



To: Dan Klocke
Gorman & Company

Date: July 18, 2024

From: Shelly Sorensen, PE, PTOE

Job Number: 24.5678

RE: United Methodist Church Residential
Development
Transportation Impact & Mitigation Analysis
– Category I



Shelly Sorensen

INTRODUCTION

Lōkahi, LLC (Lōkahi) has prepared a Transportation Impact & Mitigation Analysis – Category I for the proposed United Methodist Church Residential Development, located at 4140 N. Miller Road in Scottsdale, Arizona. See **Figure 1** for the vicinity map.

The proposed residential site will be comprised of a maximum of 85 multifamily residential dwelling units. See **Attachment A** and **Figure 2** for the site plan.

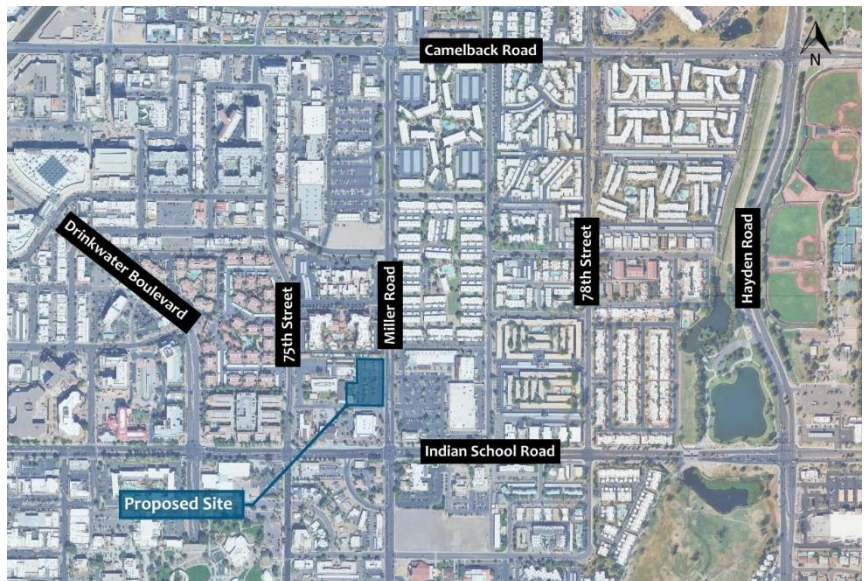


Figure 1 - Vicinity Map

The objective of this Transportation Impact & Mitigation Analysis Category I is to analyze the proposed residential development's traffic related impacts to the adjacent roadway network.





EXISTING CONDITIONS

The approximate 195,856 square foot site consists of one (1) parcel, APN 173-52-001A. Currently, United Methodist Church operates within the existing site. See **Attachment B** for Maricopa County Assessor's parcel information.

The proposed residential development will be located on approximately 65,000 square feet of APN 173-52-001A. United Methodist Church will remain operational with the buildout of the proposed residential development. The proposed residential development is bordered by Miller Road to the east and United Methodist Church to the west. Multifamily residential units border the proposed residential development to the north and a pharmacy borders the proposed residential development to the south.

Miller Road is a north-south roadway that provides two (2) through lanes in each direction of travel, with a center raised median. The City of Scottsdale classifies Miller Road between Indian School Road and Camelback Road as a collector, according to the *City of Scottsdale Transportation Master Plan*, dated July 5, 2016. The City of Scottsdale's 2022 *Average Daily Segment Traffic (ADT) Volumes* map reports an ADT of 12,800 vehicles per day (vpd) along Miller Road, between Indian School Road and Camelback Road. There is a posted speed limit of 35 miles per hour (mph).

Indian School Road is an east-west roadway that provides two (2) through lanes in each direction of travel with a center raised median. The City of Scottsdale classifies Indian School Road between Goldwater Boulevard and Drinkwater Boulevard as an arterial, according to the *City of Scottsdale Transportation Master Plan*, dated July 5, 2016. The City of Scottsdale's 2022 *Average Daily Segment Traffic (ADT) Volumes* map reports an ADT of 35,100 vpd along Indian School Road, west of Miller Road. There is a posted speed limit of 35 mph.

75th Street is a north-south roadway that provides one (1) through lane in each direction of travel. There is an unposted speed limit of 25 mph.



