	4	NO	720	16	NO
2023 Total Traffic Conditions							
Glendale Ave/Driveway A	EBR	679	8	NO	721	17	NO

As shown in Table 3, an eastbound right-turn lane is not warranted at Glendale Ave & Driveway A.

7 CONCLUSIONS

The following conclusions are made based on the findings of the Project TIS:

1. The Project is expected to generate approximately 46 AM peak hour, 17 PM peak hour, and 179 daily trips.
2. The Project is not expected to have a significant impact to the surrounding roadway infrastructure as it is expected to generate fewer than 100 external peak hour trips.
3. There are no sight-distance concerns at the existing Project driveways.
4. An eastbound right-turn lane was not found to be warranted at Glendale Ave & Driveway A.

8 RECOMMENDATIONS

In summary, the proposed Project is expected to have no significant impact on the adjacent roadway network. The following recommendations were developed based on the findings of the Project TIS:

1. Design and construction of the proposed Project improvements should conform to the City's design guidelines, as applicable.

Sincerely,
Greenlight Traffic Engineering, LLC


Scott Kelley, PE, PTOE

Principal/Senior Project Manager
scottk@greenlightte.com
(602) 499-1339



Attachments:

- A – Starbucks Site Plan
- B – Traffic Counts
- C – Trip Generation Calculations
- D – Response to Comments

ATTACHMENTS

PROJECT DIRECTORY

ARCHITECT:
 RKA A ARCHITECTS, INC.
 2233 EAST THOMAS ROAD
 PHOENIX, ARIZONA 85016
 CONTACT: NEIL FEASER
 PHONE: (602) 955-3900
 FAX: (602) 955-0496
 E-MAIL: nfeaser@rkaa.com

SITE DATA

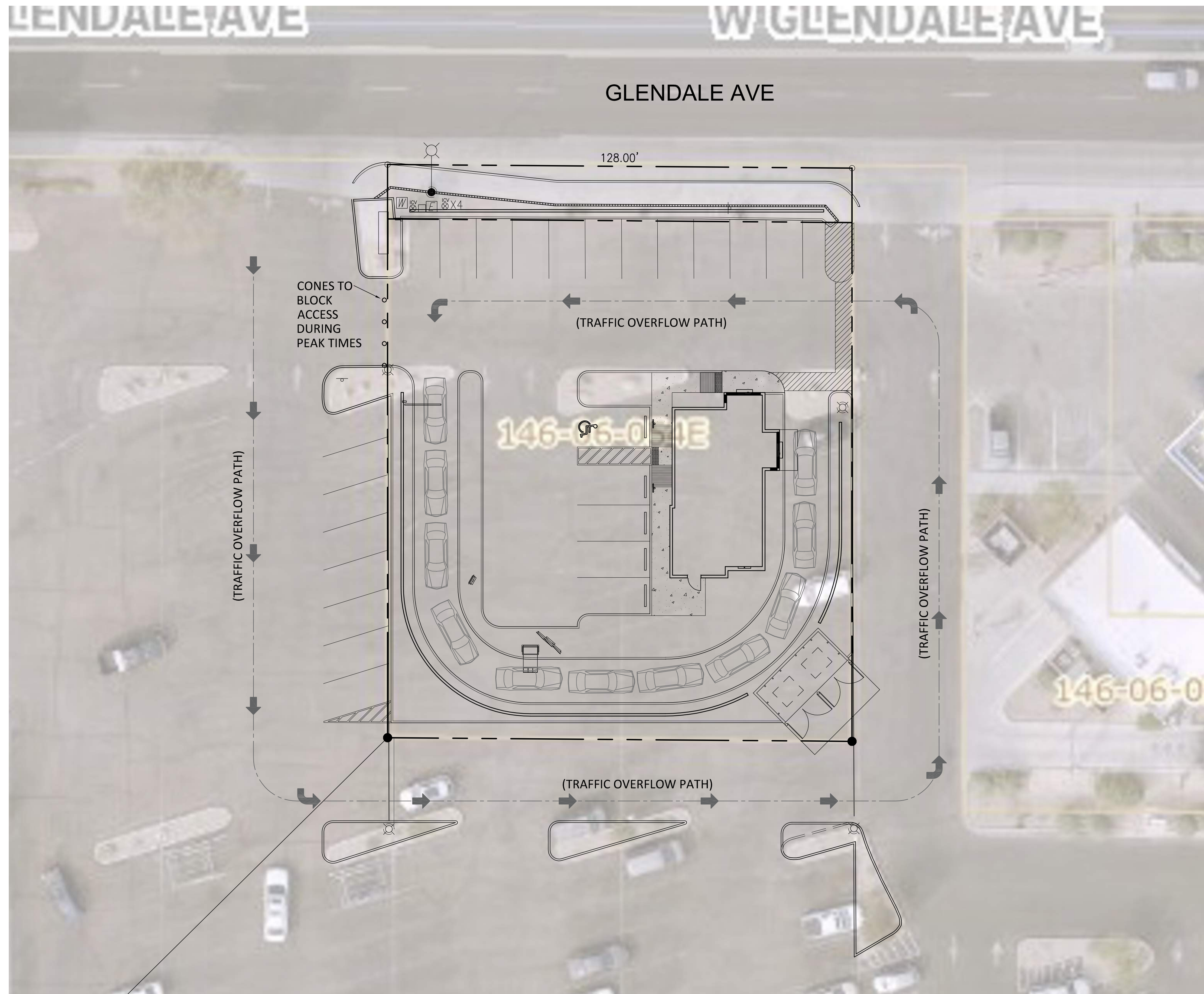
PARCEL NUMBER: 146-06-054E
 EXISTING ZONING: C-2
 SITE AREA: 0.46 ACRES (20,212 S.F.)

