To:	Chuck Chisholm K. Hovnanian Homes	**Date:**	July 10, 2024
From:	Shelly Sorenson, PE, PTOE		
Job Number:	24.5616		
RE:	Aria at Silverstone Transportation Impact & Mitigation Analysis – Category I		

INTRODUCTION

Lōkahi, LLC (Lōkahi) has prepared a Transportation Impact & Mitigation Analysis – Category I for the proposed Aria at Silverstone, located on the northeast corner of Scottsdale Road and Williams Drive in Scottsdale, Arizona. See **Figure 1** for the vicinity map.

The proposed site will be comprised of 100 2-story single family residential dwelling units. See **Attachment A** and **Figure 2** for the site plan.

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

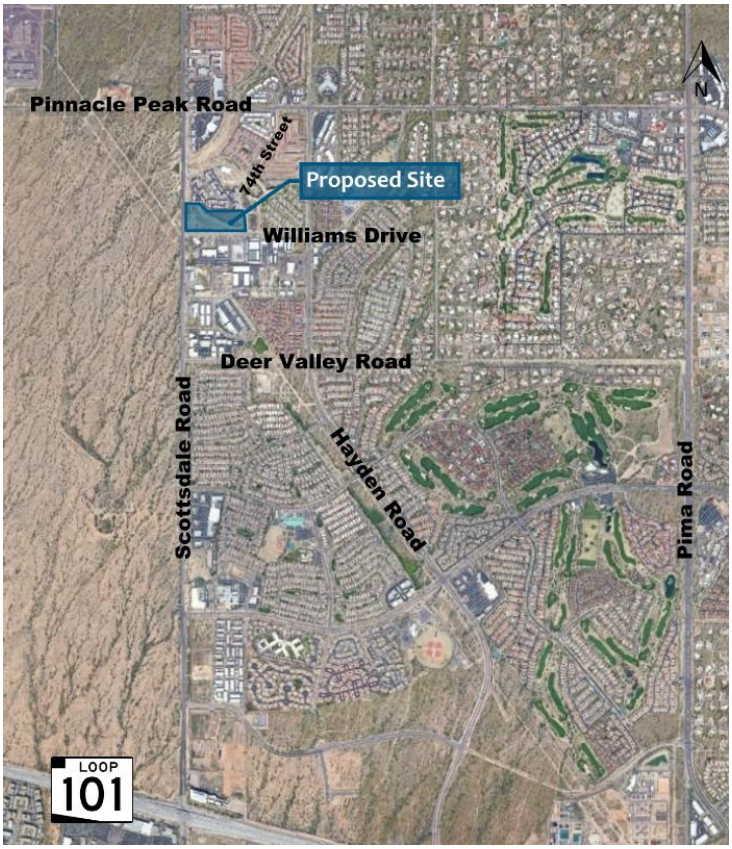


Figure 1 - Vicinity Map

10555 N. 114th Street, Suite 105
Scottsdale, AZ 85259
480.536.7150
www.lokahigroup.com

collaboration unity harmony cooperation

EXISTING CONDITIONS

The approximate 588,922 square foot site consists of one (1) existing parcel, APN 212-03-596. APN 212-03-596 is currently vacant undeveloped land and is zoned for Commercial Office (C-O PCD) uses. See **Attachment B** for Maricopa County Assessor's parcel information.

The proposed development is bordered by Scottsdale Road to the west and Williams Drive to the south. An apartment complex borders the proposed development to the north, and 74th Street borders the proposed development to the east.

Scottsdale Road is a north-south roadway that provides two (2) through lanes in each direction of travel, with a center wo-way left-turn lane (TWLTL). The City of Scottsdale classifies Scottsdale Road north of Thompson Peak Parkway as a major 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 25,200 vehicles per day (vpd) and 33,400 vpd along Scottsdale Road, north and south of Williams Drive, respectively. There is a posted speed limit of 50 miles per hour (mph).

Williams Drive is an east-west roadway that provides one (1) through lane in each direction of travel with a center TWLT). There is a posted speed limit of 30 mph. The City of Scottsdale classifies Williams Drive as a minor collector, according to the *City of Scottsdale Transportation Master Plan,* dated July 5, 2016. As reported in the City of Scottsdale's *2022 Traffic Volume & Collision Report*, dated September 2023, there is an ADT of 3,200 vpd along Williams Drive between Scottsdale Road and Miller Road.

