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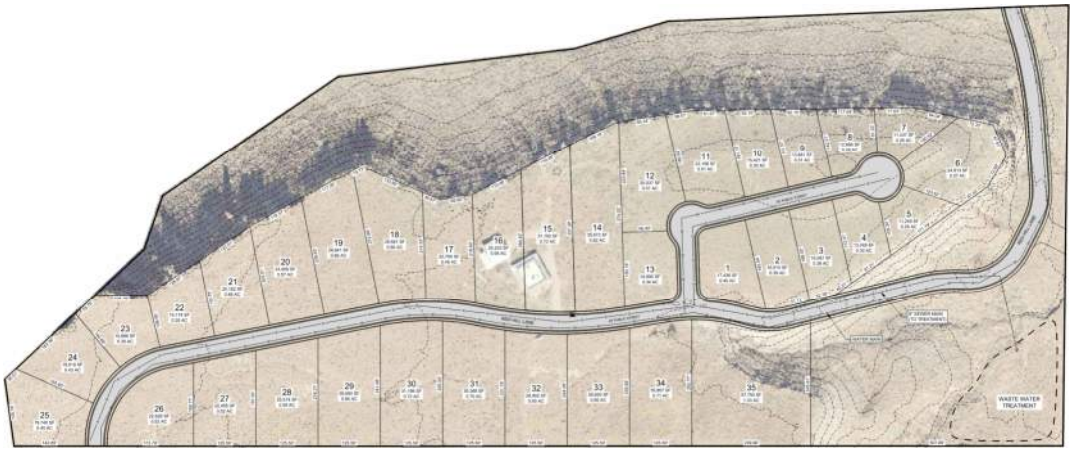
innovative transportation solutions

Quail Mesa

Traffic Impact Study



Virgin, Utah

June 3, 2022

UT22-2229

LICENSED PROFESSIONAL ENGINEER
NO. 295699
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HALES
06/03/2022
STATE OF UTAH

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EXECUTIVE SUMMARY

This study addresses the traffic impacts associated with the proposed Quail Mesa development located in Virgin, Utah. The development is located south of Entrada Drive.

The purpose of this traffic impact study is to analyze traffic operations at key intersections for existing (2022) conditions, with and without the proposed project, and to recommend mitigation measures as needed. The weekday and Saturday morning peak hour level of service (LOS) results are shown in Table ES-1. Recommended storage lengths are shown in Table ES-2. A site plan of the project is provided in Appendix A.

Table ES-1: Peak Hour Level of Service Results

	Intersection	Level of Service			
		Existing (2022)			
		Background		Plus Project	
		AM	SAT	AM	SAT
1	Camino Del Rio / S.R. 9	a	b	a	b
2	Camino Del Rio / Entrada Drive	a	a	a	a
3	Red Hill Lane / Entrada Drive	-	-	a	a

1. Intersection LOS values represent the overall intersection average for roundabout, signalized, and all-way stop-controlled (AWSC) intersections (uppercase letter) and the worst movement for all other unsignalized intersections (lowercase letter)

2. AM = Weekday Morning Peak Hour, SAT = Saturday Morning Peak Hour

Source: Hales Engineering, June 2022

Table ES-2: Recommended Storage Length

	Intersection	Recommended Storage Lengths (feet)															
		Northbound				Southbound				Eastbound				Westbound			
		LT		RT		LT		RT		LT		RT		LT		RT	
		E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
3	Red Hill Lane / Entrada Drive	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-

1. Storage lengths are based on 2022 95th percentile queue lengths and do not include required deceleration / taper distances

2. E = Existing storage length (approximate), if applicable; P = proposed storage length for new turn lanes or changes to existing turn lanes, if applica

Source: Hales Engineering, June 2022

SUMMARY OF KEY FINDINGS & RECOMMENDATIONS

Project Conditions

- The Qual Mesa development will consist of 35 single-family residential units. An additional 10 units from the Zion's Edge development were also included for a total of 45 single-family dwelling units.
- The project is anticipated to generate approximately 486 weekday daily trips, including 38 trips in the weekday morning peak hour. It is anticipated that the project will generate 50 trips in the Saturday morning peak hour
- Based on the 2021 International Fire Code, two accesses onto Entrada Drive may be needed unless each dwelling unit is equipped with an approved sprinkler system. It is the responsibility of the developer to work with the Town of Virgin to ensure that these requirements are met.
- The width of the Camino Del Rio bridge appears to be compliant with the 26-feet requirement in the 2021 International Fire Code.
- Hales Engineering recommends a westbound-to-southbound left-turn lane at the Red Hill Lane / Entrada Drive intersection.
- Based on UDOT R930-6 requirements, a northbound-to-eastbound right-turn acceleration lane may be required at the Camino Del Rio / S.R. 9. It appears that this is warranted with existing background volumes.