PROPOSED DEVELOPMENT

The proposed residential development will be located on approximately 65,000 square feet of APN 173-52-001A, which is zoned Highway Commercial with a Downtown Overlay (C-3 DO).

The proposed development will consist of a maximum of 85 multifamily residential dwelling units. Of the 85 dwelling units, there will be 55 one-bedroom, 13 two-bedroom, and 17 three-bedroom dwelling units. See **Figure 2** for the proposed site plan.

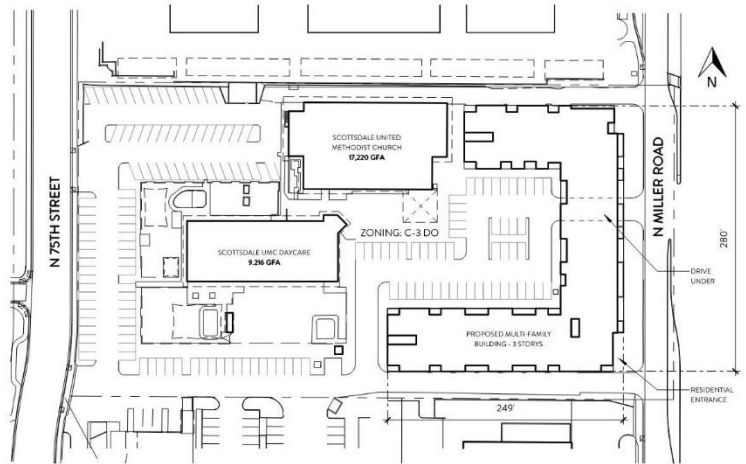


Figure 2 - Site Plan

Currently, the site is accessible by three (3) accesses along Miller Road and two (2) accesses along 75th Street. All existing access points will remain in place. One (1) access point along Miller Road, approximately 500-feet north of Indian School Road (centerline-to-centerline), allows all movements into and out of the site. This driveway will function as the primary access point for the proposed United Methodist Church Residential Development. Two (2) access points along Miller Road, approximately 315- and 615-feet north of Indian School Road, allow right-in and -out movements only. Two (2) accesses along 75th Street, approximately 315- and 550-feet north of Indian School Road, allow all movements into and out of the site.

TRIP GENERATION

The trip generation for the proposed United Methodist Church Residential Development was calculated utilizing the Institute of Transportation Engineers (ITE) publication entitled *Trip Generation, 11th Edition*. The ITE trip generation rates and fitted curve equations are based on studies that measure trip generation characteristics for various types of land uses. The rates are expressed in terms of trips per unit of land use type. This publication is the standard for the transportation engineering profession.

Proposed Development

The trip generation for the proposed development was calculated utilizing ITE Land Use 220 – Multifamily Housing (Low-Rise). Trip generation calculations are shown in **Table 1**. See **Attachment C** for detailed trip generation calculations.



Table 1 – Trip Generation (Proposed Development)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Multifamily Housing (Low-Rise)	220	85	Dwelling Units	620	49	12	37	57	36	21

The proposed development is anticipated to generate 620 weekday daily trips, with 49 trips occurring during the AM peak hour and 57 trips occurring during the PM peak hour.

Development Permitted Under Existing Zoning

According to the City of Scottsdale *Code of Ordinances*, Section 5.1504, the existing Highway Commercial with Downtown Overlay (C-3 DO) zoning of the site permits a maximum floor-to-area ratio (FAR) of 0.8, allowing for a development of approximately 52,000 square feet. According to the *Code of Ordinances*, Highway Commercial zoning is ‘intended to permit most types of commercial activities located along major streets, including shopping and service needs’.

Thus, the trip generation for a development that is permitted under the existing zoning was calculated utilizing ITE Land Use 821 – Shopping Plaza (40-150k) (w/o Supermarket). Trip generation calculations are shown in **Table 2**. See for **Attachment C** detailed trip generation calculations.

Table 2 – Trip Generation (Development Permitted Under Existing Zoning)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Shopping Plaza (40-150k) (w/o Supermarket)	821	52	1000 Sq Ft GFA	3,511	90	56	34	270	132	138

A development that is permitted under the existing zoning generates 3,511 weekday daily trips, with 90 trips occurring during the AM peak hour and 270 trips occurring during the PM peak hour.