74th Street is a north-south roadway that provides one (1) through lane in each direction of travel. There is a posted speed limit of 25 mph.

COLLISION RATES

The City of Scottsdale's 2022 Traffic Volume & Collision Report provides collision rate and traffic volume information on major roadway segments and at major intersections within the City. Segment collisions are collisions that occur on a major street more than 100 feet from the major intersections that define the segment, including at minor intersections within the segment. Intersection collisions are collisions that occur at or within 100 feet of a major intersection. The collision rate and city-wide ranking for study roadway segments and intersections are shown in **Table 1** and **Table 2**, respectively.

Table 1 – Collision Rates - Study Roadway Segment(s)

Segment	From	To	Collision Rate	Rank
Scottsdale Road	Williams Drive	Pinnacle Peak Road	1.41	94
Scottsdale Road	Deer Valley Road	Williams Drive	0.57	199
Williams Drive	Scottsdale Road	Miller Road	1.71	79
2022 City of Scottsdale Average Segment Collision Rate			1.17	

Table 2 – Collision Rates – Study Intersection(s)

Intersection	Collision Rate	Rank
Scottsdale Road and Williams Drive	0.06	193
Miller Road and Williams Drive	0.54	76
2022 City of Scottsdale Average Intersection Collision Rate	0.51	

PROPOSED DEVELOPMENT

The proposed development will consist of 100 2-story single family residential dwelling units. See **Figure 2** for the proposed site plan.

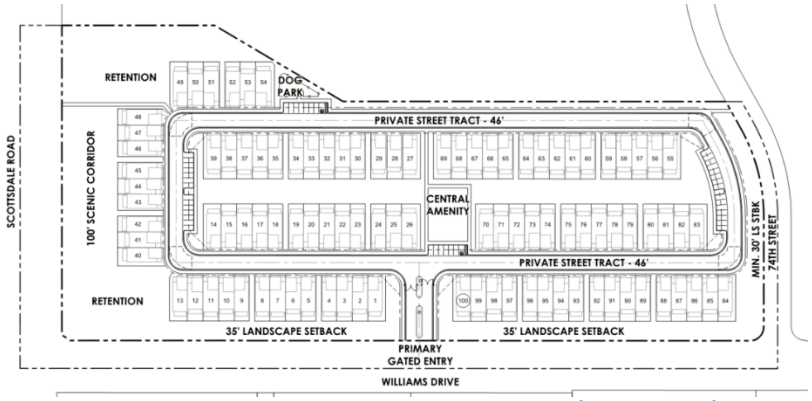


Figure 2 - Site Plan

Access to the proposed development will be along Williams Drive, approximately 670 feet east of Scottsdale Road and will align with the existing shared driveway of the Auto Repair shop and Cox Dispatch Center. This will serve as the primary access point and will provide all movements into and out of the proposed development. Additionally, there is a proposed emergency access only along Williams Drive, approximately 200 feet west of 74th Street.

TRIP GENERATION

The trip generation for the proposed Aria at Silverstone 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.

Previously Approved Development (Phase 5)

Phase 5 of the previously approved site (case 15-ZN-2005) consisted of approximately 165,000 square feet of office space.

The trip generation for the previously approved development was calculated utilizing ITE Land Use 710 – General Office Building. Trip generation calculations are shown in **Table 3**. See for **Attachment C** detailed trip generation calculations.

Table 3 – Trip Generation (Previously Approved Development – Phase 5)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
General Office Building	710	165.0	1000 SF GFA	1,794	258	227	31	252	43	209

The previously approved development generates 1,794 weekday daily trips, with 258 trips occurring during the AM peak hour and 252 trips during the PM peak hour.

Proposed Development

The trip generation for the proposed development was calculated utilizing ITE Land Use 215 – Single-Family Attached Housing. Trip generation calculations are shown in **Table 4**. See **Attachment C** for detailed trip generation calculations.

Table 4 – Trip Generation (Proposed Development)

Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Attached Housing	215	100	Dwelling Units	712	46	12	34	56	33	23
			Total	712	46	12	34	56	33	23

The proposed development is anticipated to generate 712 weekday daily trips, with 46 trips occurring during the AM peak hour and 56 trips occurring during the PM peak hour.