2022	Background	Plus Project
Assumptions	• Trips added to roadway network from the Rio de Sion development	• None
Findings	• Acceptable LOS at all study intersections.	• Acceptable LOS at all study intersections.
Mitigations	• None	• None

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I. INTRODUCTION

A. Purpose

This study addresses the traffic impacts associated with the proposed Quail Mesa development located in Virgin, Utah. The proposed project is located south of Entrada Drive. Figure 1 shows a vicinity map of the proposed development.

The purpose of this traffic impact study is to analyze traffic operations at key intersections for existing (2022) conditions, with and without the proposed project, and to recommend mitigation measures as needed.

Figure 1: Vicinity map showing the project location in Virgin, Utah

B. Scope

The study area was defined based on conversations with the development team. This study was scoped to evaluate the traffic operational performance impacts of the project on the following intersections:

- Camino Del Rio / S.R. 9
- Camino Del Rio / Entrada Drive
- Red Hill Lane / Entrada Drive

C. Analysis Methodology

Level of service (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and F the worst. Table 1 provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for both signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM), 7th Edition, 2022 methodology was used in this study to remain consistent with "state-of-the-practice" professional standards. This methodology has different quantitative evaluations for signalized and unsignalized intersections. For signalized, roundabout, and all-way stop-controlled (AWSC) intersections, the LOS is provided for the overall intersection (weighted average of all approach delays). For all other unsignalized intersections, LOS is reported based on the worst movement.

Using Synchro/SimTraffic software, which follow the HCM methodology, the peak hour LOS was computed for each study intersection. Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. The detailed LOS reports are provided in Appendix C. Hales Engineering also calculated the 95th percentile queue lengths for the study intersections using SimTraffic. The detailed queue length reports are provided in Appendix D.

D. Level of Service Standards

For the purposes of this study, a minimum acceptable intersection performance for each of the study intersections was set at LOS D. If levels of service E or F conditions exist, an explanation and/or mitigation measures will be presented. A LOS D threshold is consistent with "state-of-the-practice" traffic engineering principles for urbanized areas.

Table 1: Level of Service Description

LOS		Description of Traffic Conditions	Average Delay (seconds/vehicle)	
			Signalized Intersections	Unsignalized Intersections
A		Free Flow / Insignificant Delay	≤ 10	≤ 10
B		Stable Operations / Minimum Delays	> 10 to 20	> 10 to 15
C		Stable Operations / Acceptable Delays	> 20 to 35	> 15 to 25
D		Approaching Unstable Flows / Tolerable Delays	> 35 to 55	> 25 to 35
E		Unstable Operations / Significant Delays	> 55 to 80	> 35 to 50
F		Forced Flows / Unpredictable Flows / Excessive Delays	> 80	> 50

Source: Hales Engineering Descriptions, based on the *Highway Capacity Manual* (HCM), 7th Edition, 2022 Methodology (Transportation Research Board)

II. EXISTING (2022) BACKGROUND CONDITIONS

A. Purpose

The purpose of the background analysis is to study the intersections and roadways during the peak travel periods of the day with background traffic and geometric conditions. Through this analysis, background traffic operational deficiencies can be identified, and potential mitigation measures recommended. This analysis provides a baseline condition that may be compared to the build conditions to identify the impacts of the development.

B. Roadway System

The primary roadways that will provide access to the project site are described below:

Entrada Drive – is a private road with one lane in each direction. The speed limit is assumed to be 25 mph in the study area.

C. Traffic Volumes

Weekday morning (7:00 to 9:00 a.m.) and Saturday morning (10:00 to 12:00 p.m.) peak period traffic counts were performed at the following intersections:

- Camino Del Rio / S.R. 9
- Camino Del Rio / Entrada Drive

The counts were performed on Thursday, May 19, 2022, and on Saturday, May 21, 2022. The weekday morning peak hour was determined to be between 7:15 and 8:15 a.m., and the Saturday peak hour was determined to be between 10:30 and 11:30 a.m. The Saturday peak hour volumes were approximately 30% higher than the weekday morning peak hour volumes. Both the weekday and Saturday morning peak hour volumes were used in the analysis. Detailed count data are included in Appendix B.

