

To: Mike James Date: February 5, 2025

**Wood Partners** 

From: Shelly Sorensen, PE, PTOE

**Job Number:** 25.5771

**RE:** Indian School & Goldwater

Transportation Impact & Mitigation Analysis

- Category I



#### INTRODUCTION

Lōkahi, LLC (Lōkahi) has prepared a Transportation Impact & Mitigation Analysis – Category I for the proposed Indian School & Goldwater development, located on the northwest corner of Indian School Road and Goldwater Boulevard in Scottsdale, Arizona. See Figure 1 for the vicinity map.

The proposed site will be comprised of a 232 multifamily dwelling unit



Figure 1 - Vicinity Map

apartment complex with 30,353 square feet of ground level retail and 2,307 square feet of flex space. 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.





#### **EXISTING CONDITIONS**

The approximate 4.2 acre site consists of five (5) parcels (APN 173-48-047D, 173-48-047A, 173-48-056A, 173-48-055E, and 173-48-050A). The City of Scottsdale Zoning website, updated May 13, 2021, reports the site as zoned for Downtown, Office Commercial, Type 2, Planned Block Development, Downtown Overlay (D/OC-2 PBD DO) land use.

The site currently consists of the following land uses:

Motel
 98 rooms

• Office 36,074 square feet

• Retail 6,165 square feet

**Restaurant** 4,806 square feet

See Attachment B for Maricopa County Assessor's parcel information.

The proposed development is bordered by 5<sup>th</sup> Avenue to the north, Indian School Road to the south, office space to the west, Goldwater Boulevard to the east, and a strip mall to the northeast.

5<sup>th</sup> Avenue is a northeast-southwest undivided roadway that provides one (1) through lane in each direction of travel. This roadway connects Bell Road and Scottsdale Road and provides access to several businesses. There is an unposted speed limit is 25 miles per hour (mph).

**Goldwater Boulevard** is a north-south roadway that provides three (3) through lanes in the southbound direction of travel and two (2) lanes in the northbound direction, with a raised median. The City of Scottsdale classifies Goldwater Boulevard as a minor arterial, according to the *Transportation Action Plan*, dated April 11, 2022. The City of Scottsdale's 2022 Average Daily Segment Traffic (ADT) Volumes map reports an ADT of 18,900 vehicles per day (vpd) along Goldwater Boulevard, between Camelback Road and Indian School Road. The map also reports an ADT of 11,000 vpd along Goldwater Boulevard, between Indian School Road and Osborn Road. There is a posted speed limit of 35 mph.

Indian School Road is an east-west roadway that provides two (2) through lanes and a bike lane in each direction of travel, with a raised median. The City of Scottsdale classifies Indian School Road as a minor arterial, according to the *Transportation Action Plan*, dated April 11, 2022. The City of Scottsdale's 2022 Average Daily Segment Traffic (ADT) Volumes map reports an ADT of 30,000 vpd along Indian School Road, between 68<sup>th</sup> Street and Goldwater Boulevard. The map also reports an ADT of 24,400 vpd along Indian School Road, between Goldwater Boulevard and Scottsdale Road. There is a posted speed limit of 35 mph.





#### PROPOSED DEVELOPMENT

The proposed site will consist of a 232 multi-family DU apartment complex with 30,353 square feet of ground-floor retail and 2,307 square feet of flexible leasing space. The 232 DU will consist of 26 studio units, 116 one-bedroom units, 83 two-bedroom units, and 83 three-bedroom units.

There will be two (2) access points to the proposed development.

The first access point is located along Goldwater Boulevard, approximately 405 feet north of Indian School Road. This driveway will be limited access, permitting right-in/right-out turning movements only.

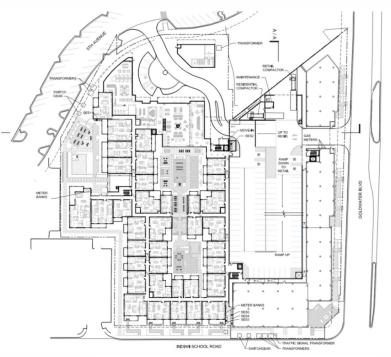


Figure 2 - Site Plan

The third access point is located along 5<sup>th</sup> Avenue, approximately 460 feet southwest of Goldwater Boulevard. This driveway will be full access, permitting all ingress/egress turning movements into the site.

#### PREVIOUS STUDIES

#### THE 2007 TIA

A Traffic Impact Analysis, dated December 2007, and titled Handover Mixed-Use Development Traffic Impact Analysis 1<sup>st</sup> Submittal ("2007 TIA"), was completed by CivTech, Inc. and approved by the City of Scottsdale with a buildout year of 2010. See **Attachment C**.

The 2007 TIA included the following land uses:

Multifamily Apartment

247 DU

• Retail/Restaurant

~23,800 square feet

The trip generation methodology used in the 2007 TIA was based on the Institute of Transportation Engineers (ITE) Trip Generation, 7<sup>th</sup> Edition and the ITE Trip Generation Handbook, 2<sup>nd</sup> Edition.

The 2007 TIA also considered internal capture within the proposed development, based on a 10% capture rate. See **Table 1** below.





Table 1 - Trip Generation - 2007 TIA

Land Use	ITE Qty Unit Weekday	А٨	1 Peak Ho	our	PM Peak Hour					
Land Ose	Code	Qty	Offic	Total	Total	ln	Out	Total	ln	Out
Low Rise Residential Condominium	231	247	Dwelling Units	1,448	166	42	124	193	112	81
Shopping Center	820	23.8	1,000 SF	2,950	73	45	28	269	129	140
Quality Restaurant	931	4	1,000 SF	360	4	3	1	30	20	10
Subtotal					243	90	153	492	261	231
Internal Capture					24	9	15	49	26	23
	External Trips					81	138	443	235	208

Trip Generation from 2007 TIA\*

The buildout of the proposed development was anticipated to generate 4,758 weekday trips, with 243 occurring during the AM peak hour and 261 in the PM peak hour. After internal capture, the development was anticipated to generate 4,282 external weekday trips, with 219 AM peak hour trips and 443 PM hour trips.

The 2007 TIA includes recommended improvements to the roadway network to mitigate the impact of site generated traffic.

#### THE 2012 UPDATE

A Trip Generation Statement, dated February 1, 2012, and titled *Trip Generation Statement for the E. Indian School & N. Goldwater development in Scottsdale, Arizona* ("2012 Update") was completed by CivTech, Inc. and approved by the City of Scottsdale. The 2012 Update served as an update to the 2007 TIA. See **Attachment D**.

The 2012 Update included the following land use:

#### • Multifamily Apartment

420 DU

The trip generation methodology used in the 2012 Update was based on the Institute of Transportation Engineers (ITE) Trip Generation, 8<sup>th</sup> Edition and the ITE Trip Generation Handbook, 2<sup>nd</sup> Edition. See **Table 2** below.

Table 2 – Trip Generation – 2012 Update

					P	•				
Land Use	ITE	Oty Unit —	Weekday	A٨	1 Peak Ho	our	PM Peak Hour			
Land Ose	Code		Offic	Total	Total	ln	Out	Total	ln	Out
Apartments	220	420	Dwelling Units	2,794	215	43	172	261	170	91
			External Trips	2,794	215	43	172	261	170	91
Trin Generation from 2012 Undate*										





The trip generation resulted in 2,794 weekday trips, with 215 occurring during the AM peak hour and 261 during the PM peak hour.

When compared to the 2007 TIA, the 2012 Update resulted in 1,428 fewer weekday trips with 4 fewer AM peak hour trips and 182 fewer PM peak hour trips.

#### TRIP GENERATION

The trip generation for the proposed Indian School & Goldwater development was calculated utilizing the Institute of Transportation Engineers (ITE) publication entitled *Trip Generation*, 11<sup>th</sup> *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.

#### **Internal Capture**

Given the mixed-use nature of the proposed land uses, it is anticipated that some of the trips will be internal, i.e., beginning and ending within the development. Based on the NCHRP Report 684 – Enhancing Internal Trip Capture Estimation of Mixed-Use Developments, the internal capture rates for trip origins and trip destinations within a multi-use development were applied for weekday AM and PM hours.

#### TRIP GENERATION - PROPOSED LAND USE

ITE Land Use 221 - Multifamily Housing (Mid-Rise) and ITE Land Use 822 – Strip Retail Plaza (<40k) were used to calculate the trip generation for the proposed land use. For the purpose of this analysis, it is assumed that the "flex" land use will be used as retail. The total trip generation for the proposed development is shown in **Table 3**. See **Attachment E** for detailed trip generation calculations.

Table 3 - Trip Generation - Proposed Development

Land Use	landlike ITE Ott. Unite	Unit	Weekday	AM Peak Hour			PM Peak Hour			
Land Use	Code	Qty	Offic	Total	Total	ln	Out	Total	ln	Out
Multifamily Housing (Mid-Rise)	221	232	Dwelling Units	1,053	86	20	66	90	55	35
Strip Retail Plaza (<40k)	822	32.7	1000 SF GLA	1,778	77	47	30	215	107	108
Subtota				2,831	163	67	96	305	162	143
Internal Capture			ernal Capture	377	2	1	1	72	36	36
External Trips			2,454	161	66	95	233	126	107	

The proposed Indian School & Goldwater development is anticipated to generate 2,831 weekday trips, with 163 trips occurring during the AM peak hour and 305 trips occurring during the PM peak hour. After internal capture, the proposed development is anticipated to generate 2,454 external weekday trips, with 161 occurring during AM peak and 233 during PM peak hour.





#### TRIP GENERATION - EXISTING LAND USE

As stated earlier, the site currently has the following land use:

• Motel 98 rooms

Office 36,074 square feetRetail 6,165 square feet

• **Restaurant** 4,806 square feet

ITE Land Use 320 – Motel, ITE Land Use 710 – General Office Building, ITE Land Use 822 – Strip Retail Plaza (<40k), and ITE Land Use 932 – High-Turnover (Sit-Down) Restaurant were used to calculate the trip generation of the existing development, see **Table 4**.

Table 4 - Trip Generation - Existing Land Use

Land Use	ITE	TE . Qty Uni		Unit Weekday AM Peak Hour			our	PM Peak Hour		
Latiu Ose	Code	Ųι	Offic	Total	Total	ln	Out	Total	ln	Out
Motel	320	98	Rooms	328	34	13	21	35	19	16
General Office Building	710	36.1	1000 SF GFA	478	70	62	8	71	12	59
Strip Retail Plaza (<40k)	822	6.2	1000 SF GLA	336	15	9	6	41	20	21
High-Turnover (Sit-Down) Restaurant	932	4.8	1000 SF GFA	515	46	25	21	43	26	17
Subtotal				1,657	165	109	56	190	77	113
Internal Capture			446	46	23	23	40	20	20	
External Trips				1,211	119	86	33	150	57	93

<sup>\*</sup> Square footage obtained from Maricopa County Assessor

The existing land use generates 1,657 weekday trips, with 165 trips occurring during the AM peak hour and 190 trips occurring during the PM peak hour. After internal capture, the development generates 1,221 external weekday trips, with 119 occurring during the AM peak hour and 150 occurring during the PM peak hour.

#### TRIP GENERATION COMPARISON – EXISTING VS PROPOSED LAND USE

External trips generated by the existing land use were subtracted from the trips expected to be generated by the proposed land use. The resulting trip generation comparison is shown in **Table 5**.





Table 5 – Trip Generation Comparison – Existing vs. Proposed Land Use

	ITE			Weekday	ΔΑ	A Peak Ho	our.	PM Peak Hour			
Land Use		Qty	Unit	,							
	Code			Total	Total	ln	Out	Total	ln	Out	
Multifamily Housing (Mid-Rise)	221	232	Dwelling Units	1,053	86	20	66	90	55	35	
Strip Retail Plaza (<40k)	822	33	1,000 SF GLA	1,778	77	47	30	215	107	108	
		Trips Prop	osed Land Use	2,831	163	67	96	305	162	143	
In	ternal Ca <sub>l</sub>	oture Prop	osed Land Use	377	2	1	1	72	36	36	
	External	Trips Prop	osed Land Use	2,454	161	66	95	233	126	107	
Motel	320	98	Rooms	328	34	13	21	35	19	16	
General Office Building	710	36	1,000 SF GFA	478	70	62	8	71	12	59	
Strip Retail Plaza (<40k)	822	6	1,000 SF GLA	336	15	9	6	41	20	21	
High-Turnover (Sit-Down) Restaurant	932	5	1,000 SF GFA	515	46	25	21	43	26	17	
Trips Existing Land Use				1,657	165	109	56	190	77	113	
Internal Capture Proposed Land Use				446	46	23	23	40	20	20	
	External Trips Proposed Land Use					86	33	150	57	93	
Total New External Trips					43	-20	63	84	69	15	

Compared to the existing land use, the proposed development is anticipated to generate 1,243 more external weekday trips, with 43 occurring during the AM peak hour and 84 occurring during the PM peak hour.





#### TRIP GENERATION COMPARISON - PREVIOUS STUDIES

As previously mentioned, a Traffic Impact Analysis was conducted for the site in 2007 and updated in 2012. The anticipated trip generation of the proposed Indian School & Goldwater development and the land use in the previous studies have been compared.

#### 2007 TIA

See **Table 6** for a comparison of the trip generation of the proposed development compared to the 2007 TIA.

Table 6 – Trip Generation – Proposed Land Use vs. 2007 TIA

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Land Use	ITE	Qty	Unit	Weekday	A٨	1 Peak Ho	our	PM Peak Hour			
Land Ose	Code	ζιy	Offic	Total	Total	In	Out	Total	In	Out	
Multifamily Housing (Mid-Rise)	221	232	Dwelling Units	1,053	86	20	66	90	55	35	
Strip Retail Plaza (<40k)	822	33	1,000 SF GLA	1,778	77	47	30	215	107	108	
		Trips Prop	osed Land Use	2,831	163	67	96	305	162	143	
In	ternal Cap	oture Prop	oosed Land Use	377	2	1	1	72	36	36	
	External Trips Proposed Land Use				161	66	95	233	126	107	
Low Rise Residential Condominium	231	247	Dwelling Units	1,448	166	42	124	193	112	81	
Shopping Center	820	24	1,000 SF	2,950	73	45	28	269	129	140	
Quality Restaurant	931	4	1,000 SF	360	4	3	1	30	20	10	
	Trips 2007 TIA					90	153	492	261	231	
Internal Capture 2007 TIA				476	24	9	15	49	26	23	
External Trips 2007 TIA					219	81	138	443	235	208	
		Total Nev	v External Trips	-1,828	-58	-15	-43	-210	-109	-101	

Compared to the 2007 TIA, the proposed development will generate 1,828 fewer external weekday trips with 58 fewer AM peak hour trips and 210 fewer PM peak hour trips.





#### 2012 Update

See **Table 7** for a comparison of the trip generation of the proposed development compared to the 2012 Update.

Table 7 – Trip Generation – Proposed Land Use vs 2012 Update

Land Use	ITE	ITE Qty Unit We			А٨	1 Peak Ho	our	PM Peak Hour		
Land OSC	Code	Lode Quy	Offic	Total	Total	In	Out	Total	ln	Out
Multifamily Housing (Mid-Rise)	221	232	Dwelling Units	1,053	86	20	66	90	55	35
Strip Retail Plaza (<40k)	822	33	1,000 SF GLA	1,778	77	47	30	215	107	108
		Trips Prop	oosed Land Use	2,831	163	67	96	305	162	143
In	ternal Cap	oture Prop	oosed Land Use	377	2	1	1	72	36	36
	External	Trips Prop	oosed Land Use	2,454	161	66	95	233	126	107
Apartments	220	420	Dwelling Units	2,794	215	43	172	261	170	91
External Trips 2012 Update				1,778	77	47	30	215	107	108
Total New External Trips				676	84	19	65	18	19	-1

Compared to the 2012 Update, the proposed development will generate 676 more external weekday trips with 84 more AM peak hour trips and 18 more PM peak hour trips.

#### SUMMARY

The proposed Indian School & Goldwater development is located on the northwest corner of Indian School Road and Goldwater Boulevard in Scottsdale, Arizona. The development will consist of a 232 multi-family DU apartment complex with 30,353 square feet of ground-floor retail and 2,307 square feet of flexible leasing space.

The proposed development will have a full-access driveway along 5<sup>th</sup> Avenue and a limited access driveway along Goldwater Boulevard.

#### **Trip Generation**

The proposed Indian School & Goldwater development is anticipated to generate 1,243 more external weekday trips, with 119 more AM peak hour trips and 150 more PM peak hour trips than the current land use of the site.

A previous Traffic Impact Analysis was conducted for the site in 2007 and was updated in 2012.

Compared to the 2012 Update, the proposed development will generate 676 more external weekday trips with 84 more AM peak hour trips and 18 more PM peak hour trips.

Compared to the original 2007 TIA, the proposed development will generate 1,828 fewer external weekday trips with 58 fewer AM peak hour trips and 210 fewer PM peak hour trips.