TRIP GENERATION COMPARISON

Proposed Development versus Development Permitted Under Existing Zoning

A trip generation comparison between the proposed development and a development that is permitted under the existing zoning is shown in **Table 3**.



**Table 3 – Trip Generation Comparison
(Proposed Development vs. Development Permitted Under Existing Zoning)**

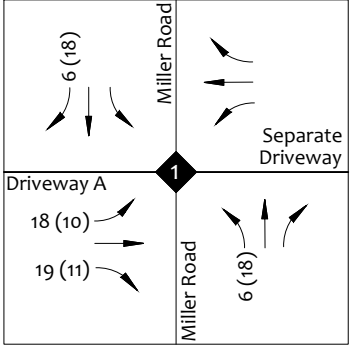
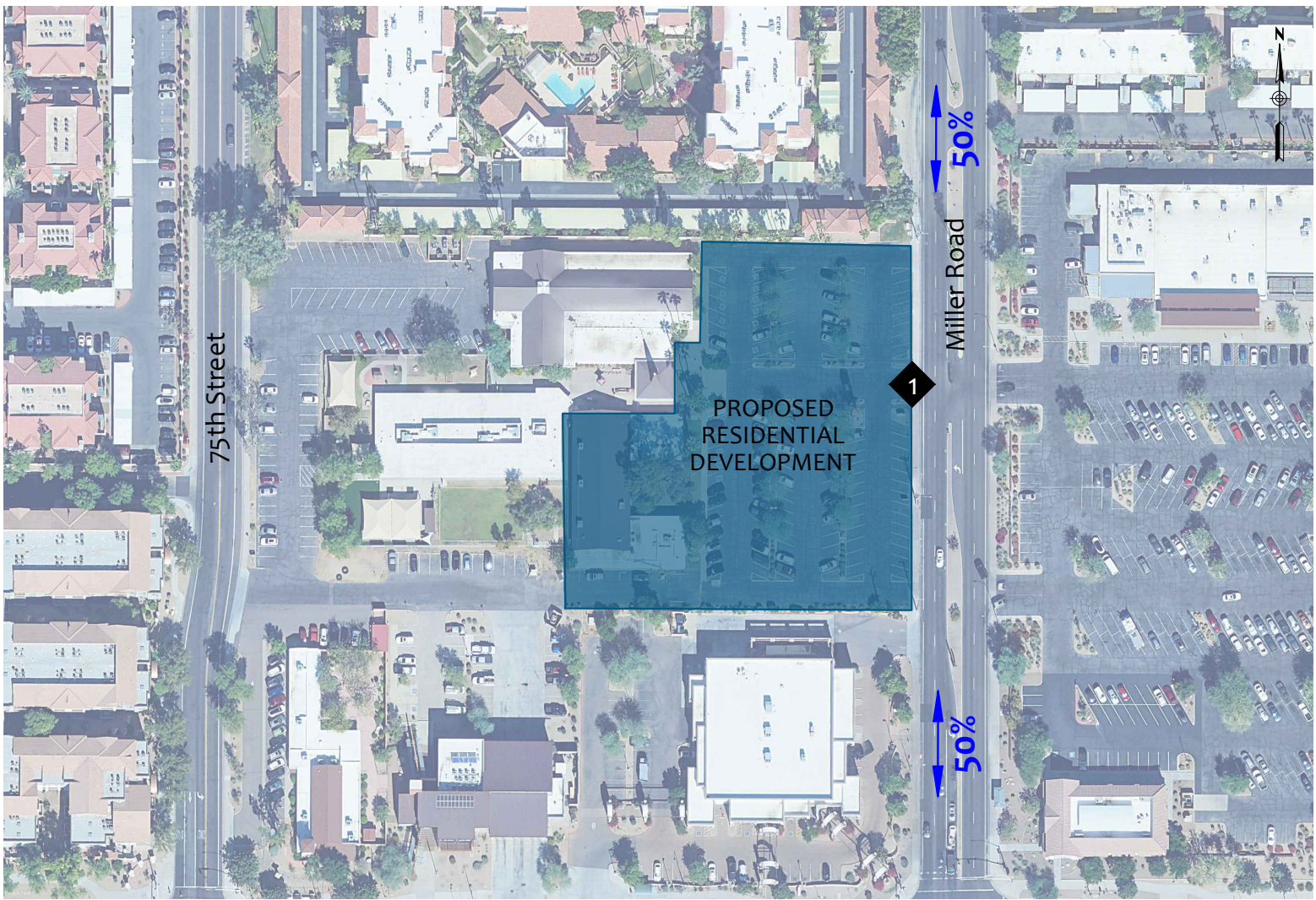
Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Multifamily Housing (Low-Rise)	220	85	Dwelling Units	620	49	12	37	57	36	21
Proposed Development Total				620	49	12	37	57	36	21
Shopping Plaza (40-150k) (w/o Supermarket)	821	52.0	1000 Sq Ft GFA	3,511	90	56	34	270	132	138
Existing Zoning (C-3 DO) - Total				3,511	90	56	34	270	132	138
Difference				-2,891	-41	-44	3	-213	-96	-117
Percent Difference				-82%	-46%	-79%	9%	-79%	-73%	-85%

