

June 30, 2022

Mr. Sina Sabeti
Owner
Next Page Construction
13951 N Scottsdale Rd, Unit 211
Scottsdale, AZ 85254



Re: Glendale 23 | Traffic Impact Statement
NEC 83rd Ave/Glendale Ave, Glendale, AZ
APN 142-27-004

1 INTRODUCTION

This Traffic Impact Statement (TIS) was prepared by Greenlight Traffic Engineering (Greenlight) for the proposed Glendale 23 development generally located on the northeast corner of 83rd Avenue and Glendale Avenue in Glendale, AZ (Project), as shown in Figure 1. The Project has frontage along 83rd Avenue and along 81st Avenue approximately 725 feet north of Glendale Avenue. 83rd Avenue is owned and maintained by the City of Glendale.

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

The Project will include the development of a 5.98-acre parcel with 23 dwelling units of single-family residential, as shown in the site plan (Attachment A). The Project is forecast to generate 24 AM peak hour trips, 26 PM peak hour trips, and 261 average daily trips (ADT) based on Institute of Transportation Engineers (ITE) Land Use 210 "Single-Family Detached Housing".

The Project site is currently a vacant dirt lot with native vegetation. The Project is bounded by a tennis club complex to the north, residential units to the south, 81st Avenue to the east, and 83rd Avenue to the west. The expected Project opening year is 2023.

Be sure to continue to work with the City of Glendale for any 83rd Ave construction. Plans are currently under review for widening 83rd Ave to be a 2-1-2 in the area of this development. There is a development planned to the north east that may be using 81st Ave as well. Coordination should be planned for any construction on 81st Ave.

Figure 1: Project Site Location



2 EXISTING ROADWAY CONDITIONS

2.1 Roadways

83rd Avenue is a north-south paved roadway with one lane in each direction and a two-way left-turn lane (TWLTL). The cross section generally includes pavement, curb, gutter, and sidewalk on both sides of the roadway; however, curb, gutter and sidewalk are not present on the east side of the roadway immediately adjacent to the Project site. The posted speed limit is 40 miles per hour (mph). 83rd Avenue is classified as an Urban Minor Arterial based on the Arizona Department of Transportation (ADOT) Statewide Federal Functional System Online Map. 83rd Avenue is classified as an Arterial based on the City of Glendale Transportation Plan (November 2017).

81st Avenue is a north-south paved roadway with no pavement markings. South of the Project site, the cross section generally includes pavement, with curb, gutter, and sidewalk on the west side of the roadway and dirt shoulders on the east side of the roadway. 81st Avenue is not paved adjacent to the Project site. There is no posted speed limit but is assumed to be 25 mph through a residential area. 81st Avenue is not classified on the ADOT Statewide Federal Functional System Online Map or the City of Glendale Transportation Plan (November 2017).

Glendale Avenue is a 6-lane, east-west paved roadway with three lanes in each direction separated by a raised median. The cross section includes pavement, curb, gutter, and sidewalk on both sides of the roadway. The posted speed limit is 40 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 a Major Arterial based on the City of Glendale Transportation Plan (November 2017).

2.2 Intersections

83rd Avenue and Glendale Avenue is a four-leg signalized intersection. The northbound approach consists of one dedicated left-turn lane, one through lane, 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, three through lanes, and one dedicated right-turn lane; the westbound approach consists of one dedicated left-turn lane, two through lanes, and one shared through/right-turn lane.

81st Avenue and Glendale Avenue is a four-leg unsignalized intersection. The northbound and southbound approaches consist of one shared left-turn/through/right-turn lane; the eastbound and westbound approaches consist of one dedicated left-turn lane, two through lanes, and one shared through/right-turn lane.

3 PROPOSED SITE CONDITIONS

3.1 Site Access, Circulation and Parking

The layout of the proposed site is shown on the Site Plan in Attachment A.

Access to the site is provided by one full access driveway along 83rd Avenue and one full access driveway along 81st Avenue; both driveways will be located approximately 725 feet north of Glendale Avenue. There are no sight distance concerns at the site access driveway locations.

3.2 Trip Generation

The Project will consist of 23 dwelling units of “Single-Family Detached Housing” land use. Based on calculations in the ITE Trip Generation Manual, 11th Edition, the Project is forecast to generate approximately 24 AM peak hour trips, 26 PM peak hour trips, and 261 daily trips. Table 1 summarizes the calculated site-generated trip ends. A detailed trip generation calculation sheet is included in Attachment B.