Hales Engineering made seasonal adjustments to the observed traffic volumes. Monthly traffic volume data were obtained from a nearby UDOT automatic traffic recorder (ATR) on S.R. 9 (ATR #402). In recent years, traffic volumes in May have been equal to approximately 105% of average traffic volumes. The observed traffic volumes were left unadjusted to remain conservative in this analysis.

Trips the Rio de Sion development were included in the background volumes for this report. The development is partially constructed, and an additional 48 units were assumed to be built prior to the opening of Quail Mesa. These trips were distributed and assigned to the roadway network.

Figure 2 shows the existing weekday and Saturday morning peak hour volumes as well as intersection geometry at the study intersections.

Virgin - Quail Mesa TIS
Existing (2022) Background

Morning Peak Hour
Figure 2a

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06/02/2022


S.R. 9
Kolob Terrace Road
S.R. 9
Camino Del Rio
Entrada Drive
27
3
20
11
190
21
25
14
23
24
3
22
38
1
0
0
30
0

D. Level of Service Analysis

Hales Engineering determined that all study intersections are currently operating at acceptable levels of service during the weekday and Saturday morning peak hours, as shown in Table 2. These results serve as a baseline condition for the impact analysis of the proposed development during existing (2022) conditions.

E. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing was observed during the weekday and Saturday morning peak hours.

F. Mitigation Measures

No mitigation measures are recommended.

Table 2: Existing (2022) Background Peak Hour LOS

Intersection		LOS (Sec. Delay / Veh.) / Movement[1]	
Description	Control	Morning Peak	Saturday Peak
Camino Del Rio / S.R. 9	NB/SB Stop	a (8.1) / SBL	b (11.0) / NBT
Camino Del Rio / Entrada Drive	SB Yield	a (1.9) / EBL	a (1.8) / EBL

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, June 2022

III. PROJECT CONDITIONS

A. Purpose

The project conditions discussion explains the type and intensity of development. This provides the basis for trip generation, distribution, and assignment of project trips to the surrounding study intersections defined in Chapter I.

B. Project Description

The proposed Quail Mesa development is located south of Entrada Drive. The development will consist of 35 single-family residential units. Adjacent to Quail Mesa lies the Zion's Edge subdivision which is currently planned as 10 single-family residential units. Concept plans for both proposed developments are provided in Appendix A. The proposed land use for the development has been identified in Table 3.

Table 3: Project Land Uses

Land Use	Intensity
Single-family detached housing	45 Units

C. Trip Generation

Trip generation for the development was calculated using trip generation rates published in the Institute of Transportation Engineers (ITE), *Trip Generation*, 11th Edition, 2021. Trip generation for the proposed project is included in Table 4.

The total trip generation for the development is as follows:

- Weekday Daily: 486
- Weekday Morning Peak Hour Trips: 38
- Saturday Morning Peak Hour Trips: 50

D. Trip Distribution and Assignment

Project traffic is assigned to the roadway network based on the type of trip and the proximity of project access points to major streets, high population densities, and regional trip attractions. Existing travel patterns observed during data collection also provide helpful guidance to establishing these distribution percentages, especially near the site. The resulting distribution of project generated trips during the weekday and Saturday morning peak hour is shown in Table 5.

Table 4: Trip Generation

Trip Generation Virgin - Quail Mesa and Zion's Edge								
Land Use[1]	# of Units	Unit Type	Trip Generation			New Trips		
			Total	% In	% Out	In	Out	Total
Weekday Daily								
Single-Family Detached Housing (210)	45	DU	486	50%	50%	243	243	486
AM Peak Hour								
Single-Family Detached Housing (210)	45	DU	38	26%	74%	10	28	38
SAT Peak Hour								
Single-Family Detached Housing (210)	45	DU	50	63%	37%	32	18	50

1. Land Use Code from the Institute of Transportation Engineers (ITE) *Trip Generation* ,11th Edition,2021.

SOURCE: Hales Engineering, June 2022

Table 5: Trip Distribution

Direction	% To/From Project
East	55%
West	45%

These trip distribution assumptions were used to assign the weekday and Saturday morning peak hour trip generation at the study intersections to create trip assignment for the proposed development. Trip assignment for the development is shown in Figure 3.

Virgin - Quail Mesa TIS
Trip Assignment

Morning Peak Hour
Figure 3a

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Virgin - Quail Mesa TIS
Trip Assignment

Saturday Peak Hour
Figure 3b

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06/03/2022

E. Access

The proposed access for the site will be gained at the following locations:

Entrada Drive:

- Red Hill Lane will be located approximately 1,200 feet west of the Camino Del Rio / Entrada Drive intersection. It will access the project on the south side of Entrada Drive. It is anticipated that the access will be stop-controlled.