The build-out of the proposed development is anticipated to generate 2,891 (82%) fewer weekday trips, with 41 (46%) fewer AM peak hour trips and 213 (79%) fewer PM peak hour trips than a development that is permitted under the existing zoning.

TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution procedure determines the general pattern of travel for vehicles entering and leaving the proposed development. The trip distribution and trip assignment for the proposed United Methodist Church Residential Development is generally based on the distribution of existing traffic along the surrounding roadway network, permitted movements at the proposed site driveways, and probable routes. The trip distribution is shown in [Figure 3](#).

The trip assignment was generally based on proximity of the site driveway to the major roadway network routes, permitted turn movements, as well as ease and probability of use. The site generated traffic volumes are also shown in [Figure 3](#).



Legend

AM(PM)	Peak Hour Traffic Volumes
XX%	Trip Distribution Percentages

FIGURE 3 | SITE DISTRIBUTION AND TRAFFIC VOLUMES



TURN LANE ANALYSIS

Turn lanes or deceleration lanes, allow vehicles exiting a roadway to slow to a reduced speed to execute a turn without impeding the main flow of traffic.

The City of Scottsdale 2018 *Design Standards & Policies Manual* Section 5.3.206 deceleration lane criteria is analyzed below for the study intersections where traffic volumes were available.

Right Turn Lane

Deceleration lanes are required at all new driveways on major arterials and at new commercial/retail driveways on minor arterials. To determine the need for a deceleration lane on streets classified as a minor arterial or collector, use the following criteria:

1. At least 5,000 vehicles per day are expected to be using the street.
2. The roadway's 85th percentile speed limit is at least 35 mph.
3. At least 30 vehicles will make right-turns into the driveway during a 1-hour period.

Using the above criteria, a right turn lane would not be required at the following study intersection:

- Miller Road and Driveway A (1) – southbound right turn lane.

Left Turn Lane

The primary access of the proposed residential development, Miller Road and Driveway A (1), currently exists with a northbound left turn lane. Vehicles making northbound left turns into the primary access of the proposed residential development will utilize the existing left turn lane.



SUMMARY

The proposed United Methodist Church Residential Development site is located at 4140 N. Miller Road in Scottsdale, Arizona, and is comprised of a maximum of 85 multifamily residential dwelling units.

Access to the proposed development will be along Miller Road, approximately 500-feet north of Indian School Road at the existing driveway. This will serve as the primary access point and will provide all movements into and out of the proposed residential development. There are two (2) other existing site driveways along Miller Road, allowing for right turns into and out of the proposed residential development. Additionally, there are two (2) existing site driveways along 75th Street, allowing all movements into and out of the site. All existing access points will remain in place.

Trip Generation

The proposed development is anticipated to generate 620 weekday daily trips, with 49 trips occurring during the AM peak hour and 57 trips occurring during the PM peak hour.

Trip Generation Comparison

The build-out of the proposed residential development is anticipated to generate 2,891 (82%) fewer weekday trips, with 41 (46%) fewer AM peak hour trips and 213 (79%) fewer PM peak hour trips than a development that is permitted under the existing zoning.