#### **Roadway Impacts**

As previously mentioned, Goldwater Boulevard had ADT of 18,900 vpd, between Camelback Road and Indian School Road in 2022. Assuming 25% of the new external daily trips generated by the proposed development utilized the limited access point along Goldwater Boulevard, the ADT will increase by 311 vpd or 1.64%

Indian School Road had ADT of 30,000 vpd, between 68th Street and Goldwater Boulevard. Assuming the remaining new external daily trips generated by the proposed development utilized the full access point along 5<sup>th</sup> Avenue via Indian School Road, the ADT of Indian School Road will increase by 932 vpd or 3.10%

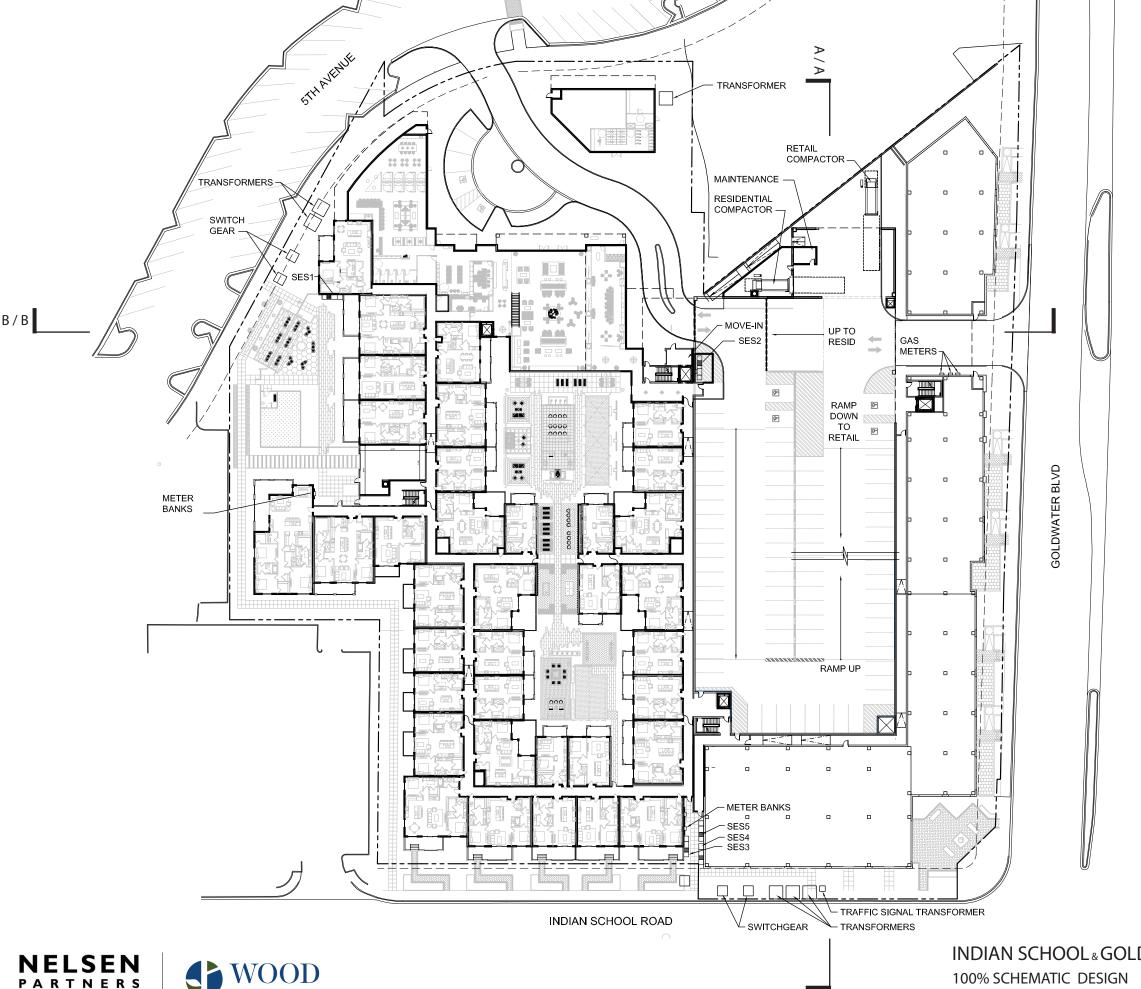
In conclusion, the traffic generated by the proposed Indian School & Goldwater development is anticipated to result in minimal traffic impacts to the existing roadway network and the surrounding area.





# ATTACHMENT A - PROPOSED SITE PLAN





PROJECT DATA

RESIDENTIAL (Levels 1-5) 232 Units

**RETAIL** 30,353 sf

2,307 sf **FLEX** 

Residential Parking Req'd per code

Studio (1.25) 32.5 spaces 150.8 spaces 1-Bedroom (1.3) 2-Bedroom (1.7) 141.1 spaces 3-Bedroom (1.9) 13.3 spaces Guest (1 per 6 unit) 38.6 spaces

Total Residential Req'd 377 spaces

Residential Parking Provided

Garage: 403 spaces **Entry Court:** 5 spaces **Total Residential Provided** 408 spaces Parking Ratio 1.76/unit

Retail Parking Reg'd per code

1/325 sf 94 spaces

Retail Parking Provided

Garage: 105 spaces

**Total Parking Provided** 513 spaces

Accessible Parking Req'd per code

2% of Provided 11 spaces

Accessbile Parking Provided 13 spaces

INDIAN SCHOOL&GOLDWATER

Site Level 1

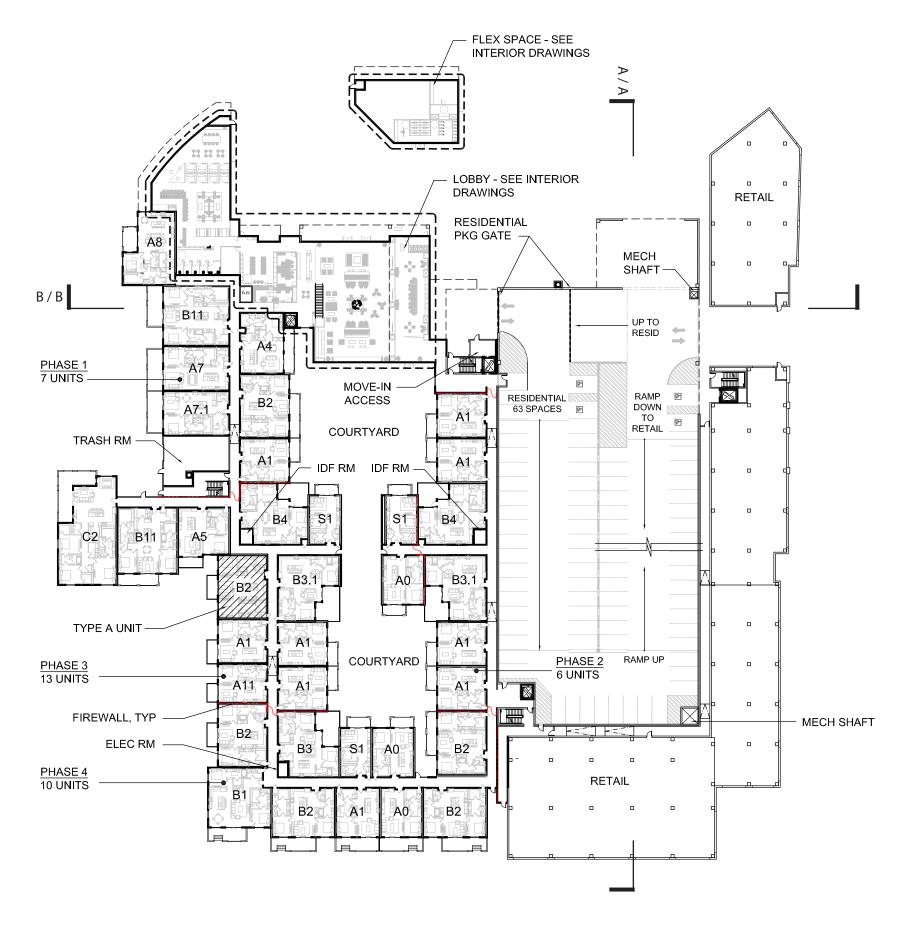
SCALE: 1" = 60'-0"

21

**WOOD** 

ARCHITECTS & PLANNERS

100% SCHEMATIC DESIGN







INDIAN SCHOOL&GOLDWATER
100% SCHEMATIC DESIGN

Level 1

SCALE: 1" = 60'-0"

Floor Plan Level 1







INDIAN SCHOOL & GOLDWATER 100% SCHEMATIC DESIGN

SCOTTSDALE, AZ | 23096 | NOVEMBER 22, 2024

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Floor Plan

Level 2







INDIAN SCHOOL & GOLDWATER 100% SCHEMATIC DESIGN

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Floor Plan

Level 3







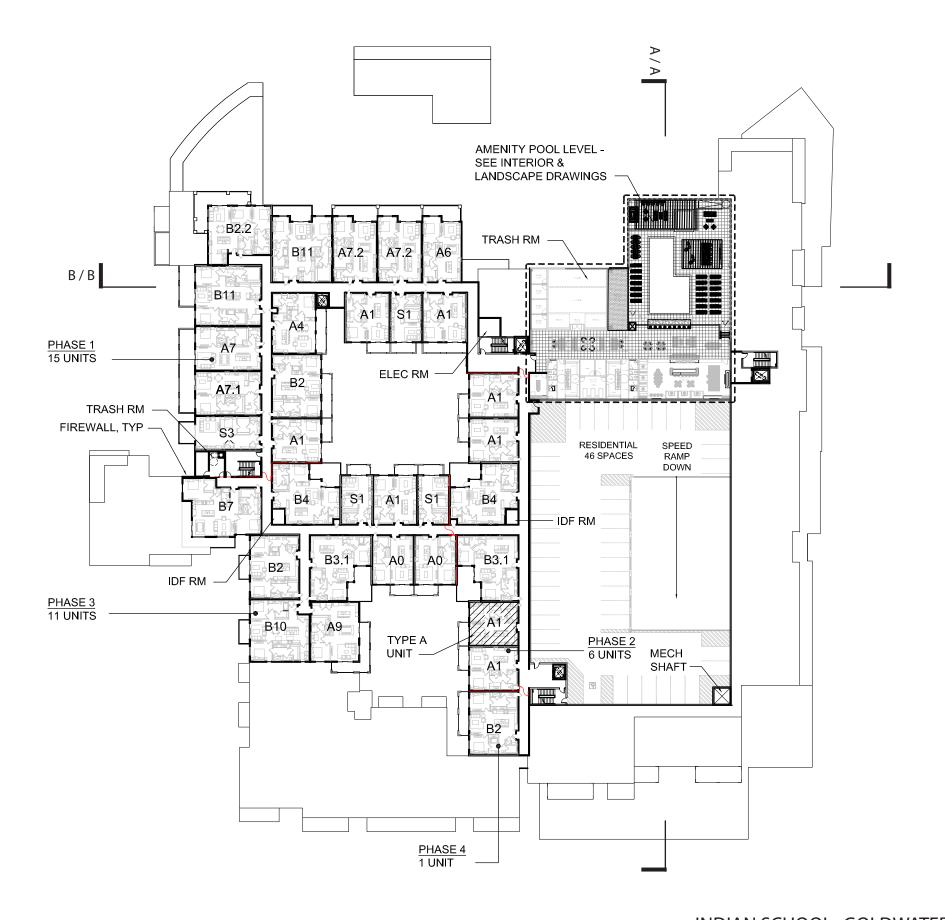
INDIAN SCHOOL&GOLDWATER
100% SCHEMATIC DESIGN

SCOTTSDALE, AZ | 23096 | NOVEMBER 22, 2024

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Floor Plan

Level 4



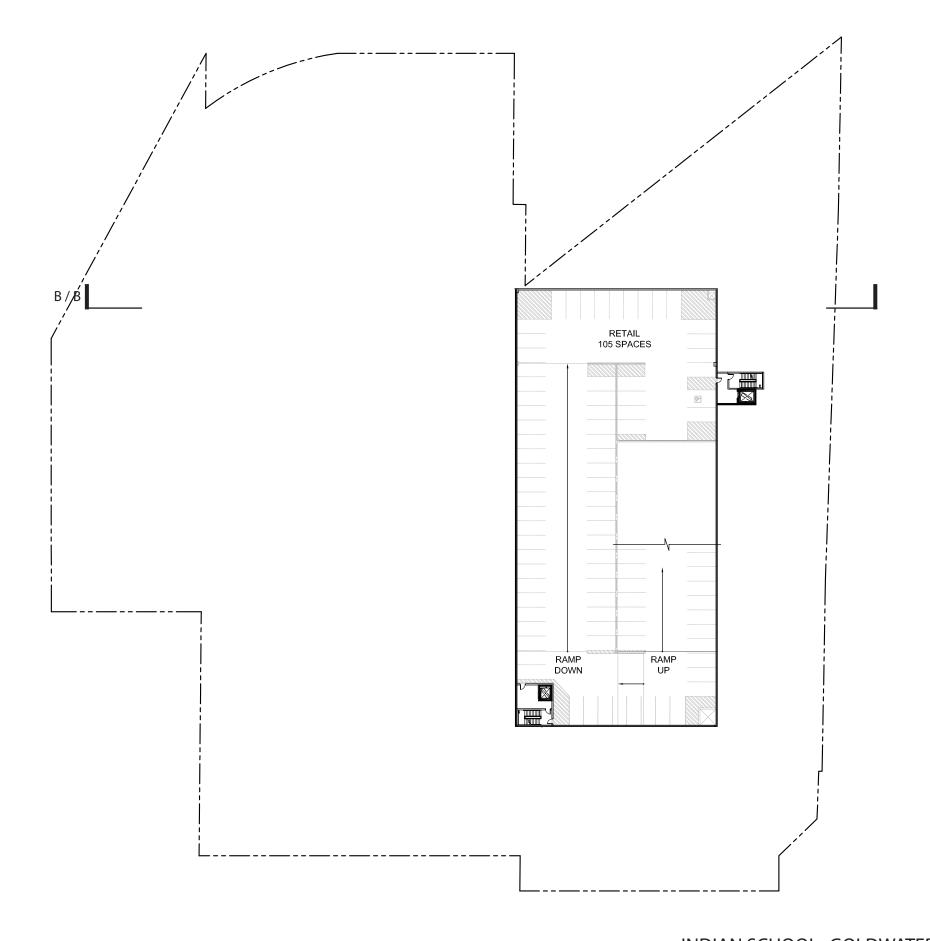




INDIAN SCHOOL & GOLDWATER 100% SCHEMATIC DESIGN

SCOTTSDALE, AZ | 23096 | NOVEMBER 22, 2024 © Nelsen Partners, Inc. 2024 Floor Plan

Level 5







INDIAN SCHOOL&GOLDWATER
100% SCHEMATIC DESIGN

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Level B1



# ATTACHMENT B – MARICOPA COUNTY ASSESSOR



### 173-48-050A

### **Commercial Parcel**

This is a Commercial parcel located at <u>6925 E 5TH AVE SCOTTSDALE 85251</u>. The current owner is OLD TOWN WATERFRONT LLC. It was last sold on 06/01/2023 for \$5,000,000. Its current year full cash value is \$2,453,634.

♥ MAPS
II PICTOMETRY
\$ VIEW/PAY TAX BILL
■ DEED
₾ OWNER
VALUATIONS
A ADDITIONAL INFO
1Z SKETCHES
∅ MAP FERRET
₽ PRINT DETAILS

# PROPERTY INFORMATION



### 6925 E 5TH AVE SCOTTSDALE 85251

#### MCR#

# **Description**

BEG 608.17F E & 205.01F N OF SW COR SE4 N 51D 48M E 13.83F S 38D 11M E 7.06F E 254.79F M/L N 349F TO S R/W LN WESTERN PARK DR TH SW TO POB EX BEG S 4 COR SEC 22 TH E ALG S LN SEC 878.17F TH N 557F TO POB TH S 28D 77M W 102.12F TO PT ON A 179.84F R CUR CON SELY R PT BRNG S 61D 32M E TH NELY ALG SD CUR THRU CEN ANG 23D 56M 75.15F TH N 33D TO PO B & ALSO EX DKT 10036/343

23D 56M 75.15F 1H N 33D 10 PO B & ALSO EX DK1 10036/343
Lat/Long
Lot Size
22,433 sq ft.
Lot #
High School District
SCOTTSDALE UNIFIED #48
Elementary School District

SCOTTSDALE UNIFIED SCHOOL DISTRICT
Local Jurisdiction
SCOTTSDALE
S/T/R ②
22 2N 4E
Market Area/Neighborhood
19/006
Subdivision (0 Parcels)

# OWNER INFORMATION



#### **OLD TOWN WATERFRONT LLC**

OLD TOWN WATERFRONT LLC
Mailing Address
2810 N CHURCH ST STE 77051, WILMINGTON, DE 19802  Deed Number
20230310717
<b>Last Deed Date</b> 06/14/2023
<b>Sale Date</b> 06/01/2023
Sale Price
\$5,000,000

# 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 <u>data sales</u>.

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 ②
\$2,453,634
Limited Value ②
\$1,652,259
Legal Class
1.12
Description
COMMERCIAL / OTHER R/P
Assessment Ratio
16%

A	esse	
ΔGG	esser	PV

\$264,362

### **Property Use Code**

1130

# **PU Description**

Convenience Mkt, Ret Strip, Supermkts

#### Tax Area Code

481400

# **Valuation Source**

Notice

# ADDITIONAL PROPERTY INFORMATION



#### Additional property data.

Description	Imp#	Occupancy	Rank	CCI	Age	Sq Ft.
Neighborhood Shopping Ctr	000101	412	2	С	51	3,810
Neighborhood Shopping Ctr	000201	412	2	С	51	720
Neighborhood Shopping Ctr	000301	412	2	С	51	1,635
Site Improvements	000401	163	2	D	51	1

### **Construction Year**

1995

# Weighted Construction Year

1974

# **Improvement Quality**

C(2)

Pool

No

# **Living Area**

Patio(s)

Covered: 0 | Uncovered: 0

#### **Exterior Wall Type**

**Block With Stucco** 

**Roof Type** 

**Bath Fixtures** 

0

**Garage Stalls** 

0

**Carport Stalls** 

0



Sketches that illustrate the external dimensions of a property.

127'

IMP
3810.0 sq. ft.

# MAP FERRET MAPS



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

- Parcel Maps (1)
- ► Book/Map Maps (3)

CAUTION! USERS SHOULD INDEPENDENTLY RESEARCH AND VERIFY INFORMATION ON THIS WEBSITE BEFORE RELYING ON IT.

The Assessor's Office has compiled information on this website that it uses to identify, classify, and value real and personal property. Please contact the Maricopa County S.T.A.R. Center at (602) 506-3406 if you believe any information is incomplete, out of date, or incorrect so that appropriate corrections can be addressed. Please note that a statutory process is also available to correct errors pursuant to Arizona Revised Statutes 42-16254.

The Assessor does not guarantee that any information provided on this website is accurate, complete, or current. In many instances, the Assessor has gathered information from independent sources and made it available on this site, and the original information may have contained errors and omissions. Errors and omissions may also have occurred in the process of gathering, interpreting, and reporting the information. Information on the website is not updated in "real time". In addition, users are cautioned that the process used on this site to illustrate the boundaries of the adjacent parcels is not always consistent with the recorded documents for such parcels. The parcel boundaries depicted on this site are for illustrative purposes only, and the exact relationship of adjacent parcels should be independently researched and verified. The information provided on this site is not the equivalent of a title report or a real estate survey. Users should independently research, investigate and verify all information before relying on it or in the preparation of legal documents.

By using this website, you acknowledge having read the above and waive any right you may have to claim against Maricopa County, its officers, employees, and contractors arising out of my reliance on or the use of the information provided on this website.

### 173-48-055E

### **Commercial Parcel**

This is a Commercial parcel located at 6935 E 5TH AVE SCOTTSDALE 85251. The current owner is OLD TOWN WATERFRONT LLC. It was last sold on 06/01/2023 for \$28,800,000. Its current year full cash value is \$7,867,602.