PROPOSED USE: RESTAURANT

SITE AREA
 RESTAURANT BUILDING AREA: 1,302 S.F.

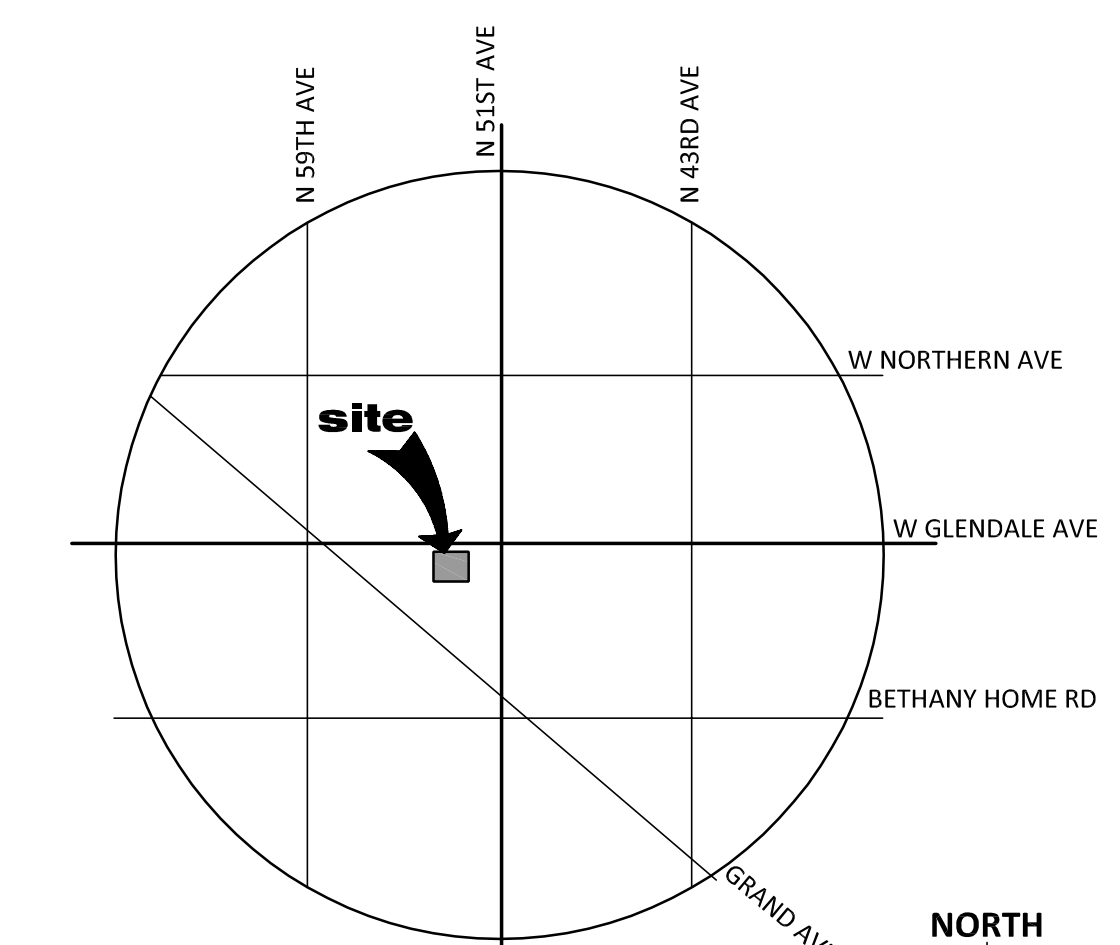
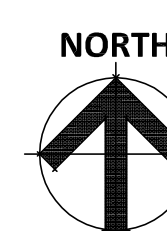
PARKING REQUIRED:
 PAD B: RESTAURANT 1/100
 TOTAL PARKING REQUIRED: 13 SPACES