As previously mentioned, the recorded daily traffic counts report an ADT of 12,800 vpd along Miller Road, north of Indian School Road. According to the City of Scottsdale 2018 *Design Standards & Policies Manual* Section 5-3.104, a collector roadway has a capacity ranging from 15,000 to 30,000 vpd. Conservatively assuming that a collector roadway has a capacity of 15,000 vpd and that 100% of trips (620 weekday trips) utilize Miller Road north of Indian School Road to access the proposed residential development, the remaining capacity of Miller Road would be approximately 10.53% with the buildout of the proposed residential development.

In conclusion, the traffic generated by the proposed United Methodist Church Residential Development is anticipated to result in minimal traffic impacts to the existing roadway network and the surrounding area.



ATTACHMENT A – PROPOSED SITE PLAN

TABLE 9.104A	Weekdays						Weekends					
General Land Use Classification	12 am - 7.00 am		7.00 am - 6.00 pm		6.00 pm - 12.00 am		12 am - 7.00 am		7.00 am - 6.00pm		6.00 pm - 12.00 am	
Residential (Inc. guest)	100%	143	55%	79	85%	122	100%	143	65%	93	75%	108
Churches and places of worship	0%	0	10%	10	30%	28	0%	0	100%	92	30%	28
Daycare	100%	16	100%	16	100%	16	0%	0	0%	0	0%	0
	159		105		166		143		185		136	

PARKING REDUCTION W/ BIKE PARKING

WITH BIKE PARKING REDUCTION PER A9.104 C			
	REQ'D	REDUCTION (MAX 5%)	PROVIDED
CHURCH SPACES REQ'D	92	4	88
RESIDENTIAL SPACES REQ'D	93	0	93
DAYCARE SPACES REQ'D	0	0	0
			181

UNITS

1 BEDROOM = 55
2 BEDROOM = 13
3 BEDROOM = 17

TOTAL NO. UNITS = 85

REQUIRED PARKING (PER 9.104A SHARED) W/ BIKE PARKING REDUCTION PER A9.104 C

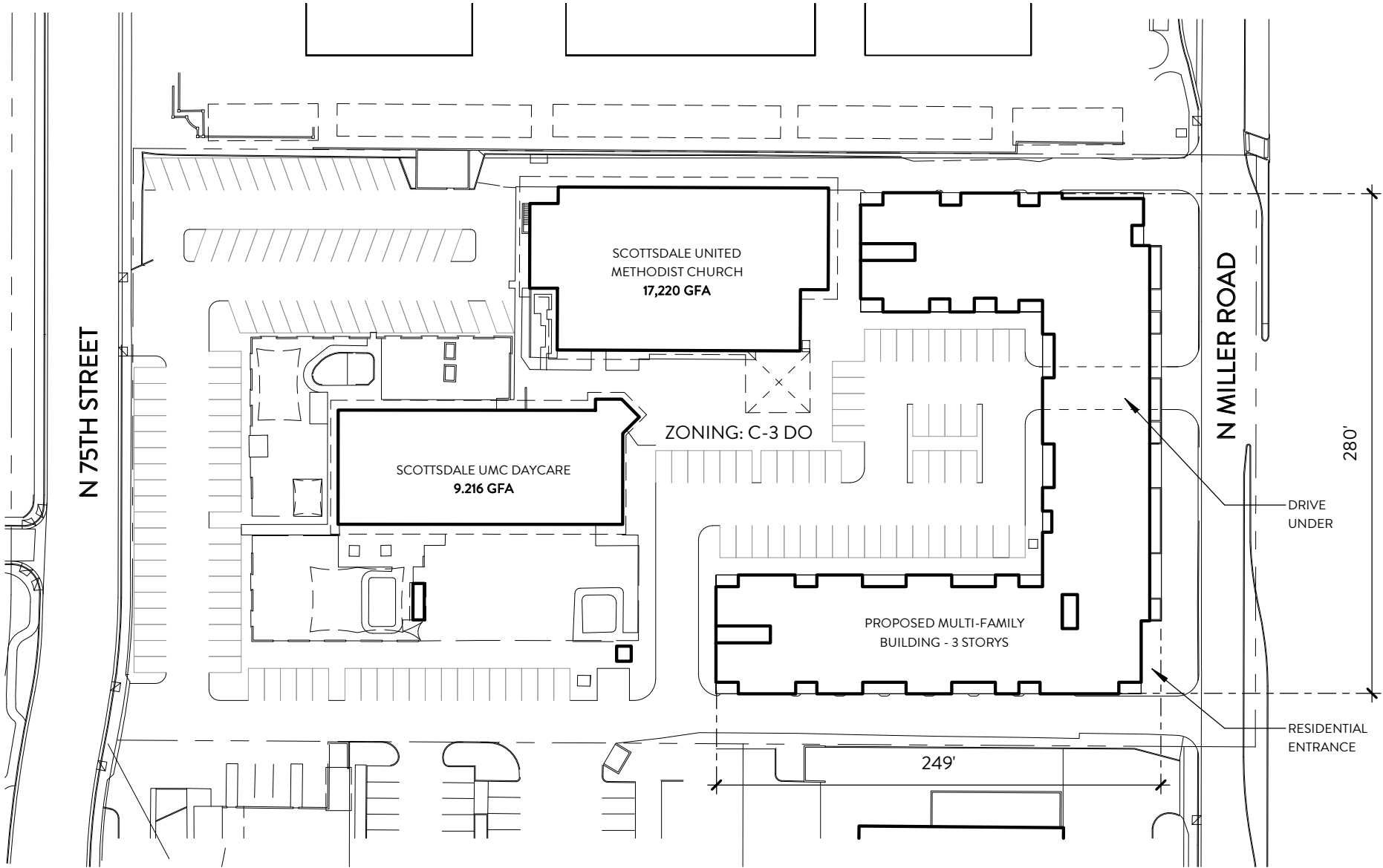
RESIDENTIAL (INC. GUEST) = 93 SPACES
UM CHURCH = 88 SPACES
UMC DAYCARE = 0 SPACES