TRIP GENERATION COMPARISON

Proposed Development versus Previously Approved Development

A trip generation comparison between the proposed development and the previously approved development is shown in **Table 5**.

Table 5 – Trip Generation Comparison
(Proposed Development vs. Previously Approved Development)

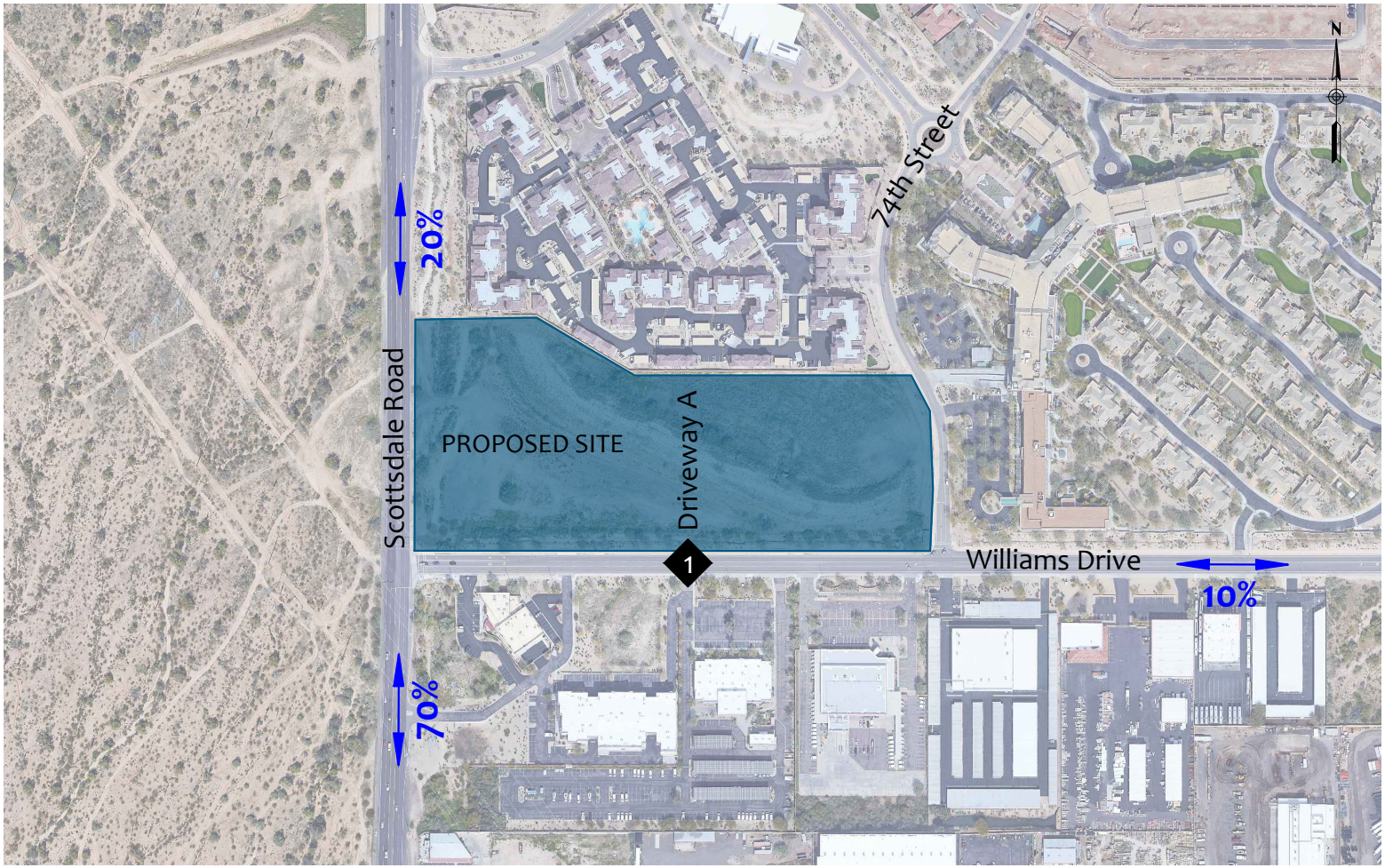
Land Use	ITE Code	Qty	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Single-Family Attached Housing	215	100	Dwelling Units	712	46	12	34	56	33	23
Proposed Development Total				712	46	12	34	56	33	23
General Office Building	710	165.0	1000 SF GFA	1,794	258	227	31	252	43	209
Previously Proposed Development (Phase 5)				1,794	258	227	31	252	43	209
Difference				-1,082	-212	-215	3	-196	-10	-186
Percent Difference				-60%	-82%	-95%	10%	-78%	-23%	-89%