• MAPS
■ PICTOMETRY
\$ VIEW/PAY TAX BILL
<b>■</b> DEED
2 OWNER
VALUATIONS
A ADDITIONAL INFO
∅ MAP FERRET
PRINT DETAILS

# PROPERTY INFORMATION



#### 6935 E 5TH AVE SCOTTSDALE 85251

#### MCR#

### **Description**

COM AT SE COR SW4 SE4 SD SEC TH W 231.63F TH N 22 5.71F TO POB TH CON N 236.33F TH W 8F TH N 113.31 TO BEG CUR CON NWLY ALG SLY R/W OF WESTERN PARK DR TH SWLY ALG SD R/W LN THRU C/A 22D 52M 85.92F TH CONT SWLY 37D 16M 116.98F TH S 466.42F E 42F N 15D 21M W 25.61F TH N 0D 30M E 179.95F TH S 89D 30M E 79.99

S 32.5 TH S 89D 30M E 85F TO POB
Lat/Long
Lot Size
68,287 sq ft.
Lot #

### **High School District**

SCOTTSDALE UNIFIED #48

# **Elementary School District**

SCOTTSDALE UNIFIED SCHOOL DISTRICT
Local Jurisdiction
SCOTTSDALE
S/T/R ②
22 2N 4E
Market Area/Neighborhood
19/006
Subdivision (0 Parcels)

# OWNER INFORMATION



#### OLD TOWN WATERFRONT LLC

OLD TOWN WATERFRONT LLC
Mailing Address 2810 N CHURCH ST STE 77051, WILMINGTON, DE 19802
Deed Number
<u>20230310715</u>
Last Deed Date
06/14/2023
Sale Date
06/01/2023
Sale Price
\$28,800,000

# VALUATION INFORMATION



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Tax Year
2025
Full Cash Value ②
\$7,867,602
Limited Value ②
\$4,063,002
Legal Class
1.12
Description
COMMERCIAL / OTHER R/P
Assessment Ratio
16%

<b>Assessed</b>	I DV
Assessed	LPV

\$650,080

# **Property Use Code**

0510

# **PU Description**

Motels

#### **Tax Area Code**

481400

### **Valuation Source**

Notice

# ADDITIONAL PROPERTY INFORMATION



### Additional property data.

Description	lmp#	Occupancy	Rank	CCI	Age	Sq Ft.
Motel	000101	343	2	С	52	33,696
Clubhouse	000301	311	2	С	52	2,333
Site Improvements	000401	163	2	D	52	1

#### **Construction Year**

1973

# Weighted Construction Year

1973

# **Improvement Quality**

C (2)

Pool

No

# **Living Area**

# Patio(s)

Covered: 0 | Uncovered: 0

# **Exterior Wall Type**

**Block With Stucco** 

**Roof Type** 

#### **Bath Fixtures**

0

# **Garage Stalls**

0

# **Carport Stalls**

0

# MAP FERRET MAPS



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

- Parcel Maps (1)
- ► Book/Map Maps (3)

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#### 173-48-056A

### **Commercial Parcel**

This is a Commercial parcel located at <u>6940 E INDIAN SCHOOL RD SCOTTSDALE 85251</u>. The current owner is OLD TOWN WATERFRONT LLC. It was last sold on 06/01/2023 for \$750,000. Its current year full cash value is \$3,259,724.

• MAPS
□ PICTOMETRY
\$ VIEW/PAY TAX BILL
<b>■</b> DEED
2 OWNER
VALUATIONS
A ADDITIONAL INFO
<b>Z</b> SKETCHES
∅ MAP FERRET
₽ PRINT DETAILS

# PROPERTY INFORMATION



### 6940 E INDIAN SCHOOL RD SCOTTSDALE 85251

#### MCR#

#### Description

PT SW4 SE4 SD SEC BEG AT SE COR SW4 SE4 TH W 231. 63F TH N 55F TO POB TH N 170.71 TH N 89D 30M W 85 F N 32.50F TH N 89D 30M W 79.99F TH S 179.95F TH S 15D 21M 38SC SE 25.61F TH E 158F TO POB

1

**Lot Size** 

30,797 sq ft.

Lot#

**High School District** 

SCOTTSDALE UNIFIED #48

**Elementary School District** 

SCOTTSDALE UNIFIED SCHOOL DISTRICT

#### **Local Jurisdiction**

SCOTTSDALE

**S/T/R** ②

22 2N 4E

# Market Area/Neighborhood

19/006

Subdivision (0 Parcels)

# OWNER INFORMATION



#### **OLD TOWN WATERFRONT LLC**

### **Mailing Address**

2810 N CHURCH ST STE 77051, WILMINGTON, DE 19802

#### **Deed Number**

20230310714

#### **Last Deed Date**

06/14/2023

#### Sale Date

06/01/2023

#### Sale Price

\$750,000

# VALUATION INFORMATION



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Tax Year
----------

2025

### Full Cash Value ?

\$3,259,724

#### **Limited Value** ②

\$1,628,894

### **Legal Class**

1.12

### **Description**

COMMERCIAL / OTHER R/P

#### **Assessment Ratio**

16%

#### **Assessed LPV**

\$260,623
Property Use Code
2020
PU Description
Restaurants/Bars
Tax Area Code
481400
Valuation Source
Notice

# ADDITIONAL PROPERTY INFORMATION



Additional property data.

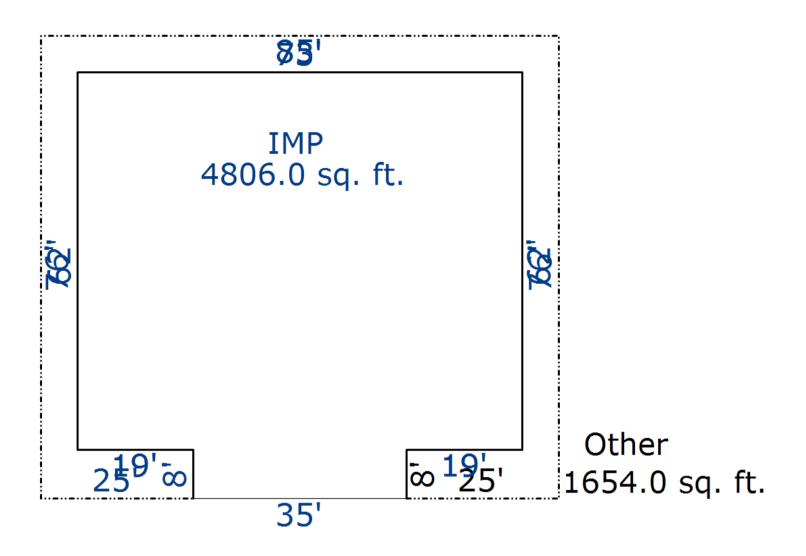
Description	Imp#	Occupancy	Rank	CCI	Age	Sq Ft.
Restaurant	000101	350	2	С	52	4,806
Site Improvements	000201	163	2	D	52	1

Construction Year
1983
Weighted Construction Year
1973
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

# BUILDING SKETCHES



Sketches that illustrate the external dimensions of a property.



# MAP FERRET MAPS



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#### 173-48-047D

### **Commercial Parcel**

This is a Commercial parcel located at <u>4154 N GOLDWATER BLVD SCOTTSDALE 85251</u>. The current owner is OLD TOWN WATERFRONT LLC. It is located in the WESTERN PARK PROPERTIES 4 subdivision, and MCR <u>6225</u>. It was last sold on 06/01/2023 for \$1,450,000. Its current year full cash value is \$4,427,900.

• MAPS
■ PICTOMETRY
\$ VIEW/PAY TAX BILL
<b>■</b> DEED
2 OWNER
VALUATIONS
A ADDITIONAL INFO
∅ MAP FERRET
PRINT DETAILS

# PROPERTY INFORMATION



#### 4154 N GOLDWATER BLVD SCOTTSDALE 85251

<b>MCR</b>	#
------------	---

6225

### **Description**

WESTERN PARK PROPERTIES UNIT FOUR MCR 62-25 TH PT TH N 51D 48M E 251.50F TO W R/W LN 70TH ST TH S ALG SD R/W LN 521.84F TO 12.21F RAD CUR CONC NWLY TH SWLY ALG CUR 18.97F TH W ALG N R/W LN INDIAN SCHOOL RD 179.96F TO POB EX S 200.1F AS MEAS ALG W LN & EX RD P/F 92-403713

Lat/Long
----------

**Lot Size** 

48,623 sq ft.

Lot#

**High School District** 

SCOTTSDALE UNIFIED #48

**Elementary School District** 

SCOTTSDALE UNIFIED SCHOOL DISTRICT
Local Jurisdiction
SCOTTSDALE
S/T/R ②
22 2N 4E
Market Area/Neighborhood
19/006
Subdivision (4 Parcels)
WESTERN PARK PROPERTIES 4

# OWNER INFORMATION



#### **OLD TOWN WATERFRONT LLC**

Mailing Address
2810 N CHURCH ST STE 77051, WILMINGTON, DE 19802
Deed Number
<u>20230310716</u>
Last Deed Date
06/14/2023
Sale Date
06/01/2023
Sale Price
\$1,450,000

# VALUATION INFORMATION



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Tax Year
2025
Full Cash Value ②
\$4,427,900
Limited Value ③
\$2,309,030
Legal Class
1.12
Description
COMMERCIAL / OTHER R/P
Assessment Ratio

16%
Assessed LPV
\$369,445
Property Use Code
1074
PU Description
Misc. Commercial
Tax Area Code
481400
Valuation Source
Notice

# ADDITIONAL PROPERTY INFORMATION



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

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► Book/Map Maps (3)

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## 173-48-047A

# **Commercial Parcel**

This is a Commercial parcel located at 4110 N GOLDWATER BLVD SCOTTSDALE 85251. The current owner is OLD TOWN WATERFRONT LLC. It is located in the WESTERN PARK PROPERTIES 4 subdivision, and MCR 6225. It was last sold on 06/01/2023 for \$1,450,000. Its current year full cash value is \$5,302,100.

• MAPS
II PICTOMETRY
\$ VIEW/PAY TAX BILL
■ DEED
₾ OWNER
• VALUATIONS
A ADDITIONAL INFO
124 SKETCHES
∅ MAP FERRET
PRINT DETAILS

# PROPERTY INFORMATION



4110 N GOLDWATER BLVD SCOTTSDALE 85251						
MCR#						
<u>6225</u>						
Description						
WESTERN PARK PROPERTIES UNIT FOUR MCR 62-25 S 200.1F OF SUB EX RD P/F 92-403713						
Lat/Long						
Lot Size						
36,365 sq ft.						
Lot#						
High School District						
SCOTTSDALE UNIFIED #48						
Elementary School District						
SCOTTSDALE UNIFIED SCHOOL DISTRICT						

Local Jurisdiction
SCOTTSDALE
S/T/R ③
22 2N 4E
Market Area/Neighborhood
19/006
Subdivision (4 Parcels)
WESTERN PARK PROPERTIES 4

# OWNER INFORMATION



## **OLD TOWN WATERFRONT LLC**

Mailing Address					
2810 N CHURCH ST STE 77051, WILMINGTON, DE 19802					
Deed Number					
<u>20230310716</u>					
Last Deed Date					
06/14/2023					
Sale Date					
06/01/2023					
Sale Price					
\$1,450,000					

# VALUATION INFORMATION



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Tax Year				
2025				
2023				
Full Cash Value ②				
\$5,302,100				
Limited Value ②				
\$2,251,874				
<i>\pi_{=j=0,j\infty}</i>				
Legal Class				
1.12				
Description				
COMMERCIAL / OTHER R/P				
Assessment Ratio				
16%				

Asse		JIF	1/
7666	GGEL		- W

\$360,300

# **Property Use Code**

1512

## **PU Description**

Office Buildings

### Tax Area Code

481400

### **Valuation Source**

Notice

# ADDITIONAL PROPERTY INFORMATION



## Additional property data.

Description	Imp#	Occupancy	Rank	CCI	Age	Sq Ft.
Office Building	000101	344	2	С	52	12,825
Office Building	000201	344	2	С	52	10,424
Office Building	000301	344	2	С	52	12,825
Site Improvements	000401	163	2	D	52	1

## **Construction Year**

1980

## Weighted Construction Year

1973

# **Improvement Quality**

C(2)

Pool

No

# **Living Area**

Patio(s)

Covered: 0 | Uncovered: 0

### **Exterior Wall Type**

**Block With Stucco** 

**Roof Type** 

**Bath Fixtures** 

0

**Garage Stalls** 

0

**Carport Stalls** 

0

## **Locational Characteristics**

Corner,MajInter

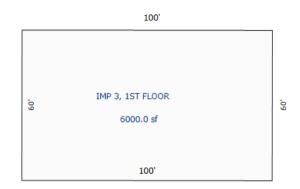
# **BUILDING SKETCHES**



Sketches that illustrate the external dimensions of a property.

IMP 3. 2ND FLOOR
6825.0 sf 

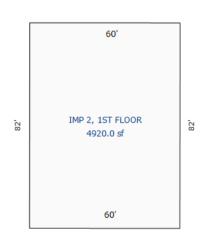
105'

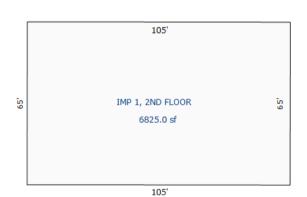


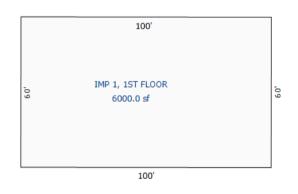


64'

IMP 2, 2ND FLOOR
5504.0 sf







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Book/Map Maps (3)

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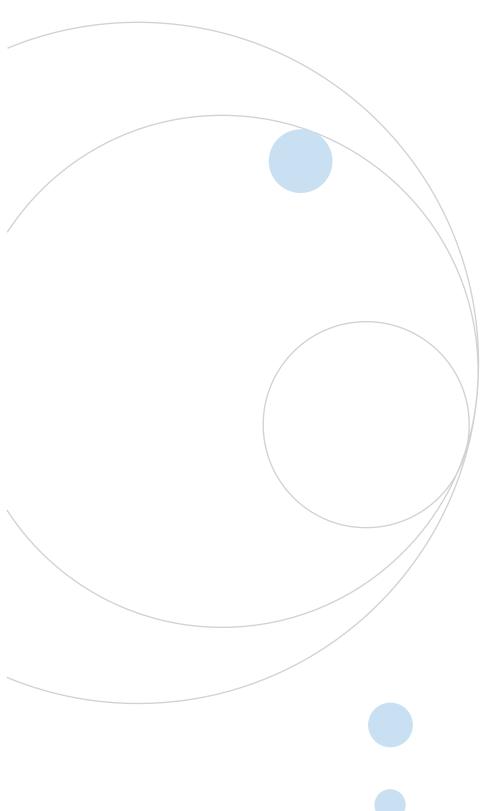
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# ATTACHMENT C - 2007 TIA





# Hanover Mixed-Use Development Final Submittal

Traffic Impact Study

NWC of Goldwater Road and Indian School Road Scottsdale, Arizona

December 2007 CivTech Project No. 07-180A

Prepared for:

City of Scottsdale 7447 E. Indian School Rd., Suite 205 Scottsdale, Arizona 85251 Fax (480) 312-4000

For submittal to:

**City of Scottsdale** 

Bv



8590 East Shea Boulevard, Suite 130 Scottsdale, AZ 85260 (480) 659 4250

# HANOVER MIXED-USE DEVELOPMENT TRAFFIC IMPACT ANALYSIS 1<sup>ST</sup> SUBMITTAL

# NWC of Goldwater Road and Indian School Road Scottsdale, Arizona

#### **Prepared for:**

City of Scottsdale 7447 E. Indian School Rd., Suite 205 Scottsdale, Arizona 85251 Fax: (480) 312-4000

## For submittal to:

City of Scottsdale

### Prepared by:

CivTech, Inc. 8590 East Shea Boulevard Suite 130 Scottsdale, Arizona 85260 (480) 659-4250

## **TABLE OF CONTENTS**

EXECUTIVE SUMMARY	1
INTRODUCTION	4
EXISTING CONDITIONS	6
SURROUNDING EXISTING LAND USE	6
EXISTING ROADWAY NETWORK	6
INTERSECTION CONFIGURATIONS	7
EXISTING TRAFFIC VOLUMES	8
EXISTING CAPACITY ANALYSIS	11
FUTURE ROADWAY IMPROVEMENTS	13
PROJECT SPECIFIC IMPROVEMENTS	13
REGIONAL IMPROVEMENTS	13
PROPOSED DEVELOPMENT	13
SITE ACCESS	13
TRIP GENERATION	15
PROPOSED DEVELOPMENT	15
TRIP DISTRIBUTION AND ASSIGNMENT	16
SITE TRIP DISTRIBUTION	16
FUTURE BACKGROUND TRAFFIC	16
TOTAL TRAFFIC	16
TRAFFIC AND IMPROVEMENT ANALYSIS	21
LEVEL OF SERVICE ANALYSIS	21
TRAFFIC SAFETY	22
QUEUING ANALYSIS	23
PROPOSED LANE CONFIGURATION	26
CONCLUSIONS AND RECOMMENDATIONS	28
LIST OF REFERENCES	
TECHNICAL APPENDICES	



## **LIST OF TABLES**

Table 1 – Level-of-Service Criteria for Signalized Intersections	11
Table 2 – Level-of-Service Criteria for Unsignalized Intersections	12
Table 3 – AM and PM Peak Hour Existing Level of Service Summary	12
Table 4 – Trip Generation Summary for Proposed Development	15
Table 5 – 2010 Future Level-of-Service Summary	21
Table 6 – 2010 Left Turn Lane Queue Length	23
Table 7 – 2010 Right Turn Lane Queue Length	24
LIST OF FIGURES	
Figure 1 – Vicinity Map	5
Figure 2 – Existing Lane Configuration and Traffic Control	9
Figure 3 – Existing Peak Hour Traffic Volumes	10
Figure 4 – Site Plan and Access	
Figure 5 – Trip Distribution	17
Figure 6 – Build-out Site Generated Traffic	18
Figure 7 – 2010 Background Traffic	19
Figure 8 – 2010 Total Traffic	20
Figure 9 – Future Lane Configuration and Stop Control	27



#### **EXECUTIVE SUMMARY**

The Hanover Mixed-Use development, located in the northwest corner of Goldwater Boulevard and Indian School Road in Scottsdale, Arizona consists of residential, retail and restaurant uses. A project buildout year of 2010 was analyzed as the opening year for the proposed Hanover Mixed-Use development. The proposed site will include approximately 23,800 square feet (SF) of retail/restaurant use and 247 dwelling units of residential condominiums.

The purpose of this study is to address traffic and transportation impacts of the proposed development on the surrounding streets and intersections. This traffic impact study was prepared for submittal to the City of Scottsdale.