TOTAL PARKING PROVIDED: 17 SPACES



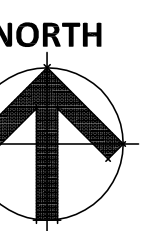
TRAFFIC STACKING DIAGRAM

SCALE: 1/16" = 1'-0"



VICINITY MAP

SCALE: N.T.S.



51ST AND GLENDALE PAD
 SWC OF W GLENDALE AVE. AND N 51ST AVE
 GLENDALE, AZ 85301
 DATE: 05-03-2023 (PRELIMINARY)

SP-2t

RKA A# 21358.00

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(303) 216-2439
www.alltrafficdata.net

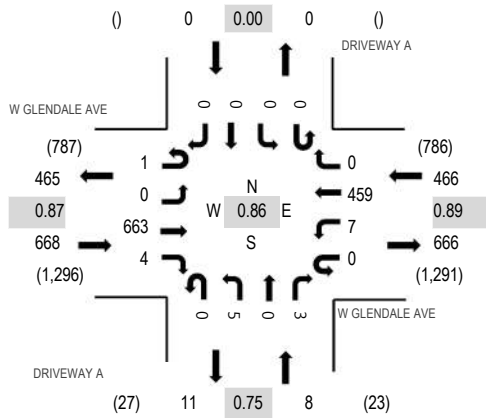
Location: 1 DRIVEWAY A & W GLENDALE AVE AM

Date: Thursday, December 15, 2022

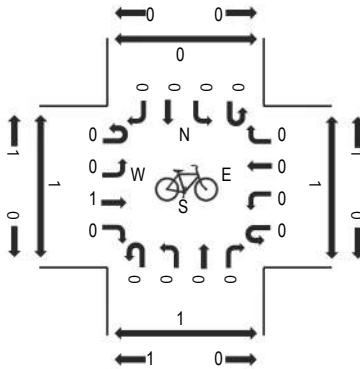
Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

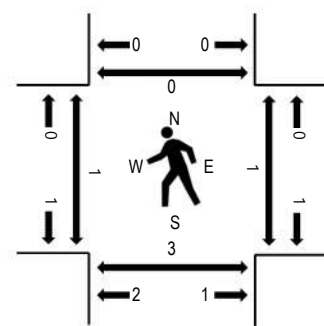
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	W GLENDALE AVE Eastbound				W GLENDALE AVE Westbound				DRIVEWAY A Northbound				DRIVEWAY A Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	166	1	0	0	63	0	0	1	0	2	0	0	0	0	233	1,067	1	0	1	0
7:15 AM	0	0	183	1	0	1	66	0	0	2	0	1	0	0	0	0	254	1,128	0	0	0	0
7:30 AM	1	0	144	0	0	2	96	0	0	2	0	2	0	0	0	0	247	1,142	0	1	0	0
7:45 AM	0	0	200	0	0	0	131	0	0	1	0	1	0	0	0	0	333	1,137	1	0	2	0
8:00 AM	0	0	165	2	0	1	125	0	0	1	0	0	0	0	0	0	294	1,038	0	0	0	0
8:15 AM	0	0	154	2	0	4	107	0	0	1	0	0	0	0	0	0	268		0	0	1	0
8:30 AM	0	0	151	4	0	1	83	0	0	2	0	1	0	0	0	0	242		0	1	0	0
8:45 AM	0	0	119	3	0	5	101	0	0	4	0	2	0	0	0	0	234		0	0	1	0
Count Total	1	0	1,282	13	0	14	772	0	0	14	0	9	0	0	0	0	2,105		2	2	5	0
Peak Hour	1	0	663	4	0	7	459	0	0	5	0	3	0	0	0	0	1,142		1	1	3	0