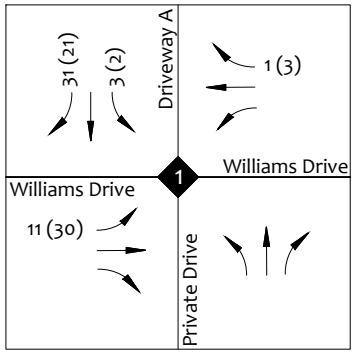
The build-out of the proposed development is anticipated to generate 1,082 (60%) fewer weekday trips, with 212 (82%) fewer AM peak hour trips and 196 (78%) fewer trips during the PM peak hour than the previously approved development.

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 Aria at Silverstone 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

RIGHT 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 intersection of **Williams Drive and Driveway A (1)**.

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 vehicle 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.*

Williams Drive and Driveway A (1)
Williams Road is classified as a minor collector and therefore right turn lanes are analyzed using the three criteria listed above.

1. As previously states, as reported in the City of Scottsdale's *2022 Traffic Volume & Collision Report*, dated September 2023, there is an ADT of 3,200 vpd along Williams Drive between Scottsdale Road and Miller Road.
   This criteria is NOT MET.

2. The posted speed limit along Williams Drive is 30 mph.
   This criteria is NOT MET.

3. As shown in **Figure 3** the westbound right turns is 1 in the AM peak hour and 3 in the PM peak hour.
   This criteria is NOT MET.

Therefore, using the above criteria, a right turn lane is **NOT** required at the following study intersection:

- Williams Road and Driveway A (1) – westbound right turn lane.

SUMMARY

The proposed Aria at Silverstone site is generally located on the northeast corner of Scottsdale Road and Williams Drive in Scottsdale, Arizona, and is comprised of 100 2-story single family residential dwelling units.

Access to the proposed development will be along Williams Drive, approximately 670 feet east of Scottsdale Road. This will serve as the primary access point and will provide all movements into and out of the proposed development. Additionally, there is a proposed emergency access only along Williams Drive, approximately 200 feet west of 74th Street.

Trip Generation

The proposed development is anticipated to generate 712 weekday daily trips, with 46 trips occurring during the AM peak hour and 56 trips occurring during the PM peak hour.

Trip Generation Comparison

The build-out of the proposed development is anticipated to generate 1,082 (60%) fewer weekday trips, with 212 (82%) fewer AM peak hour trips and 196 (78%) fewer trips during the PM peak hour than the previously approved development.