- 1. To evaluate lane requirements on all existing roadways and at all existing intersections within the study area.
- 2. To determine future level of service for all proposed major intersections within the study area and recommend any capacity related improvements.
- 3. To determine necessary lane configurations at all major intersections within the proposed development to provide acceptable future levels of service.
- 4. To evaluate the need for future traffic control changes within the proposed development and at the major entry points.
- 5. To evaluate the need for auxiliary lanes at stop and signal controlled intersections.

The proposed site is planned to have three (3) access points with one (1) emergency drive; Access A and Access B are located along 5<sup>th</sup> Avenue, Access C and the planned emergency drive are located along Goldwater Boulevard. The proposed site plan shows that Access A and Access B are planned to serve the residential portion of the development, allowing full access in and out of the residential area only.

#### Conclusions & Recommendations

Capacity analyses were conducted on all proposed site access points and study intersections for the AM and PM peak hours. Proposed conditions for the buildout/opening year 2010 were analyzed to determine site generated impacts on the surrounding street network. The following conclusions and recommendations have been documented in this study:

- The proposed Hanover Mixed-Use development will generate approximately 4,480 daily external trips with 237 anticipated in the AM peak hour and 466 in the PM peak hour.
- ♦ The results of the existing conditions analysis revealed that all signalized study intersections currently operate at an overall acceptable level of service in both



the AM and PM peak hours. The analysis further revealed that all approaches at the study intersections, signalized and unsignalized, currently operate at acceptable levels of service (LOS D or better).

- ◆ The results of the 2010 horizon year analysis revealed that all signalized study intersections are expected to operate at an overall acceptable level of service in both the AM and PM peak hours by the buildout/opening year 2010. All signalized intersections analyzed have been optimized to operate at the highest level of service. The analysis further revealed that all movements at the study intersections and site accesses are expected to operate at an overall acceptable level of service (LOS D or better) upon opening of the development in 2010.
- ◆ The results of the 2010 horizon year analysis revealed that Accesses A and B along 5<sup>th</sup> Avenue are expected to operate with acceptable levels of service as full access points in both the AM and PM peak hours. The results also indicate that Access C along Goldwater Boulevard will operate with acceptable levels of service as a restricted right-in, right-out access point in both the AM and PM peak hours.
- ◆ Although the proposed Access C operates at acceptable levels of service as a restricted right-in, right-out access, it is recommended that Access C be shifted north of the proposed location to just north of the taper for the south bound left turn lane leading to the intersection of Goldwater Boulevard and Indian School Road. This shift would allow for left turns out of the site and provide better access for the site. As a ¾ access point (right-in, right-out, left-in), Access C is expected to operate with acceptable levels of service.
- ♦ Should full access be desired into the retail site, it is recommended that the emergency access, aligned with 3<sup>rd</sup> Avenue, provide full access to the retail site. With this access point providing full access to the site, Access C could essentially be eliminated. This would require extensive site plan revisions and is therefore a secondary recommendation.
- ◆ Based on the above criteria, low volumes on 5<sup>th</sup> Avenue and the assumed posted speed, exclusive left turn lanes into site Accesses A and B are not warranted per the City of Scottsdale's criteria.
- Based on the above City of Scottsdale criteria for driveways along major arterials, a right-turn deceleration lane is warranted, and is thus recommended, in the southbound approach to Access C from Goldwater Boulevard by horizon year 2010.
- It is recommended that existing left turn queue storage remain the same at all existing intersections. Under proposed future conditions recommended improvements to existing left and right turn queue storage lengths are not



required. All existing and proposed intersections operate efficiently under existing queue storage lengths and proposed conditions.

- ◆ As shown in **Table 6** a minimum storage of 50 feet is recommended for all northbound u-turns at the intersection of Goldwater Boulevard and 3<sup>rd</sup> Avenue.
- ◆ The queue storage calculations summarized in Table 7 indicate a minimum of 125 feet of storage is required for the southbound right deceleration lane at Access C and Goldwater Boulevard.
- ♦ It is recommended that both site driveways should be designed to meet the standards established by the City of Scottsdale in its *Design Standards and Policies Manual, 2006 Update.* The driveway types typically required on major arterial roadways, such as Indian School Road, are CH-2 and CH-3 which provide one ingress lane and two egress lanes. The driveway type on a minor collector roadway such as 5<sup>th</sup> Avenue is CH-1 which provides one ingress lane and one egress lane. Per the City of Scottsdale standards, the minimum length for a commercial or industrial driveway is 50 feet, measured from the entrance of the off-street parking area to the back of sidewalk or the back of curb if no sidewalk is provided.
- The developer should ensure that adequate sight distance is provided at the intersections to allow safe left and right turning movements from the development. Landscaping should be maintained at a maximum of three feet in height. To maintain sight distance, tree branches should be trimmed lower than seven feet and maintained to meet current acceptable landscape requirements while maintaining sight distance.



#### INTRODUCTION

The Hanover Mixed-Use development located in the northwest corner of Goldwater Boulevard and Indian School Road in Scottsdale, Arizona consists of residential, retail and restaurant uses. A project buildout year of 2010 was analyzed as the opening year for the proposed Hanover Mixed-Use development. The proposed site will include approximately 23,800 square feet (SF) of retail/restaurant use and 247 dwelling units of residential condominiums. The vicinity of the site is shown in **Figure 1**.

The City of Scottsdale has requested a traffic study for this development and CivTech Inc. has been retained by City of Scottsdale to perform the traffic impact analysis for the proposed development.

#### **Study Requirements**

The traffic impact analysis (TIA) has been performed in accordance with the requirements of Chapter 5, Section 5-1, "Traffic Impact Studies (TIMA)" of the July 2006 City of Scottsdale *Design Standards & Policies manual.* The trip generation by the proposed site yield 238 trips in the AM peak hour and 466 trips in the PM peak hour. Per the requirements, the proposed level of trip generation is characteristic of a Category 3 development. The TIA for this development requires a minimum study area of all site accesses, intersections, and connecting roadways within one mile of the project site. Analysis is required for AM and PM peak hour for opening year and for a horizon year 5 years after opening. For this analysis an opening year and buildout year of 2010 was analyzed.

#### Study Area

A Category 3 study typically includes the site accesses and other major intersections within a one-mile radius of the site. This study analyzes the following intersections:

- Goldwater Boulevard and Indian School Road
- ♦ 68th Street and Indian School Road
- ♦ Goldwater Boulevard and 5<sup>th</sup> Avenue
- ♦ Goldwater Boulevard and Camelback Road
- 5<sup>th</sup> Avenue and Indian School Road

#### **Horizon Year**

A Category 3 study requires an analysis of full build-out for the development. This analysis will analyze the site at full build out and occupancy by buildout year by horizon year 2010.

#### **Time Periods**

Standard AM and PM peak hours were chosen given the proposed uses at the developed site. The AM peak hour was assumed to occur between 7:00 AM and 9:00 AM while the PM peak hour was assumed to occur between 4:00 PM and 6:00 PM. Analysis performed for this study were completed for both the AM and PM peak hours.



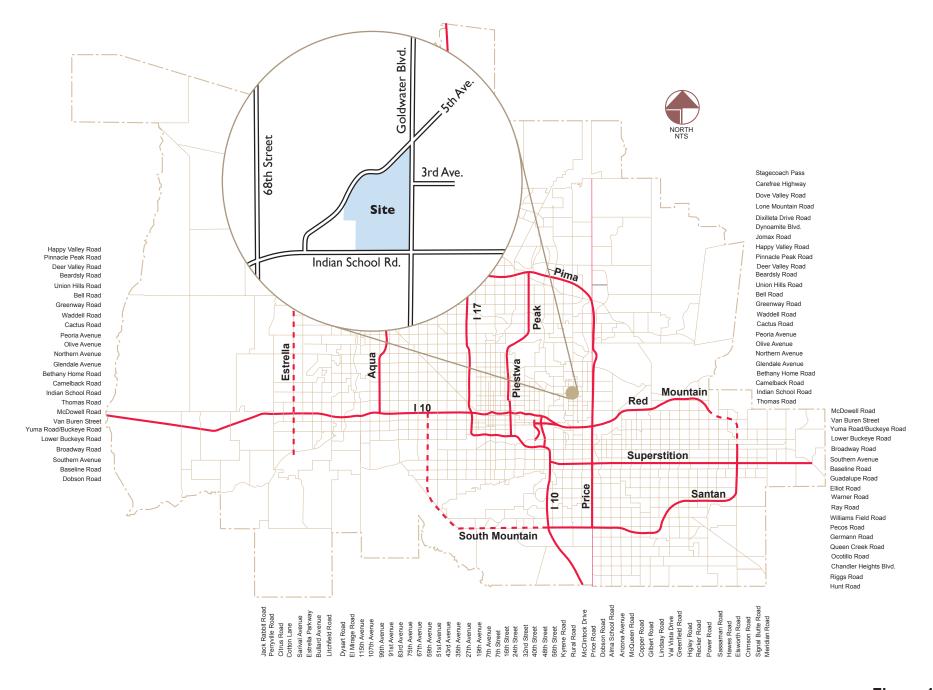


Figure 1: Vicinity Map

#### **EXISTING CONDITIONS**

#### SURROUNDING EXISTING LAND USE

The proposed Hanover Mixed-Use site is planned to occupy the northwest corner of Goldwater Boulevard and Indian School Road. Currently the proposed site is a mixed use development which includes a Ramada Inn Express Hotel with 92 guess rooms, a Village Inn Restaurant with 5,408 square feet of building area, and 40,564 square feet of office space. Surrounding the proposed site are small neighborhood businesses.

#### EXISTING ROADWAY NETWORK

The existing roadway network within the study area includes Indian School Road, Goldwater Boulevard, 5<sup>th</sup> Avenue, Camelback Road, 68<sup>th</sup> Street and 3<sup>rd</sup> Avenue.

Indian School Road is an east-west roadway that begins to the west in Buckeye, AZ at Jackrabbit Trail. Traveling eastbound, Indian School Road terminates at the Loop 101 (Pima Freeway) in Scottsdale, AZ. Indian School Road provides access to the Agua Fria Freeway (State Route Loop 101 to the west), Superstition Freeway (US 60), Piestewa Freeway (SR 51), and the Pima Freeway (State Route Loop 101 to the east). Per the City of Scottsdale's Street Classification Map, Indian School Road is a Major Arterial roadway. Indian School Road is currently posted at 35 miles per hour (mph) within the vicinity of the proposed site.

**Goldwater Boulevard** is a north-south roadway that begins to the south at Scottsdale Road. Traveling northbound Goldwater Boulevard becomes Highland Avenue where it then terminates at Scottsdale Road north of its origin. Goldwater Boulevard provides an alternate route around the Downtown Scottsdale area. Per the City of Scottsdale's Street Classification Map, Goldwater Boulevard is a Major Arterial roadway. Goldwater Boulevard currently is posted at 35 miles per hour (mph) within the vicinity of the proposed site.

**5**<sup>th</sup> **Avenue** is a northeast-southwest roadway that begins at Scottsdale Road and travels southwest terminating at Indian School Road. Per the City of Scottsdale's *Street Classification Map*, 5<sup>th</sup> Avenue is shown as a minor collector roadway. Fifth Avenue is posted at 25 miles per hour (mph) within the vicinity of the proposed site.

Camelback Road is an east-west roadway that begins to the west in Buckeye, AZ at Jackrabbit Trail. Traveling eastbound, Camelback Road terminates at the Loop 101 (Pima Freeway) in Scottsdale, AZ. Camelback Road provides access to the Agua Fria Freeway (State Route Loop 101 to the west), Superstition Freeway (US 60), Piestewa Freeway (SR 51), and the Pima Freeway (State Route Loop 101 to the east). Per the City of Scottsdale's Street Classification Map, Camelback Road is shown as a Major Arterial roadway. Camelback Road has a posted speed limit of 35 miles per hour (mph) within the vicinity of the proposed site.



**68**<sup>th</sup> **Street** is a north-south roadway that begins to the north in Scottsdale, AZ at Jackrabbit Road. Traveling southbound, 68<sup>th</sup> Street terminates into Curry Road in Scottsdale, AZ. Per the City of Scottsdale's *Street Classification Map*, 68<sup>th</sup> Street is a Major Arterial roadway. Currently, 68<sup>th</sup> Street has a posted speed limit of 35 miles per hour (mph) within the vicinity of the proposed site.

**3<sup>rd</sup> Avenue** is an east-west roadway that begins to the east at 74<sup>th</sup> Street and travels westbound terminating into Goldwater Boulevard in Scottsdale, AZ. Per the City of Scottsdale's *Street Classification Map*, 3<sup>rd</sup> Avenue is depicted as a minor collector roadway. Currently, 3<sup>rd</sup> Avenue is posted at 25 miles per hour (mph) within the vicinity of the proposed site.

#### INTERSECTION CONFIGURATIONS

The intersection of *Goldwater Boulevard and Camelback Road* operates under signalized conditions. The northbound approach consists of dual left turn lanes, two (2) though lanes and a dedicated right turn lane. The southbound approach consist of dual left turn lanes, three (3) through lanes and a dedicated right turn lane. The eastbound approach consists of an exclusive left turn lane, three (3) through lanes and a dedicated right turn lane. The westbound approach consists of an exclusive left turn lane, two (2) through lanes and a shared through-right lane. On the northwest, northeast and southeast corners of the intersection are structures included as part of the Fashion Square Shopping Mall. The southwest corner contains office buildings.

The intersection of *Goldwater Boulevard and 5<sup>th</sup> Avenue* operates under signalized conditions. The northbound approach consists of an exclusive left turn lane, one (1) though lane and a shared through-right lane. The southbound approach consists of an exclusive left turn lane, two (2) through lanes and a shared though-right lane. Both the east and west approaches have a dedicated left lane, through lane, and right turn lane. General offices and small neighborhood businesses surround all four corners of the intersection. Located approximately 350 feet north of the intersection is the Arizona Canal.

The intersection of *Goldwater Boulevard and Indian School Road* operates under signalized conditions. The northbound approach consists of an exclusive left turn lane, one (1) though lane and a shared through-right lane. The southbound approach consist of an exclusive left turn lane, two (2) through lanes and a shared through-right lane. The eastbound approach consist of dual left turn lanes, two (2) through lanes and a dedicated right turn lane. The westbound approach consists of dual left turn lanes, one (1) through lane and a shared through-right lane. General offices and small neighborhood businesses surround all four corners of the intersection.

The intersection of 5<sup>th</sup> Avenue and Indian School Road operates under unsignalized conditions with stop control on the southbound approach. The southbound approach consists of a signal shared left-right lane. The eastbound approach consists of an exclusive left turn lane and three (3) through lanes. The westbound approach consists of



two (2) through lanes and a shared through-right lane. Small neighborhood businesses are located on all corners of the intersection.

The intersection of **68**<sup>th</sup> **Street and Indian School Road** operates under signalized conditions. The northbound approach consists of an exclusive left turn lane, two (2) through lanes and a dedicated right turn lane. The southbound approach consist of an exclusive left turn lane, one (1) through lane and a shared through-right lane. The eastbound and westbound approaches both consist of an exclusive left turn lane, three (3) through lanes and a dedicated right turn lane. General offices and small neighborhood businesses surround the intersection. The Arizona Canal is located in the northwest and northeast corners of the intersection, residential signal family homes are located on the southwest corner and a hotel in the southeast corner of the intersection.

Figure 2 depicts the existing stop control and lane geometry within the project area.

#### **EXISTING TRAFFIC VOLUMES**

Traffic Research and Analysis, Inc. (TRA) conducted turning movement counts at all existing study intersections on June 7, 2007. The counts were conducted on a Thursday from 7:00 AM to 9:00 AM and again from 4:00 PM to 6:00 PM. The existing hourly traffic counts used for the time periods in this study are shown on **Figure 3**, and the data sheets for the recorded volumes are provided in **Appendix B**.