Entrada Drive is a private road. Based on the Town of Virgin municipal code and the 2021 International Fire Code Appendix D, two fire access roads may be required unless each of the dwelling units are equipped with an approved automatic sprinkler system. It is the responsibility of the developer to work with staff from the Town of Virgin to ensure that these requirements are being met.

The 2021 International Fire Code also states that fire access roads must have a minimum width of 26 feet, exclusive of shoulders. It appears that this requirement is met on the Camino Del Rio Bridge near the property, which measures 28 feet in width.

F. Auxiliary Lanes

Auxiliary lanes are deceleration (ingress) or acceleration (egress) turn lanes that provide for safe turning movements that have less impact on through traffic. These lanes are sometimes needed at accesses or roadway intersections if right- or left-turn volumes are high enough.

Deceleration (ingress) lanes are generally needed when there are at least 50 right-turn vehicles or 25 left-turn vehicles in an hour. These guidelines were used for the City roadways in the study area.

UDOT Administrative Rule R930-6 outlines minimum peak hour turn volumes to warrant auxiliary lanes on UDOT roadways. The following are the minimum requirements for these lanes on S.R. 9:

- Left-turn Deceleration (Ingress): 5 left-turn vehicles per hour
- Left-turn Acceleration (Egress): Is there a safety benefit?
- Right-turn Deceleration (Ingress): 10 right-turn vehicles per hour
- Right-turn Acceleration (Egress): 10 right-turn vehicles per hour

Based on these guidelines and the anticipated project traffic, a northbound-to-eastbound right-turn acceleration lane may be required by UDOT at the Camino Del Rio / S.R. 9 intersection based on existing volumes. However, this lane was not assumed in the analysis.

It is recommended that the following deceleration (ingress) lane be installed:

- Red Hill Lane / Entrada Drive: westbound-to-southbound left-turn

IV. EXISTING (2022) PLUS PROJECT CONDITIONS

A. Purpose

The purpose of the existing (2022) plus project analysis is to study the intersections and roadways during the peak travel periods of the day for existing background traffic and geometric conditions plus the net trips generated by the proposed development. This scenario provides valuable insight into the potential impacts of the proposed project on background traffic conditions.

B. Traffic Volumes

Hales Engineering added the project trips discussed in Chapter III to the existing (2022) background traffic volumes to predict turning movement volumes for existing (2022) plus project conditions. Existing (2022) plus project weekday and Saturday morning peak hour turning movement volumes are shown in Figure 4.

C. Level of Service Analysis

Hales Engineering determined that all intersections are anticipated to operate at acceptable levels of service during the weekday and Saturday morning peak hours with project traffic added, as shown in Table 6.

D. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing is anticipated during the weekday and Saturday morning peak hours.

E. Mitigation Measures

No mitigation measures are recommended.

F. Recommended Storage Lengths

Hales Engineering determined recommended storage lengths based on the 95th percentile queue lengths given in the existing (2022) plus project scenario. These storage lengths do not include the taper length. Recommended storage lengths for the study intersections are shown in Table 7. Intersections shown in Table 7 include new intersections and existing intersections that have recommended storage length changes.

Virgin - Quail Mesa TIS
Existing (2022) Plus Project

Morning Peak Hour
Figure 4a

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06/03/2022

Virgin - Quail Mesa TIS
Existing (2022) Plus Project

Saturday Peak Hour
Figure 4b

Hales Engineering
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801.766.4343
06/03/2022

Table 6: Existing (2022) Plus Project Peak Hour LOS

Intersection		LOS (Sec. Delay / Veh.) / Movement[1]	
Description	Control	Morning Peak	Saturday Peak
Camino Del Rio / S.R. 9	NB/SB Stop	a (8.2) / NBL	b (12.8) / SBT
Camino Del Rio / Entrada Drive	SB Yield	a (2.0) / SWL	a (1.8) / EBL
Red Hill Lane / Entrada Drive	NB Stop	a (2.9) / NBR	a (2.9) / NBR