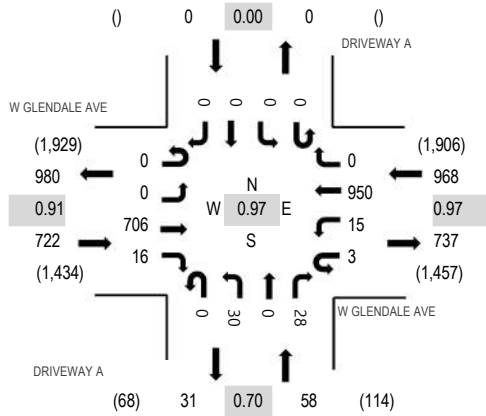
Location: 1 DRIVEWAY A & W GLENDALE AVE PM

Date: Thursday, December 15, 2022

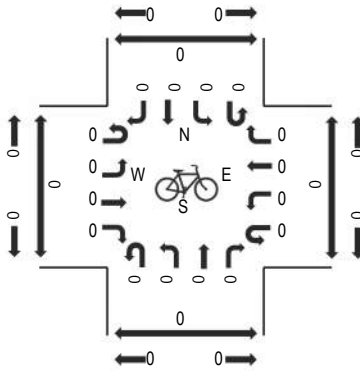
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:30 PM - 04:45 PM

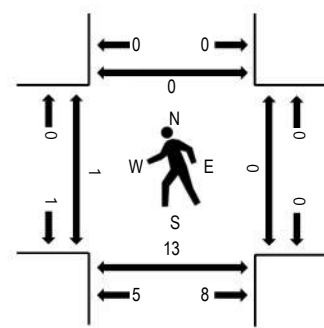
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	W GLENDALE AVE Eastbound				W GLENDALE AVE Westbound				DRIVEWAY A Northbound				DRIVEWAY A Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	187	2	0	7	227	0	0	6	0	5	0	0	0	0	434	1,719	0	1	0	0
4:15 PM	0	0	158	2	0	5	235	0	0	7	0	6	0	0	0	0	413	1,717	0	1	4	0
4:30 PM	0	0	187	4	0	3	240	0	0	8	0	8	0	0	0	0	450	1,748	0	0	1	0
4:45 PM	0	0	156	3	0	2	239	0	0	12	0	10	0	0	0	0	422	1,715	0	0	7	0
5:00 PM	0	0	168	3	1	4	245	0	0	5	0	6	0	0	0	0	432	1,735	0	0	1	0
5:15 PM	0	0	195	6	2	6	226	0	0	5	0	4	0	0	0	0	444		1	0	4	0
5:30 PM	1	0	176	4	1	5	214	0	0	12	0	4	0	0	0	0	417		1	0	2	0
5:45 PM	0	0	178	4	0	8	236	0	0	11	0	5	0	0	0	0	442		0	0	2	0
Count Total	1	0	1,405	28	4	40	1,862	0	0	66	0	48	0	0	0	0	3,454		2	2	21	0
Peak Hour	0	0	706	16	3	15	950	0	0	30	0	28	0	0	0	0	1,748		1	0	13	0

Trip Generation Analysis

Project: 221137 HINK 51st Ave+Glendale Ave Starbucks Modified Traf Stmt
Originator: Maria Jimenez
Checked: Collette Frohlich, PE
Date: December 15, 2022
Data Source: Site Plan
Reference Manual: ITE Trip Generation Manual, 11th Edition
Time Period: Weekday (Monday - Friday), Peak Hour of Generator
Setting/Location: General Urban/Suburban

Land Use	LUC	Units	Size	AM Calc			PM Calc			ADT Calc			AM			PM			ADT
				In	Out	Total	In	Out	Total	Total	In	Out	Total	In	Out	Total			
Coffee/Donut Shop with Drive Through and No Indoor Seating	938	Drive-Through Lanes	1.00	50%	50%	45.71	50%	50%	17.15	179	23	23	46	8	9	17	179		
BASE TRIP GENERATION										23	23	46	8	9	17	179			