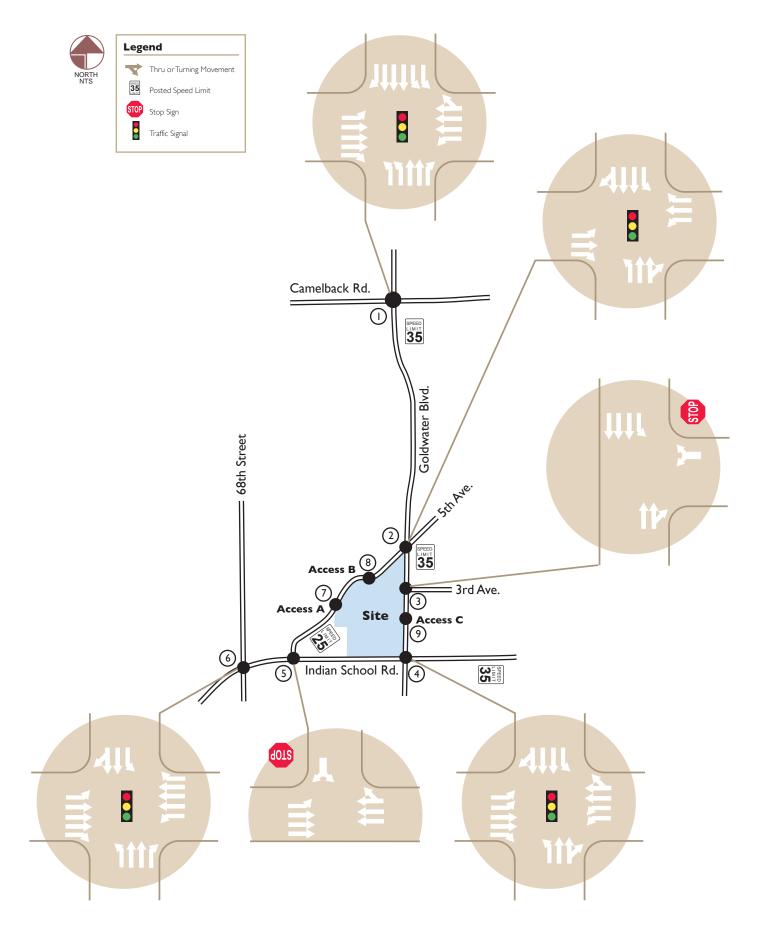
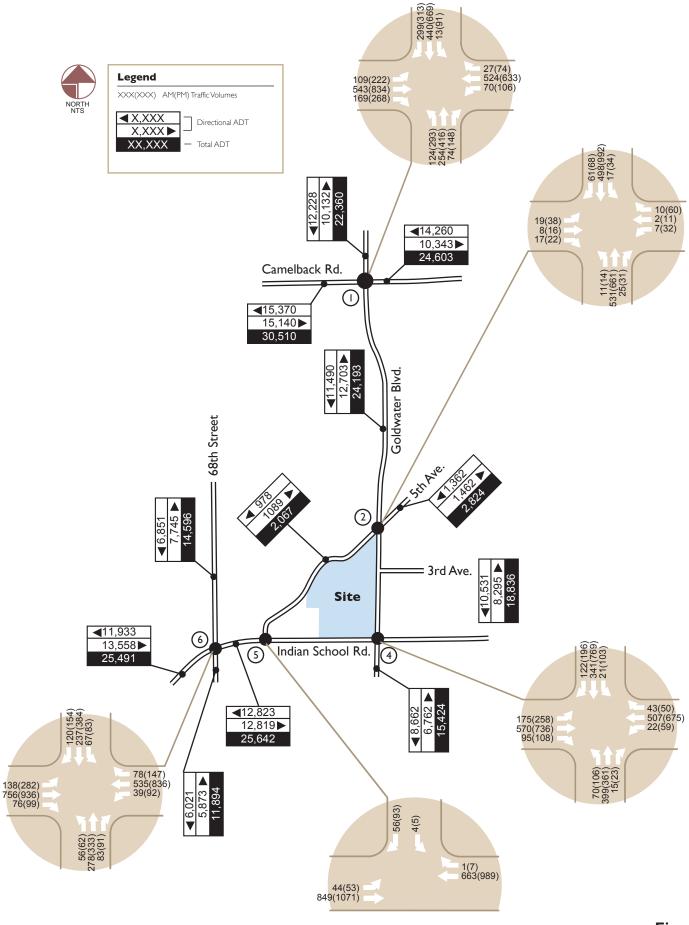


Figure 2: Existing Lane Configuration and Stop Controls



**Figure 3:** Existing Traffic Volumes

#### **EXISTING CAPACITY ANALYSIS**

Peak hour capacity analyses have been conducted for the study intersections based on existing conditions and traffic volumes. All intersections have been analyzed using the methodologies presented in the Highway Capacity Manual (HCM), Special Report 209, Updated 2000 and using TRAFFIX Software version 7.7 under the HCM 2000 methodology. HCM guidelines provide methods of determining an overall intersection level of service and levels of service for each individual movement at signalized and all-way stop controlled-intersections. The Traffix software calculates overall intersection levels of service for intersections with these controls. For unsignalized intersections with oneor two-way stop control, HCM 2000, which designates both as "TWSC" (two-way stop controlled) intersections, indicates that the "Level of service (LOS) for a TWSC intersection is determined by the computed or measured control delay and is defined for each minor movement [and that] LOS is not defined for the intersection as a whole." At TWSC intersections, Traffix software calculates overall approach levels of service for stop-controlled approaches. Levels of service are determined for each stop-controlled movement and for the left turn movement from uncontrolled approaches. This reflects the vehicles that are delayed as drivers wait for gaps in opposing traffic to safely complete the movement. Thus, overall intersection LOS's are typically reported for signalized and all-way stop-controlled intersection and the overall "worst case" approach LOS is reported for a TWSC intersection.

The concept of level-of-service (LOS) uses qualitative measures that characterize operational conditions within the traffic stream. The individual levels-of-service are described by factors that include speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations A through F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions.

**Table 1** and **Table 2** list the level of service criteria for signalized and unsignalized intersections respectively.

Table 1 – Level-of-Service Criteria for Signalized Intersections

Level-of-Service	Control Delay (sec/veh)
A	≤ 10
В	> 10-20
Ĉ	> 20-35
D	> 35-55
E	> 55-80
F	> 80

Source: Exhibit 16-2, Highway Capacity Manual 2000



Table 2 – Level-of-Service Criteria for Unsignalized Intersections

Level-of-Service	Control Delay (sec/veh)
Α	≤ 10
В	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

Source: Exhibit 17-2, Highway Capacity Manual 2000

Results of the existing level-of-service analyses are shown in **Table 3** for the AM and PM peak hour periods. The output sheets have been included in **Appendix C**.

Table 3 – AM and PM Peak Hour Existing Level of Service Summary

	Table 3 – Alvi and	Stop		Existing Peak Hour Level-of-Service		
ID	Study Intersection	Control	Movement -	AM Peak Hour	PM Peak Hour	
Goldwater Blvd. &			NB Approach	В	С	
	Coldwater Plyd 9	Signal	SB Approach	В	С	
	Camelback Rd.		EB Approach	D	С	
	Camelback Ru.		WB Approach	D	D	
			Intersection	C	С	
			NB Approach	D	D	
			SB Approach	D	D	
2	Goldwater Blvd. & 5 <sup>th</sup> Ave	Signal	EB Approach	Α	Α	
			WB Approach	Α	Α	
			Intersection	Α	Α	
		Signal	NB Approach	В	С	
	Coldwater Blad 9 Indian		SB Approach	В	С	
4	Goldwater Blvd. & Indian School Rd.		EB Approach	В	В	
	School Ru.		WB Approach	D	D	
				Intersection	В	С
			NB Approach	-	-	
			SB Approach	В	В	
5	5 <sup>th</sup> Ave & Indian School Rd. 1-way	1-way stop	EB Approach	Α	В	
			WB Approach	Α	Α	
			Intersection	Α	Α	
			NB Approach	С	С	
	68 <sup>th</sup> Street & Indian School	Signal	SB Approach	С	С	
6	6 Rd.		EB Approach	С	С	
			WB Approach	С	D	
				Intersection	С	С

The results summarized in **Table 3** revealed that all signalized study intersections currently operate at an overall acceptable level of service in both the AM and PM peak hours under existing lane configurations and stop control. The analysis further revealed that all approaches at the study intersections, signalized and unsignalized, currently operate at acceptable levels of service (LOS D or better).



#### **FUTURE ROADWAY IMPROVEMENTS**

#### PROJECT SPECIFIC IMPROVEMENTS

CivTech anticipates that the only project specific external ("off-site") roadway improvements that could result from this analysis of the proposed Hanover Mixed-Use development would be capacity improvements (auxiliary lanes, for example) at the site accesses.

#### REGIONAL IMPROVEMENTS

There are currently no plans to widen the roadway cross sections within the vicinity of the site.

#### PROPOSED DEVELOPMENT

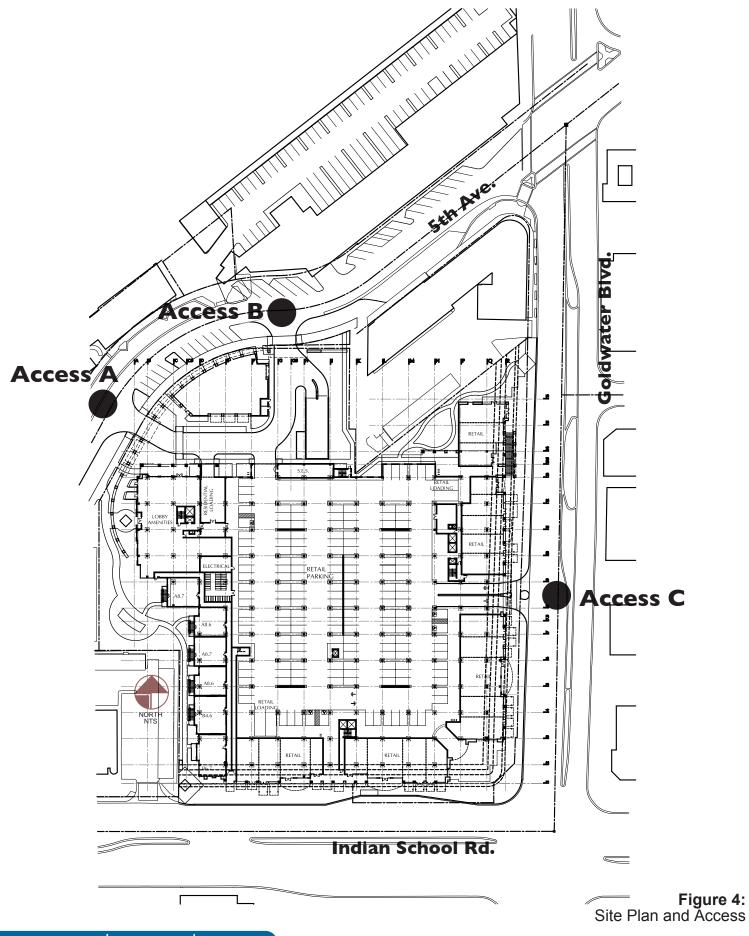
The proposed Hanover Mixed-Use site is planned for development in the northwest corner of the Goldwater Boulevard and Indian School Road in Scottsdale, Arizona. The layout of the site is illustrated in **Figure 4**. The proposed development is anticipated to have a buildout year/opening year of 2010. The proposed site will include approximately 23,800 square feet (SF) of retail/restaurant use and 247 dwelling units of residential condominiums.

#### SITE ACCESS

As shown in the Figure 4 the proposed site plan includes a total of four (4) access points, these access points are described below.

- ◆ <u>Access A</u> and <u>Access B</u> are both full access drives located along 5<sup>th</sup> Avenue. These drives are restricted to residential and office use only. Residential vehicles are anticipated use Access A and office vehicles are anticipated to use Access B, respectively.
- ♠ <u>Access C</u> is a restricted right-in, right-out driveway located on Goldwater Boulevard. This driveway is to serve all proposed retail on the planned parcel. Although Access C is restricted vehicles could negotiate u-turns at intersections north and south of the proposed Access C to maneuver in and out of the retail parcel.





#### TRIP GENERATION

#### PROPOSED DEVELOPMENT

Generated trips were estimated utilizing the data given in the *Institute of Transportation Engineers (ITE) Trip Generation, 7<sup>th</sup> Edition* report and the methodology discussed in the *ITE Trip Generation Handbook, 2<sup>nd</sup> Edition.* The *ITE Trip Generation* report contains data collected by various transportation professionals for a wide range of different land uses. The data are summarized in the report and average rates and equations have been established that correlate the relationship between an independent variable that describes the development size and generated trips for each categorized land use. The report provides information for daily and peak hour trips.

According to data presented by ITE in the *Trip Generation Handbook*, trips attracted to commercial and retail land uses are often shared. This means that a single trip (vehicle) to the Hanover Mixed-Use development may visit other attractions within the site during the same visit. This is especially true for sites with multiple tenants and land uses. This has the effect of reducing the off-site trip generating potential of the proposed site.

To obtain a more conservative estimate of the number of external trips generated by the site, interaction between the uses was not considered.

Detailed trip generation worksheets are included in **Appendix D** to this report.

Table 4 – Trip Generation Summary for Proposed Development

	ITE			_	AM Distrib	oution	PM Distr	ribution
Proposed Use	LUC	ITE Land Use Name	Units	Total	In	Out	In	Out
Low Rise Residential	231	Low Rise Residential Condominium/Townhouse	Dwelling Units	247	25%	75%	58%	42%
Shopping Center	820	Shopping Center	1,000 SF	23.800	61%	39%	48%	52%
Quality Restaurant	931	Quality Restaurant	1,000 SF	4.000	75%	25%	67%	33%

**TOTALS** 

	ADT		AM Peak Hour			PM Peak Hour				
Proposed Use	Avg Rate	Total	Avg Rate	Total	In	Out	Avg Rate	Total	In	Out
Low Rise Residential	5.86	1,448	0.67	166	42	124	0.78	193	112	81
Shopping Center	112.24	2,672	2.78	67	41	26	10.20	243	117	126
Quality Restaurant	89.95	360	0.81	4	3	3 1	7.49	30	20	10
TOTALS		4,480		237	86	151		466	249	217

<u>Notes</u>: 1. This trip generation calculation is provided for the entire development without applied volume reductions taken as part of this study.



#### TRIP DISTRIBUTION AND ASSIGNMENT

#### SITE TRIP DISTRIBUTION

It is expected that the majority of the trips generated by the development will be home-based, that is, made by residents within a given radius of the development site. In this case, a population distribution of 5 miles was assumed for the commercial land uses.

Population projection data available from the Maricopa Association of Governments (MAG) for 2010 were used to approximate the directional distribution of arriving and departing commercial site traffic. The trips were distributed to the cardinal directions based on the calculated directional distribution percentages and adjusted to the roadway network. A minor percentage of the trips were assigned to each of the access roads into surrounding residential communities as it would be expected that these communities would be in the market area of the proposed development. Trip distribution percentages are depicted in **Figure 5**. Trip distribution calculations can be found in **Appendix E**.

Site generated traffic as shown in **Figure 6** was distributed based on the anticipated percentages described above.

#### **FUTURE BACKGROUND TRAFFIC**

Historical daily traffic volumes were taken from the City of Scottsdale traffic count website to estimate an average annual growth rate. Daily segment traffic volumes were taken within the vicinity of the proposed site, along Goldwater Boulevard, in 2022 there was an estimated 21,600 ADT and in 2004 an estimated 22,500 ADT on Goldwater Boulevard. Based on the 2002 and 2004 AADT on Goldwater Boulevard an annual growth rate was calculated to be 2.1 percent. A 2.1 percent annual growth rate was applied to the volumes at the study intersections to obtain the future background traffic volumes. Growth rate calculations and Scottsdale historical counts can be found in **Appendix F**.

Projected background traffic volumes are shown in **Figure 7** for the buildout/opening year of 2010 respectively.

#### **TOTAL TRAFFIC**

Total traffic was determined by adding the site generated traffic to the projected background traffic for horizon year 2010. Total AM and PM peak hour traffic for the horizon year 2010 is shown in **Figure 8.** 