Table 1: Trip Generation, ITE Trip Generation Manual

Land Use	ITE Code ¹	Size	Unit	AM Peak Hour			PM Peak Hour			Daily Volume
				In	Out	Total	In	Out	Total	
Single-Family Detached Housing	210	23	Dwelling Units	6	18	24	17	9	26	261
Site-Generated Trip Ends				6	18	24	17	9	26	261

1. ITE Land Use Code

4 TURN LANE WARRANTS

The need for a right-turn deceleration lane at the 83rd Avenue Project driveway was evaluated based on the requirements set forth in Section 7.15 of the Maricopa County Department of Transportation (MCDOT) Roadway Design Manual (RDM) which states:

A driveway right turn deceleration lane is required when either of the following is met:

- *The outside lane has an expected volume of 250 vph or greater and the right turn volume is greater than 55 vph.*
- *Any three of the below criteria are met:*
 - a. *At least 5,000 vehicle per day are using or are expected to be using the adjacent street.*
 - b. *The roadway’s posted speed limit is greater than 35 mph.*
 - c. *At least 1,000 vehicles per day are using or are expected to use the driveway.*
 - d. *At least 30 vehicles are expected to make right-turns into the driveway within a one-hour period.*

The site is expected to experience a maximum of 17 peak hour trips into the site and a maximum of 261 daily trips, which falls below the minimum threshold values of 30 right-turns and 1,000 vehicles per day listed above. Therefore, a right-turn deceleration lane is not recommended at the Project driveways.

5 QUEUEING ANALYSIS

A queueing analysis was performed for a left-turn lane at the 83rd Avenue Project Driveway per the requirements set forth in the MCDOT Roadway Design Manual Section 6.1.8. The queueing analysis was performed assuming that 100% of the site traffic would be entering the site using a southbound left-turn at the 83rd Avenue site driveway. This is a highly conservative estimate of the actual number of trips that would be expected to use this movement; however, since the overall site trips were so low, it was assumed to be sufficient for the purposes of determining the queue length for that movement.

The storage length equation found below is shown for unsignalized intersection control.

$$\text{Unsignalized Intersection Storage Length} = (\text{vehicles / hour}) / (30 \text{ periods / hour}) * 25 \text{ feet / vehicle}$$

The results of the queueing analysis are summarized in Table 2.

Table 2: Queueing Analysis Results

Intersection	Movement	Peak Hour Entering Volume		Max Queue Calculation (ft)	Existing Storage Length (ft)	Recommended Storage Length (ft)
		AM	PM			
83 rd Avenue Project Driveway	SBL	6	17	15	TWLTL ¹	No Change

1. TWLTL = Two-way left turn lane

Based on the results of the queueing analysis shown in Table 2, a southbound left-turn lane at the 83rd Avenue Project Driveway is recommended to be installed with 15 feet of storage. The existing TWLTL along 83rd Avenue satisfies these requirements.

6 CONCLUSIONS

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

1. The Project is expected to generate approximately 24 AM peak hour trips, 26 PM peak hour trips, and 261 daily trips based on the ITE Trip Generation Manual, 11th Edition.
2. The Project is not expected to have a significant impact to the surrounding roadway infrastructure, as it generates fewer than 100 peak hour trips.
3. There are no expected sight distance concerns at the proposed site driveways.
4. A northbound right-turn lane at the 83rd Avenue driveway was not found to be warranted by the Project.
5. The existing TWLTL on 83rd Avenue was found to be sufficient to accommodate the required storage for the southbound left-turn movement into the Project.

7 RECOMMENDATIONS

In summary, the proposed Project is expected to have minimal impacts on the adjacent roadway network. The following recommendations were developed based on the findings of the Project TIS:

1. Construct half-street improvements along 83rd Avenue and 81st Avenue.
2. Design and construction of the proposed Project improvements should conform to City of Glendale's design standards, as applicable.

Sincerely,
Greenlight Traffic Engineering, LLC


Scott Kelley, PE, PTOE
Principal/Project Manager
scottk@greenlightte.com
(602) 499-1339



Attachments:

- A – Glendale 23 Site Plan
- B – Project Trip Generation

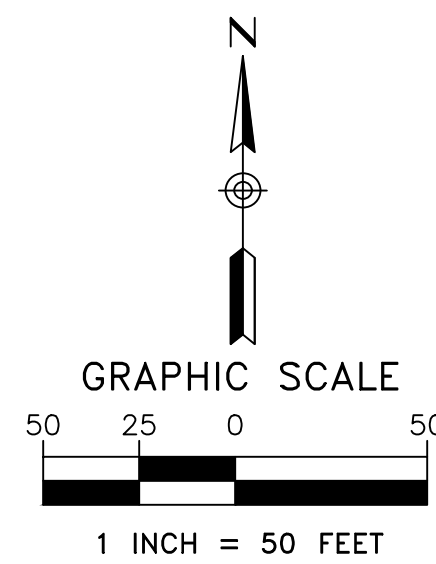
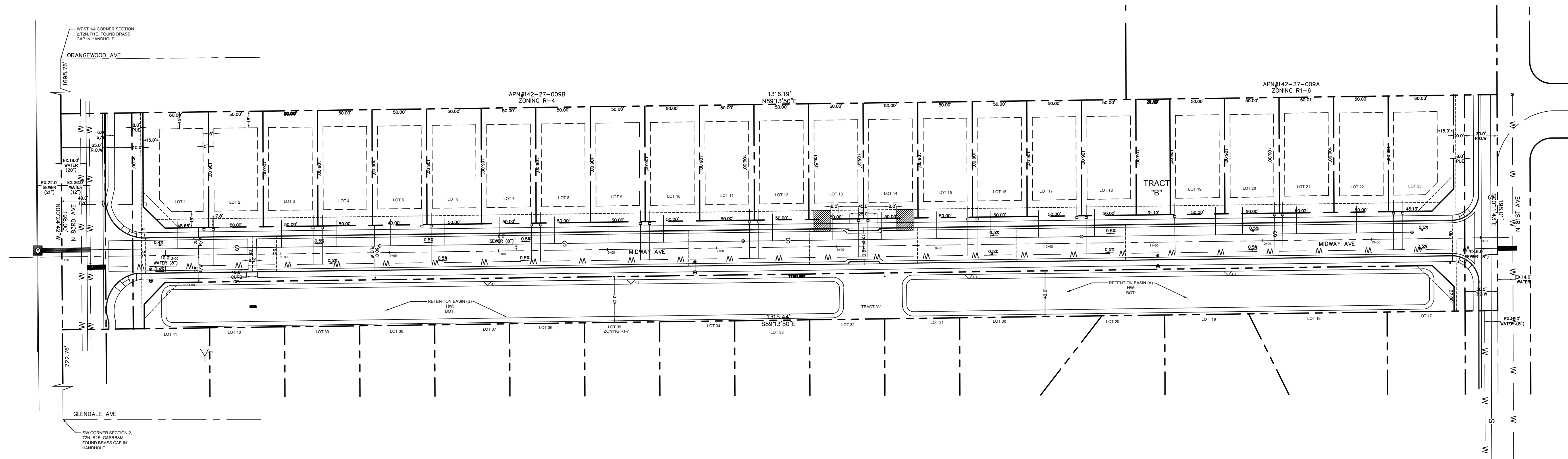
ATTACHMENTS

SITE PLAN

APN#142-27-004

7111 N 83RD AVE GLENDALE 85303

A PORTION OF SECTION 2, TOWNSHIP 2, NORTH RANGE 1 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY.



LEGAL DESCRIPTION

REAL PROPERTY IN THE CITY OF GLENDALE, COUNTY OF MARICOPA, STATE OF ARIZONA, DESCRIBED AS FOLLOWS:
 THE SOUTH 198 FEET OF THE FOLLOWING DESCRIBED PROPERTY:
 THAT PORTION OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 2 TOWNSHIP 2 NORTH, RANGE 1 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN DESCRIBED AS FOLLOWS:
 BEGINNING AT THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 2;
 RUNNING THENCE EAST TO THE NORTHEAST CORNER OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION;
 THENCE SOUTH 587 FEET;
 THENCE WEST TO THE WEST LINE OF SAID SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER;
 THENCE NORTH 587 FEET TO THE POINT OF BEGINNING.
 EXCEPT THE WEST 40 FEET THEREOF FOR ROAD PURPOSES.

SITE DATA

ADDRESS: 7111 N.83RD AVE GLENDALE AZ 85303

AREA:
 GROSS AREA: 266,446.40 SQ.FT (6.12 ACRE)
 NET AREA: 252,585.95 SQ.FT (5.80 ACRE)

BASIS OF BEARING

WEST LINE OF THE SW QUARTER SECTION 2, T2N, R1E,
 N00-24-42W PER GDACS RECORD OF SURVEY, AS RECORDED IN BOOK 699 PAGE 26, MCR.