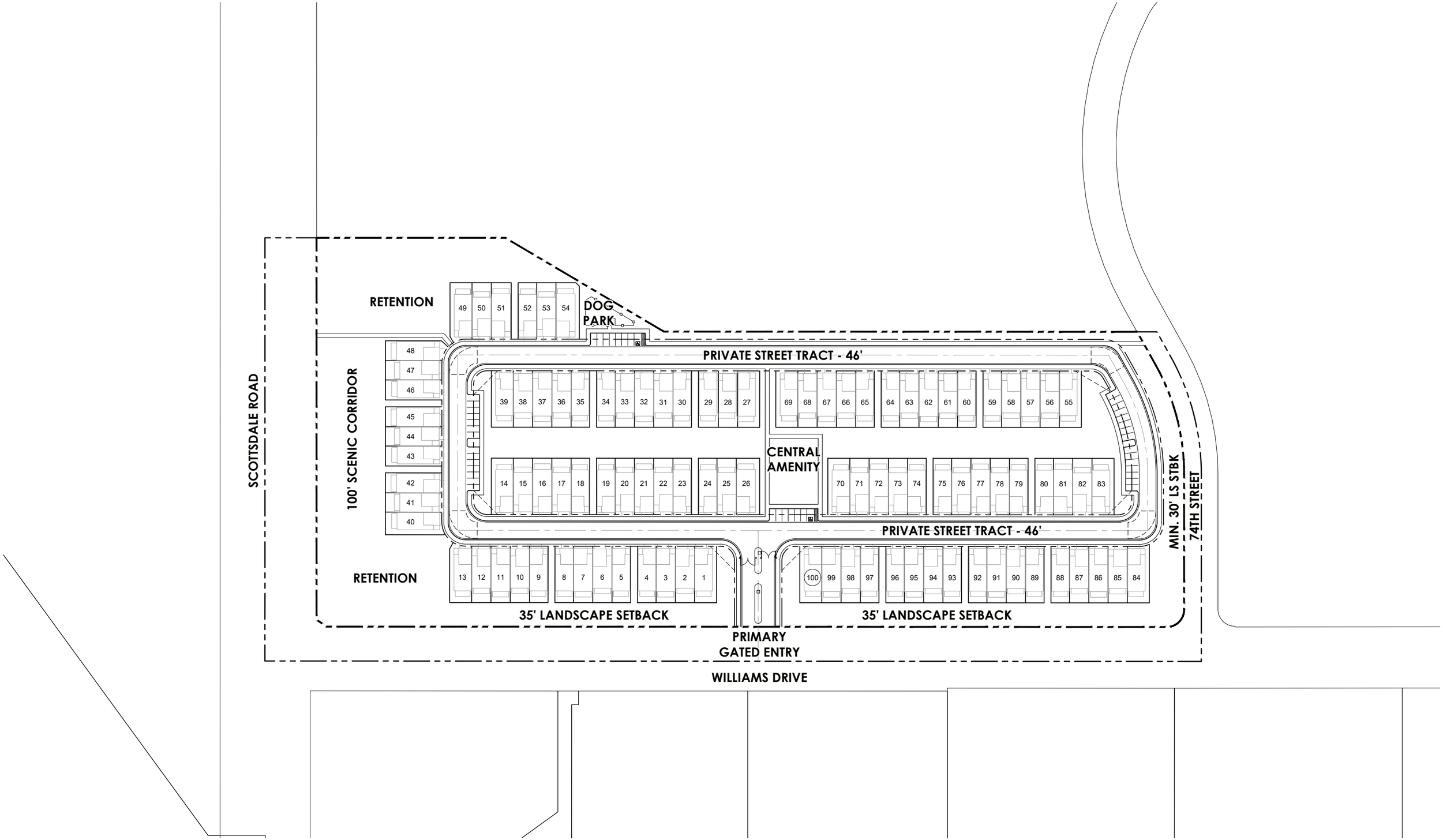
The existing average daily traffic along Scottsdale Road north of Williams Drive is 25,200 vpd. Assuming 20% of the site trips (142 weekday trips) using this segment of roadway to access the proposed development results in an increase of 0.57% in average weekday daily trips.

The existing average daily traffic along Scottsdale Road south of Williams Drive is 33,400 vpd. Assuming 70% of trips (499 weekday trips) using this segment of roadway to access the proposed development results in an increase of 1.5% in average weekday daily trips.

The existing average daily traffic along Williams Drive east of Scottsdale Road is 3,200 vpd. Assuming 10% of the trips (71 weekday trips) using this segment of roadway to access the proposed development results in an increase of 2.2% in average weekday daily trips.

In conclusion, with the build out of the proposed NEC Crismon and Pecos development, the adjacent and nearby surrounding roadways are anticipated to maintain acceptable traffic operations.

ATTACHMENT A – PROPOSED SITE PLAN



RVi
4900 N. Scottsdale Rd. Suite 1200
Scottsdale, Arizona 85251
Tel: 480.994.0994
www.rviplanning.com

ARIA AT SILVERSTONE PHASE 5 • **CONCEPTUAL SITE PLAN**

SCOTTSDALE, AZ
2024-07-01
24000634
K. HOVNANIAN

0 30' 60' 120'
SCALE: 1" = 60'-0"

ATTACHMENT B – MARICOPA COUNTY ASSESSOR

B

212-03-596

Land Parcel

This is a Land parcel located at 22602 N 74TH ST SCOTTSDALE 85255. The current owner is SILVERSTONE DEVELOPMENT INC. It is located in the SILVERSTONE AT PINNACLE PEAK MOD subdivision, and MCR 88317. Its current year full cash value is $10,347,300.