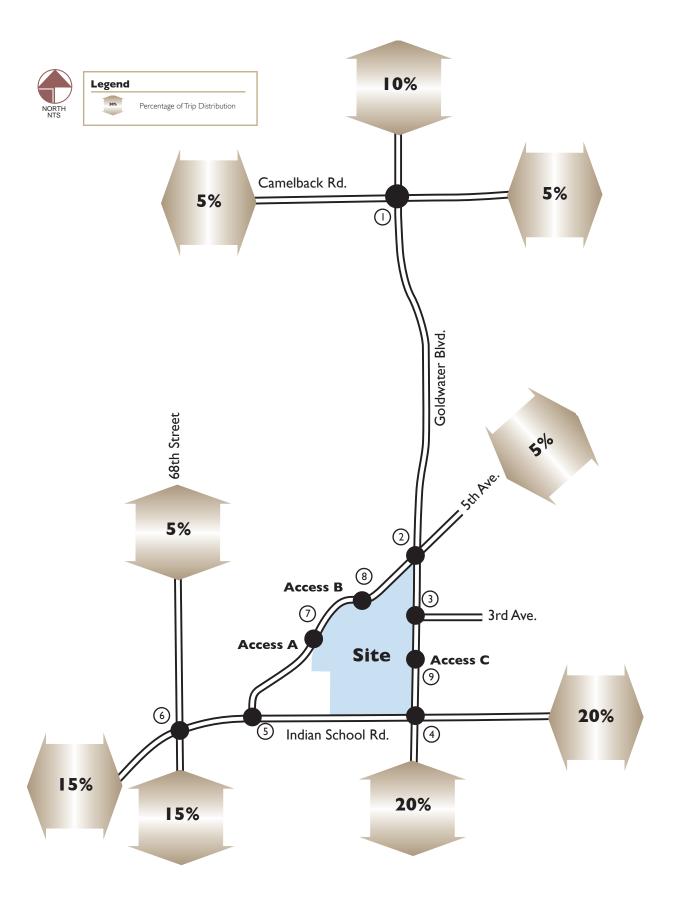


Figure 5: Trip Distribution

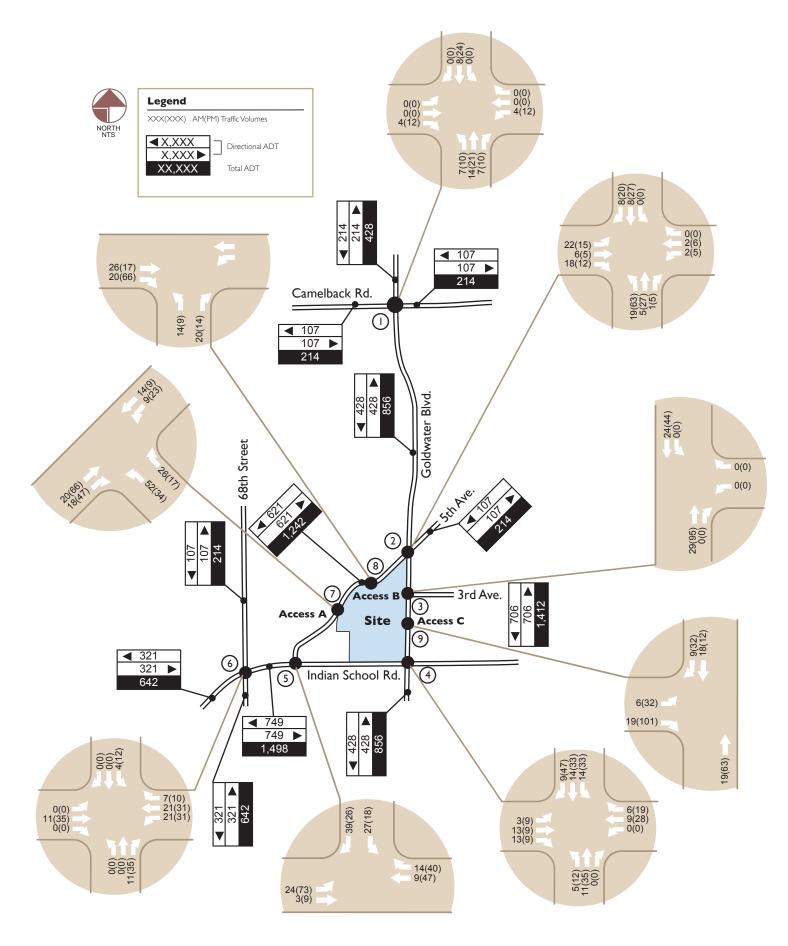


Figure 6: Buildout Site Generated Traffic Volumes

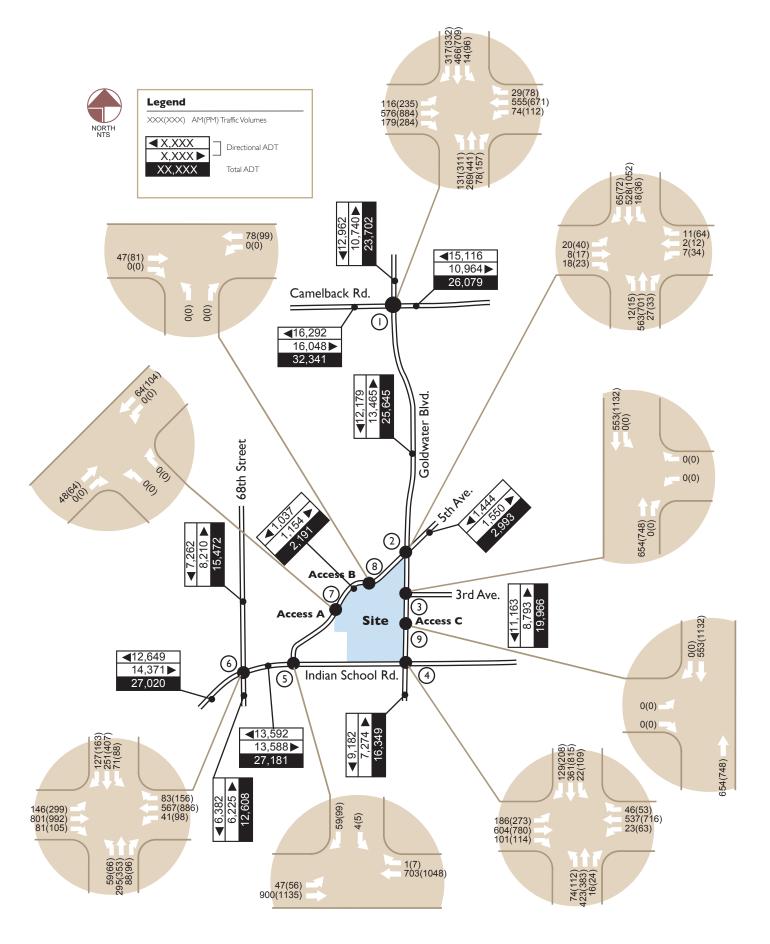
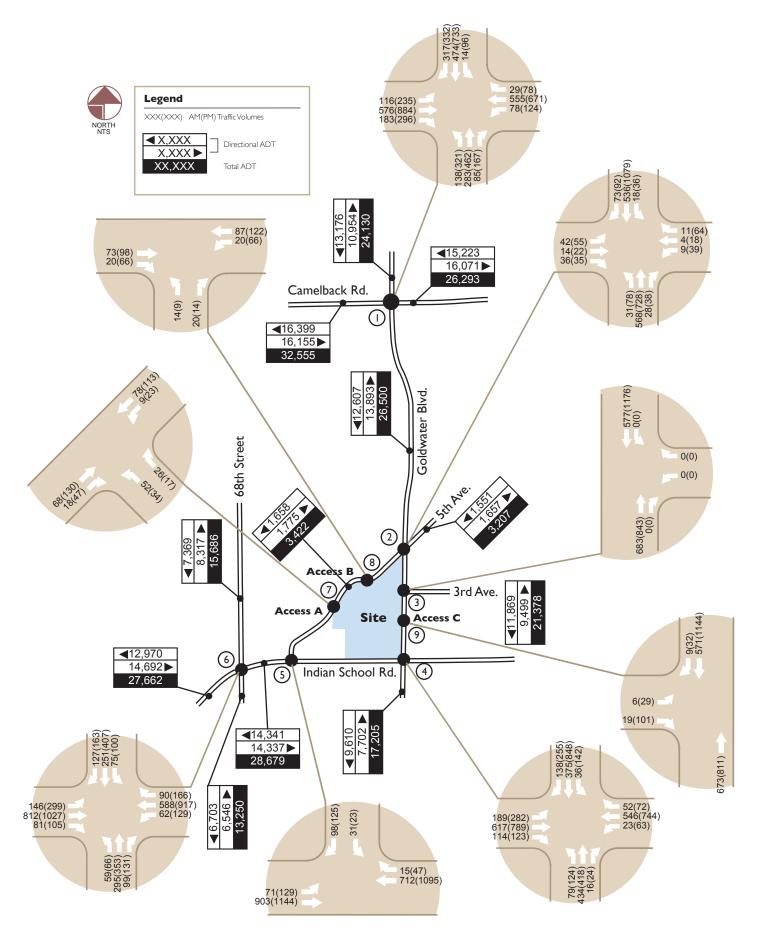


Figure 7: 2010 Background Traffic Volumes





**Figure 8:** 2010 Total Traffic Volumes

#### TRAFFIC AND IMPROVEMENT ANALYSIS

#### LEVEL OF SERVICE ANALYSIS

The capacity analysis of future conditions was performed using the method described previously in this report under "Existing Capacity Analysis."

Results of the future level-of-service analyses are shown in **Table 5** for the 2010 buildout/opening year. The output sheets for year 2010 have been included in **Appendix G**.

Table 5 – 2010 Future Level-of-Service Summary

	1001		10 1 41410 20	Weekday Peak Hour Level-of-Service					
ID	Study Intersection	Stop	Movement	AM		PM			
	,	Control		Background	Total	Background	Total		
			NB Approach	В	В	В	В		
	Goldwater Blvd. &		SB Approach	В	В	С	С		
1 '	Camelback Rd.	Signal	EB Approach	D	D	С	С		
	Camerback Ru.		WB Approach	D	D	D	D		
			Intersection	С	С	С	С		
			NB Approach	D	D	D	D		
	Goldwater Blvd. & 5 <sup>th</sup>		SB Approach	D	D	D	D		
2	Ave	Signal	EB Approach	Α	Α	Α	Α		
	Ave		WB Approach	Α	Α	Α	Α		
			Intersection	Α	Α	Α	Α		
			NB Approach		Α		Α		
3	Goldwater Blvd. & 3 <sup>rd</sup> Ave	1-way	SB Approach	N/A	Α	– N/A	Α		
3		Stop	WB Approach	IN/A —	С	— IN/A	С		
			Intersection	_	Α		Α		
	Goldwater Blvd. & Indian School Rd.	Signal	NB Approach	В	В	С	С		
			SB Approach	Α	Α	В	В		
4			EB Approach	В	В	В	В		
			WB Approach	D	D	D	D		
			Intersection	В	В	В	С		
			SB Approach	В	С	В	С		
5	5 <sup>th</sup> Ave & Indian	1-way	EB Approach	A	Α	В	Α		
,	School Rd.	Stop	WB Approach	Α	Α	Α	Α		
			Intersection	Α	Α	Α	Α		
			NB Approach	С	С	С	С		
	68 <sup>th</sup> Street & Indian		SB Approach	С	С	С	С		
6	School Rd.	Signal	EB Approach	С	С	С	С		
	ochool ita.		WB Approach	С	D	D	С		
			Intersection	С	С	С	С		
			NB Approach		Α		A		
7	Access A & 5 <sup>th</sup> Ave	1-way	SB Approach	- N/A -	Α	– N/A	A		
•	Access A & 5 Ave	Stop	WB Approach		Α	_	Α		
			Intersection		Α		Α		
			NB Approach		Α		Α		
8	Access B & 5 <sup>th</sup> Ave	1-way	EB Approach	N/A -	Α	– N/A	Α		
0	Access D & J Ave	Stop	WB Approach	IN/A -	Α	– IN/A	Α		
			Intersection		Α		Α		
				·					



		•	Intersection		A		A
9	Blvd.	Stop	EB Approach	IN/A	Α	IN/A	Α
۵	Access C & Goldwater	1-way	SB Approach	N/A	Α	N/A	Α
			NB Approach		Α		Α

The results summarized in **Table 5** reveal that all signalized study the intersections are expected operate at an overall acceptable level of service in both AM and PM peak hours by the buildout/opening year 2010. All signalized intersections for this analysis have been optimized to operate at the highest level of service. The analysis further revealed that all movements at the study intersections and site accesses are expected to operate at an overall acceptable level of service (LOS D or better) upon opening of the development in 2010.

#### TRAFFIC SAFETY

#### **Auxiliary Speed-Change Lanes**

<u>Left-turn Lanes</u>. According to AASHTO guidelines, a separate left turn lane should be provided when the left turn volumes exceed 100 vehicles per hour at an unsignalized intersection or if a signal is provided, regardless of traffic volumes. Left turn lanes are required at all street intersections along arterials and major collectors according to the standards established by the City of Scottsdale in its *Design Standards and Policies Manual, 2006 Update*. Based on the above criteria, low volumes on 5<sup>th</sup> Avenue and the posted speed of 25 mph, exclusive left turn lanes into site Access A and B are not warranted per the City of Scottsdale's criteria.

<u>Right-turn Lanes</u>. According to AASHTO guidelines at the intersection of two public roadways, a separate right turn lane should be provided when the right-turn volumes exceed 300 vehicles per hour. Right-turn deceleration lanes are often recommended on driveways where right-turning vehicles create delays or safety problems for other traffic movements. According to the *City of Scottsdale's Design Standards and Policies Manual, 2006 Update*, deceleration lanes are required at all new driveways on major arterials and at new commercial/retail driveways on minor arterials. Deceleration lanes for driveways may also be required on collector streets and for non-commercial/retail driveways on minor arterials. A right turn lane is considered warranted on a street classified as a minor arterial or collector when all three of the following criteria are met or exceeded:

- ♦ At least 5,000 vehicles per day are expected to use the street.
- ◆ The 85<sup>th</sup> percentile traffic speed on the street is at least 35 mph; or 45 mph for a two lane roadway.
- At least 30 vehicles will make right turns into the driveway during a one-hour period.

Based on the above City of Scottsdale criteria for driveways along major arterials, a right-turn deceleration lane is warranted, and is thus recommended, in the southbound approach to Access C from Goldwater Boulevard.



#### **QUEUING ANALYSIS**

<u>Left-turn Storage Analysis</u>. A queuing analysis for left turns was performed for intersection turn lanes under stop or signal control adjacent to the development site, according to the methodology documented in AASHTO's *A Policy on Geometric Design of Highways and Streets*. The intersections were analyzed to determine the left turn storage requirement to accommodate the expected traffic volumes in the 2010 horizon year.

The formulas used for the calculations are stated below and the resulting left turn lane storage requirements for the 2010 horizon year are summarized in **Table 6**. The left-turn queue storage calculations can be found in **Appendix H**.

For signalized intersections, the storage length is determined by the following formula:

Storage Length =  $[2 \times (veh/hr)/(cycles/hr)] \times 25$  feet

For unsignalized intersections, the storage length is determined by the following formula:

Storage Length =  $[(veh/hr)/(30 periods/hr)] \times 25 feet$ 

Table 6 - 2010 Left Turn Lane Queue Length

ID	Intersection	Intersection Control	Approach	Existing Storage	Calculated Storage	Recommended Storage
			NB	(2) 175'	400'	(2) 175'
1	Goldwater Blvd. &	Signalized	SB	<sup>(2)</sup> 130 <sup>'</sup>	125'	<sup>(2)</sup> 130 <sup>'</sup>
•	Camelback Rd.	Olgitalized	EB	190'	300'	190'
			WB	110'	175'	110'
			NB	90'	75'	90'
2	Goldwater Blvd. &	Signalized	SB	200'	50'	200'
2	5 <sup>th</sup> Ave		EB	45'	75'	45'
			WB	30'	75'	30'
3	Goldwater Blvd. &	1 May Stan	NB	N/A	(3) <sub>50</sub> ,	(3) <sub>50</sub> ,
3	3 <sup>rd</sup> Ave	1-Way Stop	SB	75'	25'	75'
			NB	105'	175'	105'
	Goldwater Blvd. & Indian School Rd.	Signalized	SB	115'	225'	115'
4			EB	<sup>(2)</sup> 275 <sup>'</sup>	375'	<sup>(2)</sup> 275 <sup>'</sup>
			WB	<sup>(2)</sup> 160'	100'	<b>(2)</b> 160'
5	5 <sup>th</sup> Ave & Indian School Rd.	1-Way Stop	EB	75'	125'	75'
			NB	110'	100'	110'
6	68 <sup>th</sup> Street & Indian	Signalized	SB	180'	150'	180'
	School Rd.		EB	310'	375'	310'
			WB	125'	175'	125'

<sup>(1)</sup> A minimum of 75' of storage is recommended for all movements at unsignalized intersections and 150' of storage at signalized intersections.

<sup>(3)</sup> Recommended U-turn minimum queue storage.



<sup>(2)</sup> Dual left turning lanes are recommended.

It is recommended that existing left turn queue storage remain the same at all existing intersections. Under proposed future conditions recommended improvements to existing left turn queue storage lengths are not required. All existing and proposed intersections operate efficiently under existing queue storage lengths and proposed conditions.

As shown in **Table 6** a minimum storage of 50 feet is recommended for all northbound u-turns at the intersection of Goldwater Boulevard and 3<sup>rd</sup> Avenue.

#### **Right Turn Storage Analysis**

A right-turn queuing analysis was performed for all warranted and recommended right turn lanes with the stop control shown in **Figure 9**. The results of this analysis are summarized in **Table 7**.

Table 7 – 2010 Right Turn Lane Queue Length

ID	Intersection	Intersection Control	Approach	Existing Storage	Calculated Storage	Recommended Storage
1	Goldwater Blvd. & Camelback Rd.	Signalized	NB Right SB Right EB Right	100' 150' 100'	225' 425' 375'	100' 150' 100'
2	Goldwater Blvd. & 5 <sup>th</sup> Ave	Signalized	EB Right WB Right	45' 30'	100' 100'	45' 30'
4	Goldwater Blvd. & Indian School Rd.	Signalized	EB Right	160'	150'	160'
5	5 <sup>th</sup> Ave & Indian School Rd.	1-Way Stop	WB Right	N/A	50'	(1) <sub>75</sub> ,
6	68 <sup>th</sup> Street & Indian School Rd.	Signalized	EB Right WB Right	200' 100'	150' 225'	200' 100'
9	Access C & Goldwater Blvd.	1-Way Stop	SB Right	N/A	125'	125'

<sup>(1)</sup> A minimum of 75' of storage is recommended for all movements at unsignalized intersections and 150' of storage at signalized intersections.

The queue storage calculations summarized in **Table 7** indicate a minimum of 125 feet of storage is required for the southbound right deceleration lane at Access C and Goldwater Boulevard.

It is recommended that existing right turn queue storage remain the same at all existing intersections. Under proposed future conditions recommended improvements to existing right turn queue storage lengths are not required. All existing and proposed intersections operate efficiently under existing queue storage lengths and proposed conditions.

The right-turn queue storage calculations can be found in **Appendix H**.



#### **Site Access Design**

It is recommended that both site driveways should be designed to meet the standards established by the City of Scottsdale in its *Design Standards and Policies Manual, 2006 Update.* The driveway types typically required on major arterial roadways such as Indian School Road are CH-2 and CH-3, which provide one ingress lane and two egress lanes. The driveway type on a minor collector roadway such as 5<sup>th</sup> Avenue is CH-1 which provides one ingress lane and one egress lane. Per City of Scottsdale standards, the minimum length for a commercial or industrial driveway is 50 feet, measured from the entrance of the off-street parking area to the back of sidewalk or the back of curb if no sidewalk is provided. Copies of the applicable standards are provided in **Appendix I** for reference.

Although the proposed Access C operates at acceptable levels of service as a restricted right-in, right-out access, it is recommended that Access C be shifted north of the proposed location to just north of the taper for the south bound left turn lane leading to the intersection of Goldwater Boulevard and Indian School Road. This shift would allow for left turns out of the site and provide better access for the site. As a ¾ access point (right-in, right-out, left-in), Access C is expected to operate with acceptable levels of service.

#### **Sight Distance Analysis**

Adequate sight distance must be provided at the intersections to allow safe turning movements into and out of the development. A sight triangle is the area encompassed by the line of sight from a stopped vehicle on the minor roadway to the approaching vehicle on the major roadway: there must be sufficient unobstructed sight distance along both approaches of a street or driveway intersection and across their included corners to allow operators of vehicles to see each other in time to prevent a collision. There must also be sufficient sight distance along the major street to allow a driver intending to turn left into the site to see an oncoming vehicle in the opposing direction.

Sight distance should be provided at the proposed access based on the standards provided in the City of Scottsdale's Design Standards and Policies Manual, 2006 Update.

Existing sight distance was not measured at the site access points. The developer should ensure that adequate sight distance is provided at the intersections to allow safe left and right turning movements from the development. Landscaping should be maintained at a maximum of three feet in height. To maintain sight distance, tree branches should be trimmed lower than seven feet and maintained to meet current acceptable landscape requirements while maintaining sight distance.

Figures depicting the method and sight distance requirements are provided in the City of Scottsdale's *Design Standards and Policies Manual, 2006 Update.* Copies of the applicable standards are provided in **Appendix I** for reference.



### PROPOSED LANE CONFIGURATION

As a result of the intersection capacity analyses and the projected ADT's, the proposed future intersection approach lane configurations and stop control for the horizon year 2010 is shown in **Figure 9**.



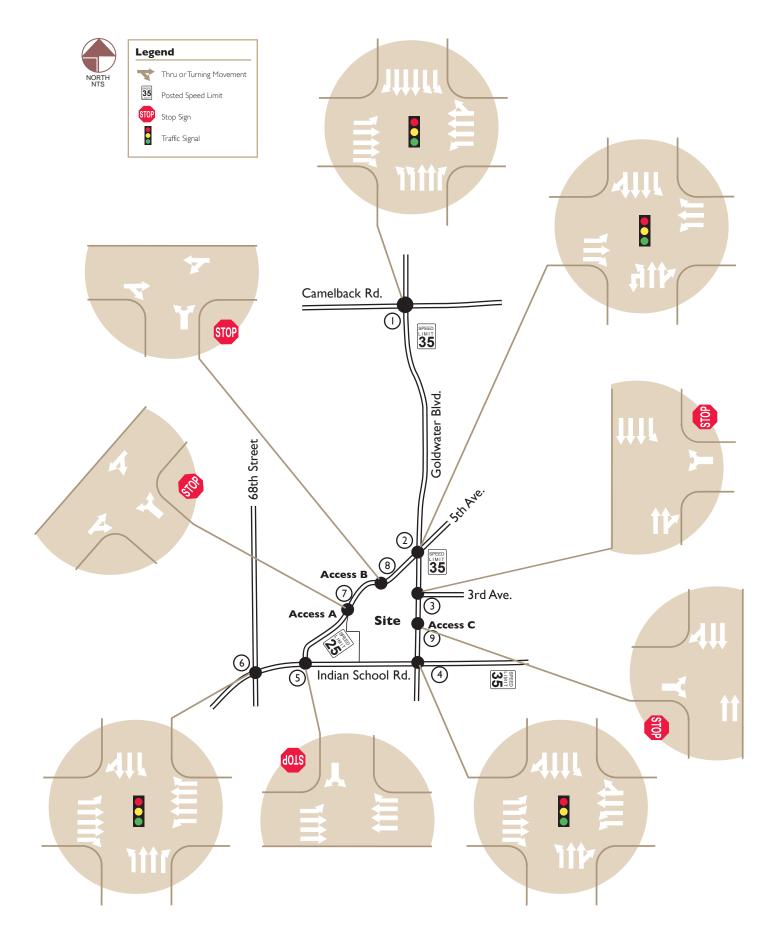


Figure 9: Proposed Future Lane Configuration and Stop Controls

#### CONCLUSIONS AND RECOMMENDATIONS

The Hanover Mixed-Use development located in the northwest corner of Goldwater Boulevard and Indian School Road in Scottsdale, Arizona consists of residential, retail and restaurant use. A project buildout year 2010 was analyzed as opening year for the proposed Hanover Mixed-Use development. The proposed site will include approximately 23,800 square feet (SF) of retail/restaurant use and 247 dwelling units of residential condominiums.