TOTAL = 185 SPACES

PROPOSED PARKING

EXISTING = 90 SPACES
PROPOSED = 91 SPACES

TOTAL = 181 SPACES
6 ACCESSIBLE SPACES INCLUDING 1 VAN SPACE



PARKING RECAP			
	COUNT / AREA / SEATS	RATIO	PARKING REQUIRED
1BR	55	1.3	72
2BR	13	1.7	23
3BR	17	1.9	33
	85		128
RES. GUEST		1 PER 6 UNITS	15
TOTAL RESIDENTIAL			143
CHURCH - FIXED SEATING	215	1 PER 4 SEATS	54
CHURCH - CLASSROOMS & OTHER AREAS	11,370	1 PER 300SF GROSS	38
TOTAL CHURCH			92
DAYCARE CHILDREN	60	1 PER 15	4
DAYCARE STAFF	12	1 : 1	12
TOTAL DAYCARE			16
TOTAL VEHICLES (BEFORE REDUCTIONS)			251
BICYCLE PARKING (1 PER 10) - MAX 100			26



ATTACHMENT B – MARICOPA COUNTY ASSESSOR

173-52-001A

Commercial Parcel

This is a Commercial parcel located at [4140 N MILLER RD SCOTTSDALE 85251](#). The current owner is SCOTTSDALE METHODIST CHURCH. Its current year full cash value is \$18,831,848.

 MAPS

 PICTOMETRY

 VIEW/PAY TAX BILL

 DEED

 OWNER

 VALUATIONS

 ADDITIONAL INFO

 MAP FERRET

 REGISTER RENTAL

 PRINT DETAILS

PROPERTY INFORMATION



[4140 N MILLER RD SCOTTSDALE 85251](#)

MCR #

Description

N 331.59F OF S 631.59F OF E2 SE4 SW4 EX E 40F RD EX P/D 10287/551

Lat/Long

[1](#)

Lot Size

195,846 sq ft.

Lot #

High School District

SCOTTSDALE UNIFIED #48

Elementary School District

SCOTTSDALE UNIFIED SCHOOL DISTRICT

Local Jurisdiction

SCOTTSDALE

S/T/R 

23 2N 4E
Market Area/Neighborhood
19/006
Subdivision (0 Parcels)

OWNER INFORMATION


SCOTTSDALE METHODIST CHURCH
Mailing Address
4140 MILLER RD, SCOTTSDALE, AZ 85251
Deed Number
NOD-18750
Last Deed Date
12/25/1993
Sale Date
n/a
Sale Price
n/a

VALUATION INFORMATION


We provide valuation information for the past 5 years. For mobile display, we only show 1 year of valuation information. Should you need more data, please look at our data sales .
The Valuation Information displayed below may not reflect the taxable value used on the tax bill due to any special valuation relief program. CLICK HERE TO PAY YOUR TAXES OR VIEW YOUR TAX BILL 
Tax Year
2025
Full Cash Value 
\$18,831,848
Limited Value 
\$12,742,843
Legal Class
2.R
Description
AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio
15%
Assessed LPV
\$1,911,426
Property Use Code
9270

PU Description
Religious Ownership
Tax Area Code
481400
Valuation Source
Notice

ADDITIONAL PROPERTY INFORMATION



Additional property data.