EARTHWORK

CUT: 7,039 C.Y.
 FILL: 3,600 C.Y.
 NET: 3,439 C.Y. (CUT)

PROJECT DATA

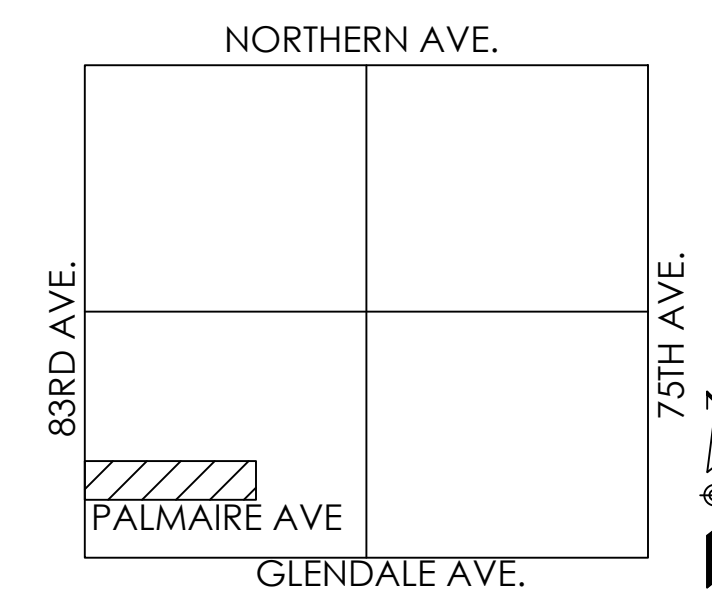
EXISTING ZONING:
 R4 (W 3/4 OF PROPERTY)
 R1-6 (E 1/4 PF PROPERTY)
 GROSS AREA: 5.98 ACRE
 NET AREA: 5.98 ACRE
 TOTAL LOTS: 23 LOTS
 LOT SIZES: 50'X106'
 GROSS DENSITY: 4.01 DU/ACRES
 TOTAL OPEN SPACE: 1.17 ACRE

ENGINEER

RAAD SALIH, P.E.
 SAIF ENGINEERING LLC
 230 W BASELINE RD #104
 TEMPE AZ 85283
 T 602 954 2161
 F 602 773 1833
 raad@saifengineering.net

BENCHMARK

SW CORNER SECTION 2, T2N, R1E., 1.5" SRP BRASS CAP FLUSH, STAMPED T2N R1E 3 2 10 11 LS 15925.
 ELEVATION: 1097.333 NAVD88
 W QUARTER CORNER SECTION 2, T2N, R1E., 3" BRASS CAP IN HANDHOLE 0.3' DOWN NO STAMPING.
 ELEVATION: 1108.845 NAVD88



VICINITY MAP
 N.T.S

OWNER NAME:

NDM CAPITAL GROUP LLC,
 7922 E SANTA CATALINA DR
 SCOTTSDALE AZ USA 85255

LEGEND

- LOT LINE
- - - - - RIGHT OF WAY
- - - - - CENTER LINE
- - - - - PROPOSED EASEMENT
- V - VIEW FENCE
- T - THEME WALL
- S - SCREEN WALL
- ⊗ PROPOSED FIRE HYDRANT
- 8" W PROPOSED WATER LINE
- 8" S PROPOSED SEWER LINE
- PROPOSED SEWER MANHOLE
- PROPOSED HDPE STORM DRAIN PIPE
- 224 LOT NUMBER
- R/W RIGHT OF WAY
- FC FACE OF CURB
- ESMT EASEMENT
- SVT SIGHT VISIBILITY TRIANGLE
- PUE PUBLIC UTILITY EASEMENT
- VNAE VEHICLE NON-ACCESS EASEMENT
- (R) RECORD
- (M) MEASURED

DESIGN BY: R.M.S.	PROJECT MANAGER:
DRAWN BY:	
CHECKED BY: R.M.S.	
DATE:	DATE:
	REVISION
	BY

SAIF ENGINEERING L.L.C. Engineering, Surveying & Construction Administration 230 W Baseline Rd, Suite 104 Tempe, AZ 85018 Tel (602)954-2161	
SITE PLAN APN#142-27-004 7111 N 83RD AVE GLENDALE 85303	
SCALE:	NOTED
SECTION:	TOWNSHIP:
RANGE:	
JOB NO.:	
SHEET	51



Trip Generation Analysis

Project: 221079 NEXT Glendale 23 Traf Stmt
Originator: Maria Jimenez
Checked: Alyssa Whitten, PE
Date: 6/20/2022
Data Source: Site Plan
Reference Manual: ITE Trip Generation Manual, 11th Edition

Size: 23.00
Independent Variable: Dwelling Units
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	
TRIP ENDS																	
Single-Family Detached Housing	210	Dwelling Units	23.00	26%	74%	$T = 0.71(X) + 7.23$	64%	36%	$\ln(T) = 0.93\ln(X) + 0.36$	$\ln(T) = 0.92\ln(X) + 2.68$	6	18	24	17	9	26	261
Subtotal Trip Ends											6	18	24	17	9	26	261