The proposed site is panned to have three access points with one emergency drive; Access A and Access B are located along 5<sup>th</sup> Avenue, Access C and the planned emergency drive are located along Goldwater Boulevard. Under the proposed site plan Access A and Access B are planned to serve the residential half of the development, allowing full access in and out of the residential area only.

The purpose of this study is to address traffic and transportation impacts of the proposed development on the surrounding streets and intersections. This traffic impact study was prepared for submittal to the City of Scottsdale.

- The proposed Hanover Mixed-Use development will generate approximately 4,480 daily external trips with 237 anticipated in the AM peak hour and 466 in the PM peak hour.
- ◆ The results of the existing conditions analysis revealed that all signalized study intersections currently operate at an overall acceptable level of service in both the AM and PM peak hours. The analysis further revealed that all approaches at the study intersections, signalized and unsignalized, currently operate at acceptable levels of service (LOS D or better).
- ◆ The results of the 2010 horizon year analysis revealed that all signalized study intersections are expected to operate at an overall acceptable level of service in both the AM and PM peak hours by the buildout/opening year 2010. All signalized intersections analyzed have been optimized to operate at the highest level of service. The analysis further revealed that all movements at the study intersections and site accesses are expected to operate at an overall acceptable level of service (LOS D or better) upon opening of the development in 2010.
- ◆ The results of the 2010 horizon year analysis revealed that Accesses A and B along 5<sup>th</sup> Avenue are expected to operate with acceptable levels of service as full access points in both the AM and PM peak hours. The results also indicate that Access C along Goldwater Boulevard will operate with acceptable levels of service as a restricted right-in, right-out access point in both the AM and PM peak hours.



- ◆ Although the proposed Access C operates at acceptable levels of service as a restricted right-in, right-out access, it is recommended that Access C be shifted north of the proposed location to just north of the taper for the south bound left turn lane leading to the intersection of Goldwater Boulevard and Indian School Road. This shift would allow for left turns out of the site and provide better access for the site. As a ¾ access point (right-in, right-out, left-in), Access C is expected to operate with acceptable levels of service.
- ♦ Should full access be desired into the retail site, it is recommended that the emergency access, aligned with 3<sup>rd</sup> Avenue, provide full access to the retail site. With this access point providing full access to the site, Access C could essentially be eliminated. This would require extensive site plan revisions and is therefore a secondary recommendation.
- ◆ Based on the above criteria, low volumes on 5<sup>th</sup> Avenue and the assumed posted speed, exclusive left turn lanes into site Accesses A and B are not warranted per the City of Scottsdale's criteria.
- Based on the above City of Scottsdale criteria for driveways along major arterials, a right-turn deceleration lane is warranted, and is thus recommended, in the southbound approach to Access C from Goldwater Boulevard by horizon year 2010.
- It is recommended that existing left turn queue storage remain the same at all existing intersections. Under proposed future conditions recommended improvements to existing left and right turn queue storage lengths are not required. All existing and proposed intersections operate efficiently under existing queue storage lengths and proposed conditions.
- ♦ As shown in **Table 6** a minimum storage of 50 feet is recommended for all northbound u-turns at the intersection of Goldwater Boulevard and 3<sup>rd</sup> Avenue.
- ◆ The queue storage calculations summarized in Table 7 indicate a minimum of 125 feet of storage is required for the southbound right deceleration lane at Access C and Goldwater Boulevard.
- ♦ It is recommended that both site driveways should be designed to meet the standards established by the City of Scottsdale in its Design Standards and Policies Manual, 2006 Update. The driveway types typically required on major arterial roadways, such as Indian School Road, are CH-2 and CH-3 which provide one ingress lane and two egress lanes. The driveway type on a minor collector roadway such as 5<sup>th</sup> Avenue is CH-1 which provides one ingress lane and one egress lane. Per the City of Scottsdale standards, the minimum length for a commercial or industrial driveway is 50 feet, measured from the entrance of



the off-street parking area to the back of sidewalk or the back of curb if no sidewalk is provided.

◆ The developer should ensure that adequate sight distance is provided at the intersections to allow safe left and right turning movements from the development. Landscaping should be maintained at a maximum of three feet in height. To maintain sight distance, tree branches should be trimmed lower than seven feet and maintained to meet current acceptable landscape requirements while maintaining sight distance.



#### LIST OF REFERENCES

- A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials, Washington, D.C., 2001.
- Design and Safety of Pedestrian Facilities, Institute of Transportation Engineers, Washington, D.C., March 1998.
- Design Standards and Policies Manual, 2006 Update, City of Scottsdale
- Highway Capacity Manual. Transportation Research Board, National Research Council, Washington, D.C., 2000.
- Manual of Uniform Traffic Control Devices. U.S. Department of Transportation, Federal Highways Administration, Washington, D.C., 2003.
- Street Classification Map, City of Scottsdale website, 2003.
- *Transportation and Land Development*, Stover, V. G. and Koepke, F. J., Institute of Transportation Engineers, Washington, D.C, 1988.
- *Trip Generation 7<sup>th</sup> Edition*, Institute of Transportation Engineers, Washington, D.C, 2003.



#### **TECHNICAL APPENDICES**

APPENDIX A CITY OF SCOTTSDALE REVIEW COMMENTS

APPENDIX B EXISTING TRAFFIC COUNTS

APPENDIX C EXISTING PEAK HOUR ANALYSIS

APPENDIX D TRIP GENERATION

APPENDIX E TRIP DISTRIBUTION CALCULATIONS

APPENDIX F BACKGROUND GROWTH RATE CALCULATIONS

APPENDIX G 2010 PEAK HOUR ANALYSIS

APPENDIX H QUEUE LENGTH ANALYSIS

APPENDIX I CITY OF SCOTTSDALE DESIGN STANDARDS AND POLICIES



## **APPENDIX A**

CITY OF SCOTTSDALE REVIEW COMMENTS





#### REPORT REVIEW

**REPORT TITLE:** Hanover Mixed-Use Development

**REPORT DATE:** August 2007

PREPARED BY: Civ Tech, Inc.

**CASE** #: 524-PA-2007

**REVIEWED BY:** Jennifer Bohac

**REVIEW DATE:** August 2007

#### REPORT APPROVAL STATUS:

- APPROVED AS SUBMITTED
- APPROVED AS NOTED
- X NOT APPROVED; REVISE AND RESUBMIT (SEE COMMENTS)
- \_ NOT ACCEPTED; RESUBMIT PER ATTACHED GUIDELINES

### **COMMENTS:**

- 1. Typical all figures 68<sup>th</sup> Street is labeled as 86<sup>th</sup> Street
- 2. Existing Roadway Network, p. 6 Need to list how many lanes and median type each roadway has in vicinity of the site.
- 3. Existing Roadway Network, Camelback Rd, p. 6 Camelback Road does not connect to the Loop 101 Pima Freeway, but becomes a minor collector and serves primarily residential uses past Hayden Road.
- 4. Existing Roadway Network, 68<sup>th</sup> Street, p. 7 68<sup>th</sup> St terminates into Curry Rd in Tempe, AZ not Scottsdale
- 5. Intersection Configurations, 68<sup>th</sup> St and Indian School Rd, p. 8 ...residential **single** family homes are located on the southwest corner....
- 6. Site Access, p. 13 re-write for new access. Access A & B are restricted to clubhouse use not office use, confusing. Also mention that for turns out of Access C that southbound to northbound U-turns are prohibited at Goldwater/Indian School Rd.
- 7. Trip Generation, p. 15 need to reduce for internal trips. Need to compare proposed to existing land uses (office, hotel, and restaurant).
- 8. Future Background Traffic, p. 16 Second sentence, 2022 should read 2002.

- 9. Level of Service, p. 21 some intersection movements improve with project trips added. You can only optimize splits not cycle lengths for future years. Cycle lengths must remain 102 or 120 seconds.
- 10. Queuing Analysis, p. 23 & 24, Tables 6 & 7 why are some of the recommended storage lengths less than the calculated storage lengths?
- 11. Figure 9, Proposed Future Lane Configuration and Stop Controls 3<sup>rd</sup>
  Ave/Goldwater access labeled incorrectly. Need to show possible northbound
  U-turn movement at 5<sup>th</sup> Ave/Goldwater.
- 12. Conclusions and Recommendations, p. 28 second paragraph The proposed site is **planned**...
- 13. Conclusions and Recommendations, p. 29 first bullet Need to have more discussion with City staff about Access C design. Can left turn out be allowed? Can median area be modified to allow more two-way left turn length?

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
				Typical all figures - 68th Street is labeled as	
1.	Jennifer Bohac		1	86th Street.	Figures have been revised
				Existing Roadway Network, p. 6 - Need to list	
				how many lanes and median type each	
2.	Jennifer Bohac		1	roadway has in vicinity of the site.	Text has been revised
				Existing Roadway Network, Camelback Rd.,	
				p. 6 - Camelback Road does not connect to	
				the Loop 101 Pima Freeway, but becomes a	
				minor collector and serves primarily residential	
3.	Jennifer Bohac		1	uses past Hayden Road.	Text has been revised
				Existing Roadway Network, 68th Street, p. 7 -	
				68th St. terminates into Curry Road in Tempe,	
4.	Jennifer Bohac		1	AZ not Scottsdale.	Text has been revised
				Intersection Configurations, 68th Street and	
				Indian School Road, p. 8residential <b>single</b>	
				family homes are located on the southwest	
5.	Jennifer Bohac		1	corner	Revised
				Site Access, p. 13 - re-write for new access.	
				Access A & B are restricted to clubhouse use -	
				not office use, confusing. Also mention that for	
				turns out of Access C that southbound to	
				northbound U-turns are prohibited at	
6.	Jennifer Bohac		1	Goldwater/Indian School Road.	Revised
				Trip Generation, p. 15 - need to reduce for	
				internal trips. Need to compare proposed to	
				existing land uses (office, hotel, and	
7.	Jennifer Bohac		1	restaurant).	Revised
				Future Background Traffic, p. 16 - Second	
8.	Jennifer Bohac		1	sentence, 2022 should read 2002.	Revised

CivTech, Inc.

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Item No.	Reviewer	Location	Code	Review Comment	Response
9.	Jennifer Bohac			Level of Service, p. 21 - some intersection movements improve with project trips added. You can only optimize splits, not cycle lengths for future years. Cycle lengths must remain 102 or 120 seconds.	All signalized intersections for this analysis have been optimized to operate at the highest level of service with a set cycle length of 102 seconds
10.	Jennifer Bohac			Queuing Analysis, p. 23 & 24, Tables 6 & 7 - why are some of the recommended storage lengths less than the calculated storage lengths?	It is recommended that existing left turn queue storage remain unchanged at all existing intersections given right-of-way parameters
11.	Jennifer Bohac			Figure 9, Proposed Future Lane Configuration and Stop Controls - 3rd Ave./Goldwater access labeled incorrectly. Need to show possible northbound U-turn movement at 5th Ave./Goldwater.	Revised
12.	Jennifer Bohac		1	Conclusions and Recommendations, p. 28 second paragraph - The proposed site is planned	Revised
13.	Jennifer Bohac			Conclusions and Recommendations, p. 29 first bullet - Need to have more discussion with City staff about Access C design. Can left turn out be allowed? Can median area be modified to allow more two-way left turn length?	



# ATTACHMENT D - 2012 UPDATE





DAWN D.

CARTIER

DAWN D.

CARTIER

DOINGS 03/31/2013

February 01, 2012

Mr. Gary Biales Zaremba Group, LLC 14600 Detroit Avenue, Suite 1500 Lakewood, OH 44107 (216) 221-2106 Direct

RE: Trip Generation Statement for the E. Indian School & N. Goldwater development in Scottsdale, Arizona

Dear Mr. Biales:

CivTech Inc. has been retained by Zaremba Group, LLC, to prepare a trip generation statement for the proposed E. Indian School & N. Goldwater development which will be located on the northwest corner of Indian School Road and Goldwater Boulevard in Scottsdale, Arizona. The proposed project, located on 4.25 acres, will provide attached, multi-family residential units. The previously approved plan for this site, the Hanover Mixed-Use development (Hanover), contained retail, restaurant, and multi-family attached residential uses. A site plan showing the subject property has been included in the **Attachments**. The purpose of this letter is to provide two trip generation evaluations for the project site detailing the previously approved trip generation potential (Hanover) and the proposed E. Indian School & N. Goldwater trip generation that could be anticipated upon the site's development.

#### PREVIOUSLY APPROVED TRIP GENERATION (HANOVER)

The existing site has been approved for a mixed use development that has not been constructed. The site was approved to contain 247 units of residential condominiums and approximately 23,800 square feet of retail space.

The trip generation for the Hanover development was estimated utilizing the Institute of Transportation Engineers (ITE) *Trip Generation*, 8<sup>th</sup> Edition and *Trip Generation Handbook*, 2<sup>nd</sup> Edition. *Trip Generation* contains data collected by various transportation professionals for a wide range of different land uses. The data summarized in the report includes average rates and equations that have been established correlating the relationship between an independent variable that describes the development size and generated trips for each categorized land use. The report provides information for daily and peak hour trips.

Trip generation average rates from ITE's *Trip Generation* were used to calculate the total existing trips for the proposed site. Ten percent of the trips generated by the site are estimated to be "pass-by" trips and would not be additional traffic to the existing roadways. Therefore, the total trips reduced by ten percent are the estimated "new" trips to the existing roadways caused by the Hanover development.

**Table 1** summarizes the existing trip generation of the site. A detailed trip generation worksheet has been included as part of the **Attachments**.

**Table 1: Approved Trip Generation** 

					Wee	kday (	enera	ted Tri	ps	
	ITE		Size	Daily	AM	Peak H	lour	PM I	Peak H	lour
Land Use	Code	Quantity	Units	Total	Total	Enter	Exit	Total	Enter	Exit
Low Rise Residential Condominium	231	247	Dwelling Units	1,448	166	42	124	193	112	81
Shopping Center	820	27.716	1,000 SF	2,950	73	45	28	269	129	140
Quality Restaurant	931	4.000	1,000 SF	360	4	3	1	30	20	10
TOTAL T	RIPS W	ITHOUT R	EDUCTIONS	4,758	243	90	153	492	261	231
Internal Tr	ips base	ed on 10%	Capture Rate	476	24	9	15	49	26	23
	TC	TAL NET	NEW' TRIPS	4,282	219	81	138	443	235	208

Source: Trip Generation as shown in Table 4 'Trip Generation Summary' within the Hanover Mixed-Use Development TIA prepared by CivTech on December 21, 2007 and approved by the City of Scottsdale.

The results of the trip generation summarized in **Table 1** reveal that the Hanover development generates approximately 4,032 daily trips, with 214 of those trips occurring during the AM peak hour and 420 occurring during the PM peak hour.

#### PROPOSED TRIP GENERATION

The E. Indian School & N. Goldwater development is proposed to contain up to 420 multi-family dwelling units. The proposed dwelling units would have an average of 887 square feet per unit and an intensity of 97 dwelling units per acre.

Trip generation average rates from ITE's *Trip Generation* were used to calculate the anticipated trips for the proposed site. Only one land use is proposed, therefore a reduction to the total traffic for pass-by trips is not significant and was not applied.

**Table 2** summarizes the anticipated build-out trip generation for the proposed E. Indian School & N. Goldwater development. A detailed trip generation worksheet has been included as part of the **Attachments**.

**Table 2: Proposed Trip Generation Potential** 

:					Wee	kday G	enera	ted Tri	ps	
	ITE		Size	Daily	AM	Peak F	lour	PM I	Peak H	lour
Land Use	Code	Quantity	Units	Total	Total	Enter	Exit	Total	Enter	Exit
Apartments	220	420	Dwelling Units	2,794	215	43	172	261	170	91

The results of the trip generation summarized in **Table 2** reveal that the E. Indian School & N. Goldwater development is anticipated to generate 2,794 daily trips, with 215 of those trips occurring during the AM peak hour and 261 occurring during the PM peak hour.

#### TRIP GENERATION COMPARISON AND IMPACT TO ADJACENT ROADWAY

The results of the trip generation summarized in **Table 1** and **Table 2** have been compared in **Table 3** below.



**Table 3: Trip Generation Summary** 

Ci-	Daily	ı	M Peak Hou	r		PM Peak Hou	r
Scenario	Total	Total	Enter	Exit	Total	Enter	Exit
Approved	4,282	219	81	138	443	235	208
Proposed	2,794	215	43	172	261	170	91
Difference	1,488	-4	-38	34	-182	-65	-117

**Table 3** shows that the proposed E. Indian School & N. Goldwater development trip generation generally generates fewer trips than the previously approved Hanover Mixed-Use development. The anticipated difference is 1,488 less daily trips and 182 less cars during the PM peak hour; the AM peak hour total trips will increase by 34 vehicles. The proposed calculated trip generation is approximately 36 percent less daily trips and 42 percent less PM peak hour trips than the previously approved development.

#### CONCLUSIONS

From the above, the following could be concluded.

- The site includes approximately 4.25 gross acres.
- The previously approved Hanover Mixed-Use development was anticipated to generate approximately of 4,282 daily trips, with 219 of those trips occurring during the AM peak hour and 443 occurring during the PM peak hour.
- The E. Indian School & N. Goldwater development is anticipated to generate approximately 2,794 daily trips, with 215 of those trips occurring during the AM peak hour and 261 occurring during the PM peak hour.
- The E. Indian School & N. Goldwater proposed trip generation is approximately 36 percent less daily trips and 42 percent PM peak hour trips than the previously approved development.
- The E. Indian School & N. Goldwater proposed trip generation will supply a slightly higher trip rate during the AM peak hour with an additional 34 vehicles.

In closing, this trip generation statement has been prepared to document the potential traffic impacts of the proposed development. Should you wish to discuss this information further, please contact me at (480) 659-4250.