Description	Imp #	Occupancy	Rank	CCI	Age	Sq Ft.
Church	000101	309	2	C	60	8,337
Church	000201	309	2	C	23	13,545
Church	000202	309	2	C	23	3,999
Elementary School (Entire)	000301	365	2	C	44	9,852
Site Improvements	000401	163	2	D	23	1

Construction Year
1964
Weighted Construction Year
1964
Improvement Quality
C (2)
Pool
No
Living Area
Patio(s)
Covered: 0 Uncovered: 0
Exterior Wall Type
Concrete Block
Roof Type
Bath Fixtures
0
Garage Stalls
0
Carport Stalls
0

MAP FERRET MAPS



Mapferret maps, also known as MapId maps, pdf maps, or output maps are now available here without having to search.

▶ [Parcel Maps \(1\)](#)

▶ [Book/Map Maps \(2\)](#)

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ATTACHMENT C – TRIP GENERATION



220 Multifamily Housing (Low-Rise)		(One to Three Levels)																			
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour		
				Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out
Multifamily Housing (Low-Rise)	220	85	Dwelling Units	6.74	50%	50%	0.40	24%	76%	0.51	63%	37%	573	287	286	34	8	26	43	27	16
Multifamily Housing (Low-Rise)	220	85	Dwelling Units	2.46	50%	50%	0.13	24%	76%	0.08	63%	37%	209	105	104	11	3	8	7	4	3
Multifamily Housing (Low-Rise)	220	85	Dwelling Units	12.50	50%	50%	0.73	24%	76%	1.04	63%	37%	1,063	532	531	62	15	47	88	55	33
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour		
				Equation	% In	% Out	Equation	% In	% Out	Equation	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out
Multifamily Housing (Low-Rise)	220	85	Dwelling Units	$T=6.41(X)+75.31$	50%	50%	$T=0.31(X)+22.85$	24%	76%	$T=0.43(X)+20.55$	63%	37%	620	310	310	49	12	37	57	36	21
Multifamily Housing (Low-Rise)				Standard Deviation	1.79		0.12			0.15											
				Number of Studies	22		49			59											
				Average Size	229		249			241											
				R ²	0.86		0.79			0.84											

Average
Minimum
Maximum

Equation

821 Shopping Plaza (40-150k) (w/o Supermarket)																					
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour		
				Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out
Shopping Plaza (40-150k) (w/o Supermarket)	821	52.0	1000 Sq Ft GFA	67.52	50%	50%	1.73	62%	38%	5.19	49%	51%	3,511	1,755	1,756	90	56	34	270	132	138
Shopping Plaza (40-150k) (w/o Supermarket)	821	52.0	1000 Sq Ft GFA	43.29	50%	50%	0.29	62%	38%	2.55	49%	51%	2,251	1,125	1,126	15	9	6	133	65	68
Shopping Plaza (40-150k) (w/o Supermarket)	821	52.0	1000 Sq Ft GFA	91.06	50%	50%	3.77	62%	38%	15.31	49%	51%	4,735	2,367	2,368	196	122	74	796	390	406
Land Use	ITE Code	Qty	Unit	Weekday			AM Peak Hour			PM Peak Hour			Weekday			AM Peak Hour			PM Peak Hour		
				Equation	% In	% Out	Equation	% In	% Out	Equation	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out
Shopping Plaza (40-150k) (w/o Supermarket)	821	52.0	1000 Sq Ft GFA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shopping Plaza (40-150k) (w/o Supermarket)		Standard Deviation		19.25			1.06			2.28											
		Number of Studies		7			13			42											
		Average Size		59			67			79											
		R ²		N/A			N/A			N/A											

Average
Minimum
Maximum

Equation