MAPS

PICTOMETRY

$ VIEW/PAY TAX BILL

DEED

OWNER

VALUATIONS

ADDITIONAL INFO

MAP FERRET

REGISTER RENTAL

PRINT DETAILS

PROPERTY INFORMATION

22602 N 74TH ST SCOTTSDALE 85255

MCR #
88317
Description
SILVERSTONE AT PINNACLE PEAK MOD MCR 883-17 PARCEL D
Lat/Long
|
Lot Size
588,922 sq ft.
Lot #
D
High School District
PARADISE VALLEY UNIFIED #69
Elementary School District
PARADISE VALLEY UNIFIED SCHOOL DISTRICT

Local Jurisdiction
SCOTTSDALE
S/T/R ⓘ
14 4N 4E
Market Area/Neighborhood
07/003
Subdivision (5 Parcels)
SILVERSTONE AT PINNACLE PEAK MOD

OWNER INFORMATION

SILVERSTONE DEVELOPMENT INC

Mailing Address
14747 N NORTHSIGHT BLVD 111-431, SCOTTSDALE, AZ 85260
Deed Number
20061537453
Last Deed Date
11/22/2006
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
2024
Full Cash Value ⓘ
$10,347,300
Limited Value ⓘ
$2,892,722
Legal Class
2.R
Description
AG / VACANT LAND / NON-PROFIT R/P
Assessment Ratio
15%

Assessed LPV
$433,908
Property Use Code
0021
PU Description
Vacant Land
Tax Area Code
691400
Valuation Source
Notice

ADDITIONAL PROPERTY INFORMATION

Additional property data.

Construction Year
Weighted Construction Year
Improvement Quality
()
Pool
Living Area
Patio(s)
Covered: | Uncovered:
Exterior Wall Type
Roof Type
Bath Fixtures
Garage Stalls
Carport Stalls

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)
- Subdivision Maps (6)
- MCR Maps (6)

Book/Map Maps (27)

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ATTACHMENT C – TRIP GENERATION

215 Single-Family Attached Housing

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	
Single-Family Attached Housing	215	100	Dwelling Units	7.20	50%	50%	0.48	25%	75%	0.57	59%	41%	720	360	360	48	12	36	57	34	23	Average
Single-Family Attached Housing	215	100	Dwelling Units	4.70	50%	50%	0.12	25%	75%	0.17	59%	41%	470	235	235	12	3	9	17	10	7	Minimum
Single-Family Attached Housing	215	100	Dwelling Units	10.97	50%	50%	0.74	25%	75%	1.25	59%	41%	1,097	549	548	74	19	55	125	74	51	Maximum
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	
Single-Family Attached Housing	215	100	Dwelling Units	T=7.62(X)-50.48	50%	50%	T=0.52(X)-5.70	25%	75%	T=0.60(X)-3.93	59%	41%	712	356	356	46	12	34	56	33	23	Equation

Single-Family Attached Housing	Standard Deviation	1.61		0.14		0.18
	Number of Studies	22		46		51
	Average Size	120		135		136
	R^2	0.94		0.92		0.91

Lokahi

Scenario 1 - Previously Proposed Development (Parcel D)

710 General Office Building

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	
General Office Building	710	165.0	1000 SF GFA	10.84	50%	50%	1.52	88%	12%	1.44	17%	83%	1,789	895	894	251	221	30	238	40	198	Average
General Office Building	710	165.0	1000 SF GFA	3.27	50%	50%	0.32	88%	12%	0.26	17%	83%	540	270	270	53	47	6	43	7	36	Minimum
General Office Building	710	165.0	1000 SF GFA	27.56	50%	50%	4.93	88%	12%	6.2	17%	83%	4,547	2,274	2,273	813	715	98	1,023	174	849	Maximum
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	
General Office Building	710	165.0	1000 SF GFA	Ln(T)=0.87Ln(X)+3.05	50%	50%	Ln(T)=0.86Ln(X)+1.16	88%	12%	Ln(T)=0.83Ln(X)+1.29	17%	83%	1,794	897	897	258	227	31	252	43	209	Equation

General Office Building	Standard Deviation	4.76		0.58		0.6	
	Number of Studies	59		221		232	
	Average Size	163		201		199	
	R^2	0.78		0.78		0.77	