Sincerely,

CivTech

Dawn Cartier, P.E., PTOE

Project Manager

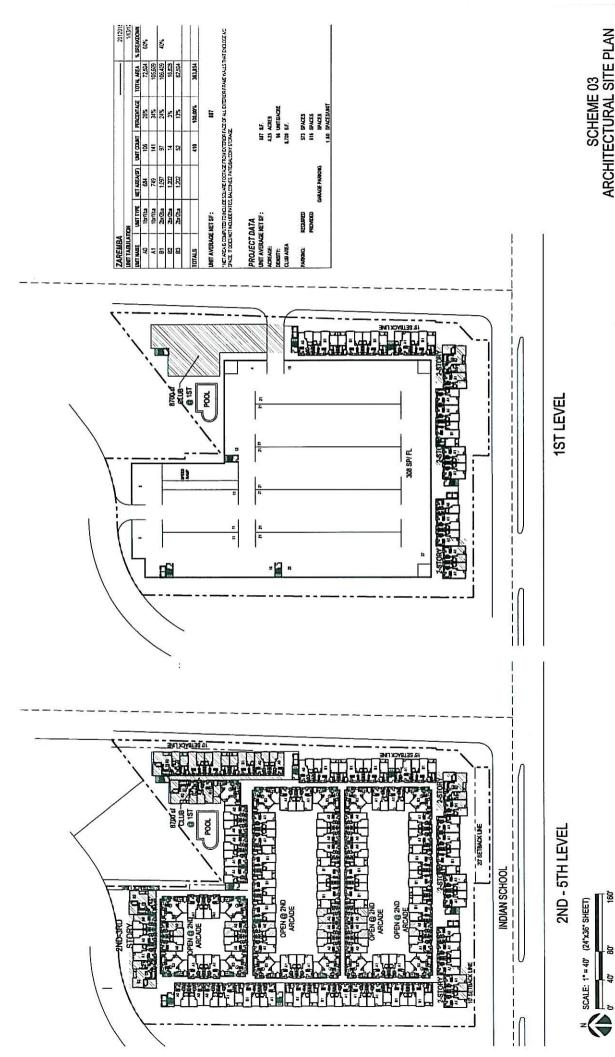
Attachments:

Proposed E. Indian School & N. Goldwater Development Site Plan

Hanover Mixed-Use Trip Generation Calculations

E. Indian School & N. Goldwater Trip Generation Calculations





ARCHITECTURAL SITE PLAN SCHEME 03

E. INDIAN SCHOOL & N. GOLDWATER

5

ZAREMBA

SCOTTSDALE, AZ

HPA #12015

HUMPHREYS & PARTNERS ARCHITECTS L.P. 1

1/18/2012

	ITE				AM Distr	ribution	PM Distr	ibution
Proposed Use	LUC	ITE Land Use Name	Units	Total	In	Out	In	Out
Low Rise Residential Condominium/ Townhouse	231	Low Rise Residential Condominium/Townhouse	Dwelling Units	247	25%	75%	58%	42%
Shopping Center	820	Shopping Center	420	27.716	61%	39%	48%	52%
Quality Restaurant	931	Quality Restaurant	1,000 SF	4.000	75%	25%	67%	33%
TOTALS								
		ADT 1 AM	Peak Hour	ĭ		PM Pea	k Hour	

	JA	TC		AM Pea	k Hour			PM Peal	Hour	
Proposed Use	Avg Rate	Total	Avg Rate	Total	In	Out	Avg Rate	Total	In	Out
Low Rise Residential	5.86	1,448	0.67	166	42	124	0.78	193	112	81
Shopping Center	######	2,950	2.61	73	45	28	9.68	269	129	140
Quality Restaurant	89.95	360	0.81	4	3	1	7.49	30	20	10
TOTALS		4,758		243	90	153		492	261	231

Notes: 1. This trip generation calculation is provided for the entire development without applied volume reductions taken as part of this study. If applicable, trips net of interaction and pass-by trips are shown below.

Interaction/Internal Capture Differences Interaction Factor: 10% Vet Trips	476	24	9	15	49	26	23
	4,282	219	81	138	443	235	208
NET "NEW" TRIPS (After interaction/internal capture & net of p.	4,282 ass-by trips)	219	81	138	443	235	208

	ITE							AM Distr	ibution	PM Dist	ribution
Proposed Use	LUC	IT	E Land	Use Name		Total	Units	In	Out	In	Out
Apartments	220		Араг	tment		420	Dwelling Units	20%	80%	65%	35%
		AD		<u> </u>		ak Hour			PM Peal	k Hour	
Proposed Use		Avg Rate	Total	Avg Rate	Total	In	Out	Avg Rate	Total	In	Out
Apartments		6.65	2,794	0.51	215	43	172	0.62	261	170	91
TOTALS			2,794		215	43	172		261	170	91
NET "NEW" TRIPS	:		2,794		215	43	172	-	261	170	91



## ATTACHMENT E - TRIP GENERATION



#### NWC Indian School Rd and Goldwater Blvd

Wood Partners

<u>lokahi</u>

Trip Generation Calculations (11th Edition)

Proposed

Multifamily Housing (Mid-Rise)																						4
Land Use	ITE	Qty	Unit	Weekd	lay		AM Peak F	lour		PM Peak H	our			Weekday			AM Peak Hour		PI	M Peak Hoι	ır	4
Land Ose	Code	Qty	Offic	Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	ln	Out	4
Multifamily Housing (Mid-Rise)	221	232	Dwelling Units	4-54	50%	50%	0.37	23%	77%	0.39	61%	39%	1,053	527	526	86	20	66	90	55	35	A.
Multifamily Housing (Mid-Rise)	221	232	Dwelling Units	3.76	50%	50%	0.15	23%	77%	0.19	61%	39%	872	436	436	35	8	27	44	27	17	Mi
Multifamily Housing (Mid-Rise)	221	232	Dwelling Units	5.40	50%	50%	0.53	23%	77%	0.57	61%	39%	1,253	627	626	123	28	95	132	81	51	Ma
Land Use	ITE	Qty	Unit	Weekd	lay		AM Peak I	lour		PM Peak H	our			Weekday			AM Peak Hour		PI	M Peak Hoι	ır	4
	Code	Qty	Offic	Equation	% In	% Out	Equation	% In	% Out	Equation	% In	% Out	Total	In	Out	Total	In	Out	Total	ln	Out	4
Multifamily Housing (Mid-Rise)	221	232	Dwelling Units	T=4.77(X)-46.46	50%	50%	T=.44(X)-11.61	23%	77%	T=.39(X)+0.34	61%	39%	1,060	530	530	90	21	69	91	56	35	Ec
	•			•			•															_
		Sta	ndard Deviation	0.51			0.09			0.08												4
Multifamily Housing (Mid Rico)		Nui	mber of Studies	11			30			31												4
Multifamily Housing (Mid-Rise)			Average Size	201			173			169												4
			R2	0.93			0.91			0.91												4

2 Strip Retail Plaza (<40k)																						1
Land Use	ITE	Qty	Unit	Weekda	ау		AM Peak H	our		PM Peak H	our			Weekday			AM Peak Hour		PA	Л Peak Ho	ur	1
Land Ose	Code	Qty	Offic	Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	ln	Out	Total	In	Out	Total	ln	Out	l .
Strip Retail Plaza (<40k)	822	33	1,000 SF GLA	54-45	50%	50%	2.36	60%	40%	6.59	50%	50%	1,778	889	889	77	47	30	215	107	108	Averag
Strip Retail Plaza (<40k)	822	33	1,000 SF GLA	47.86	50%	50%	1.60	60%	40%	2.81	50%	50%	1,563	781	782	52	32	20	92	45	47	Minimu
Strip Retail Plaza (<40k)	822	33	1,000 SF GLA	65.07	50%	50%	3.73	60%	40%	15.20	50%	50%	2,125	1,062	1,063	122	74	48	496	248	248	Maximu
Land Use	ITE	Qty	Unit	Weekda	ау		AM Peak H	our		PM Peak H	our			Weekday			AM Peak Hour		PN	Л Peak Ho	ur	ı
Land Ose	Code	Qty	Offic	Equation	% In	% Out	Equation	% In	% Out	Equation	% In	% Out		ln	Out	Total	In	Out	Total	ln	Out	1
Strip Retail Plaza (<40k)	822	33	1000 SF GLA	T=42.20(X)+229.68	50%	50%	Ln(T)=0.66Ln(X)+1.84	60%	40%	Ln(T)=0.71Ln(X)+2.72	50%	50%	1,608	804	804	63	38	25	181	91	90	Equatio
	•									•												
		Sta	ndard Deviation	7.81			0.94			2.94												1
Strip Retail Plaza (<40k)		Nu	mber of Studies	4			5			25												l .
Strip Retail Plaza (<40K)			Average Size	19			18			21												i .
			R <sup>2</sup>	0.96			0.57			0.56												4

Existing

Existing																						
320 Motel																						i
Land Use	ITE	Qty	Unit	Weekda	ау		AM Peak H	our		PM Peak H				Weekday			AM Peak Hour		PA	M Peak Hoւ		1
Land Ose	Code	Qty	Offic	Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	ln	Out	1
Motel	320	98	Rooms	3-35	50%	50%	0.35	37%	63%	0.36	54%	46%	328	164	164	34	13	21	35	19	16	Avera
Motel	320	98	Rooms	1.65	50%	50%	0.08	37%	63%	0.06	54%	46%	162	81	81	8	3	5	6	3	3	Minim
Motel	320	98	Rooms	4.38	50%	50%	0.97	37%	63%	0.83	54%	46%	429	214	215	95	35	60	81	44	37	Maxim
Land Hea	ITE	Qty	Unit	Weekda	ау		AM Peak H	our		PM Peak H	our			Weekday			AM Peak Hour		PN	M Peak Ho	ur	4
Land Use	Code	Qty	Offic	Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	ln	Out	Total	In	Out	Total	ln	Out	1
Motel	320	98	Rooms	T=3.62(X)-29.43	50%	50%	T=.28(X)+7.85	37%	63%	T=0.24(X)+11.16	54%	46%	325	162	163	35	13	22	35	19	16	Equat
																						_
		Sta	ndard Deviation	0.87			0.18			0.18												4
Motel		Nu	mber of Studies	6			15			20												1
Moter			Average Size	109			108			98												4
			R <sup>2</sup>	0.96			0.69			0.56												1
•	•						•															

																						-
822 Strip Retail Plaza (<40k)																						i
Land Use	ITE	Qty	Unit	Weekda	ıy		AM Peak Ho	our		PM Peak Ho	our			Weekday			AM Peak Hour		P۸	Л Peak Ho	ur	1
Land Ose	Code	Q Ly	Offic	Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	ln	Out	l .
Strip Retail Plaza (<40k)	822	6.2	1,000 SF GLA	54-45	50%	50%	2.36	60%	40%	6.59	50%	50%	336	167	169	15	9	6	41	20	21	Averag
Strip Retail Plaza (<40k)	822	6	1,000 SF GLA	47.86	50%	50%	1.60	60%	40%	2.81	50%	50%	295	147	148	10	6	4	17	8	9	Minimu
Strip Retail Plaza (<40k)	822	6	1,000 SF GLA	65.07	50%	50%	3.73	60%	40%	15.20	50%	50%	401	200	201	23	14	9	94	46	48	Maximu
Land Use	ITE	Qty	Unit	Weekda	y		AM Peak Ho	our		PM Peak Ho	our			Weekday			AM Peak Hour		P۸	Л Peak Ho	ur	i .
Land Ose	Code	Q Ly	Offic	Equation	% In	% Out	Equation	% In	% Out	Equation		% Out		In		Total	In	Out	Total	ln	Out	1
Strip Retail Plaza (<40k)	822	6	1000 SF GLA	T=42.20(X)+229.68	50%	50%	Ln(T)=0.66Ln(X)+1.84	60%	40%	Ln(T)=0.71Ln(X)+2.72	50%	50%	490	245	245	21	13	8	56	28	28	Equation
				•													•					
		Sta	ndard Deviation	7.81			0.94			2.94												1
Strip Retail Plaza (<40k)		Nu	mber of Studies	4			5			25												1
Strip Retail Plaza (<40K)			Average Size	19			18			21												4

0.56

. ITF			344 1 1												
	Otv	Unit	Weekda		AM Peak H	lour	PM Peak Ho	our		Veekday		AM Peak Hour		PM P	eak Hour
Land Use Code	Qty	Offic	Rate	% In % Out	Rate	% In % Out	Rate	%In %Out	Total	In Ou	Total	In	Out	Total	In Out

0.57

0.96

6 1000 0 110 1			1				ı													_		٦.
General Office Building	710	36.1	1,000 SF GFA	10.84	50%	50%	1.52	88%	12%	1.44	17%	83%	391	196	195	55	48	7	52	9	43	Averag
General Office Building	710	36.1	1,000 SF GFA	3.27	50%	50%	0.32	88%	12%	0.26	17%	83%	118	59	59	12	11	1	9	2	7	Minimu
General Office Building	710	36.1	1,000 SF GFA	27.56	50%	50%	4.93	88%	12%	6.2	17%	83%	994	497	497	178	157	21	224	38	186	Maximu
Land Use	ITE	Qty	Unit	Weekda	y		AM Peak H	our		PM Peak H	our			Weekday			AM Peak Hour		Pi	M Peak Ho	ur	4
Land OSC	Code	Q Cy	Onic	Rate		% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	4
General Office Building	710	36.1	1,000 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%	478	239	239	70	62	8	71	12	59	Equation
																						_
		Sta	ndard Deviation	4.76			0.58			0.6												4
Community Office Building		Nu	mber of Studies	59			221			232												4
General Office Building			Average Size	163			201			199												4
			R <sup>2</sup>	0.78			0.78			0.77												1
932 High-Turnover (Sit-Down) Restaurant																						1
	ITE			Weekda	y		AM Peak Ho	our		PM Peak H	our			Weekday			AM Peak Hour		Pi	M Peak Ho	ur	4
Land Use	Code	Qty	Unit	Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Total	In	Out	Total	In	Out	Total	In	Out	4
High-Turnover (Sit-Down) Restaurant	932	5	1,000 SF GFA	107.20	50%	50%	9.57	55%	45%	9.05	61%	39%	515	258	257	46	25	21	43	26	17	Average
High-Turnover (Sit-Down) Restaurant	932	5	1,000 SF GFA	13.04	50%	50%	0.76	55%	45%	0.92	61%		63	32	31	4	2	2	4	,	,	Minimur
High-Turnover (Sit-Down) Restaurant	932	-	1,000 SF GFA	742.41	50%	50%	102.39	55%	45%	62.00	61%	- //	3,568	1,784	1,784	492	271	221	298	182	116	Maximu
	ITE	,	/ -	Weekda		30%	AM Peak H		43/0	PM Peak H		39%	5,500	Weekday	1,704		AM Peak Hour	221		M Peak Ho		Maximu
Land Use	Code	Qty	Unit	Equation	%In	% Out	Equation		% Out	Equation		% Out	Total	In	Out	Total	In	Out	Total	In	Out	A .
High-Turnover (Sit-Down) Restaurant	932	-	1,000 SF 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	Equation
riigii rumovei (sie bowii) nestadrane	932	)	1,000 3F GFA	IN/A	11//1	IN/A	IN/A	IN/A	IN/A	IN/A	IN/A	IN/A	14/74	IN/A	IN//N	IN//N	IN/A	IN/A	N/A	IN/A	I IN/A	] Equation
		Cto	ndard Deviation	66.72			11.61			6.18												0
			mber of Studies																		_	A .
High-Turnover (Sit-Down) Restaurant				50			37			104												A
			Average Size	5			5			6												4
			R <sup>2</sup>	N/A			N/A			N/A												4



#### **Citrus Heights Trip Reductions**

#### Proposed

						AM PEA	K HOUF	₹				
Land Use		BEFOR	E REDUC	CTION	IC	INTERN	AL CAP	ΓURE	AFTER INTERNAL CAPTURE			
	Quantity	TOTAL	ENTER	EXIT	Rate %	TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT	
Multifamily Housing (Mid-Rise)	232	86	20	66	1%	1	-	1	85	20	65	
Strip Retail Plaza (<40k)	32.66	77	47	30	1%	1	1		76	46	30	
	TOTAL	163	67	96		2	1	1	161	66	95	

Quantity

232

32.66 TOTAL % Internal Capture

/0	incernar	Capture		1/0	1/0	1/0			
BEFOR	E REDUC	TION	IC	INTERN	AL CAPI	TURE	AFTER IN	TERNAL C	APTURE
TOTAL	ENTER	EXIT	Rate %	TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT
90	55	35	40%	36	25	11	54	30	24
215	107	108	17%	36	11	25	179	96	83
305	162	143		72	36	36	233	126	107

% Internal Capture 24% 22% 25%

Existing

Land Use

Multifamily Housing (Mid-Rise)

Strip Retail Plaza (<40k)

						AM PEAK HOUR											
Land Use		BEFOR	RE REDUC	CTION	IC	INTERN	AL CAP	TURE	AFTER INTERNAL CAPTURE								
	Quantity	TOTAL	ENTER	EXIT	Rate %	TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT						
Motel	98	34	13	21	15%	5	1	4	29	12	17						
General Office Building	36.1	70	62	8	26%	18	11	7	52	51	1						
Strip Retail Plaza (<40k)	6.2	15	9	6	41%	6	3	3	9	6	3						
High-Turnover (Sit-Down) Restaurant	4.8	46	25	21	37%	17	8	9	29	17	12						
	TOTAL			56		46	23	23	119	86	33						

% Internal Capture 28% 21% 41%

						PM PEA	K HOUR	₹				
Land Use		BEFORE REDUCTION			IC	INTERN	AL CAPI	TURE	AFTER INTERNAL CAPTURE			
	Quantity	TOTAL	ENTER	EXIT	Rate %	TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT	
Motel	98	35	19	16	9%	3	2	1	32	17	15	
General Office Building	36.1	71	12	59	6%	4	1	3	67	11	56	
Strip Retail Plaza (<40k)	6.2	41	20	21	39%	16	9	7	25	11	14	
High-Turnover (Sit-Down) Restaurant	4.8	43	26	17	40%	17	8	9	26	18	8	
	TOTAL	190	77	113		40	20	20	150	57	93	

% Internal Capture 21% 26% 18%

,	Weekday After IC											
Rate (Avg)	Original ADT	ADT After IC										
79.4%	1,053	836										
91.0%	1,778	1,618										
Total	2,831	2,454										
	377											

Weekday After IC											
Rate (Avg)	Original ADT	ADT After IC									
88.4%	328	290									
84.3%	478	403									
59.7%	336	200									
61.8%	515	318									
Total	1,657	1,211									
	IC Reduced	446									