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, June 2022

Table 7: Recommended Storage Lengths

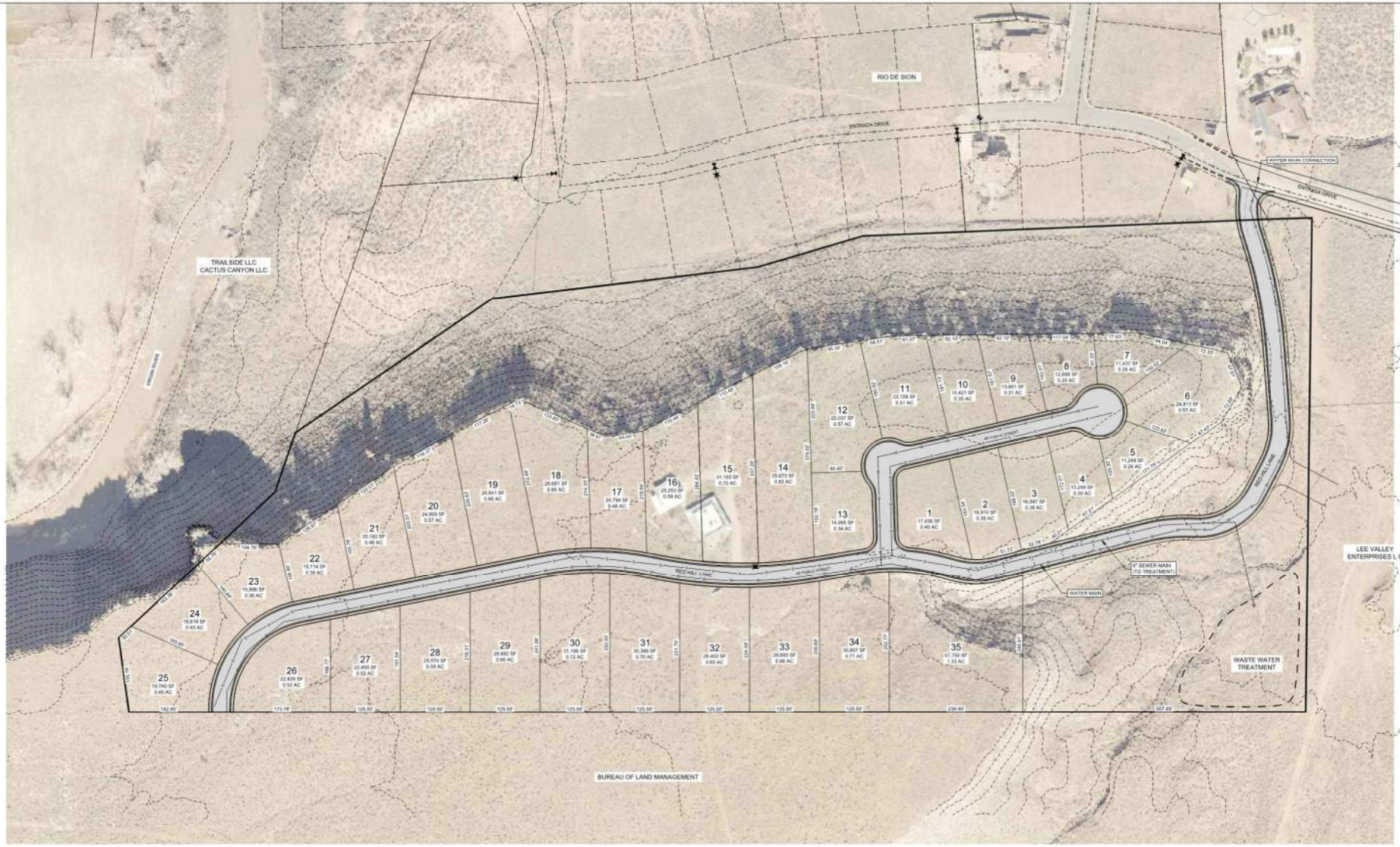
Intersection		Recommended Storage Lengths (feet)															
		Northbound				Southbound				Eastbound				Westbound			
		LT		RT		LT		RT		LT		RT		LT		RT	
		E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
3	Red Hill Lane / Entrada Drive	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-

1. Storage lengths are based on 2022 95th percentile queue lengths and do not include required deceleration / taper distances
2. E = Existing storage length (approximate), if applicable; P = proposed storage length for new turn lanes or changes to existing turn lanes, if applica

Source: Hales Engineering, June 2022

APPENDIX A

Site Plan

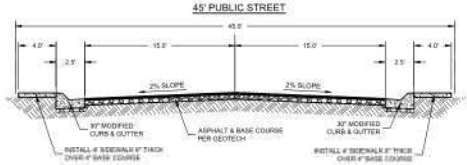


LEGEND

- EXISTING WATER VALVE
- EXISTING CATCH BASIN
- EXISTING SEWER MANHOLE
- EXISTING TRANSFORMER
- EXISTING ELECTRICAL VAULT
- EXISTING POWER METER
- EXISTING WATER METER
- EXISTING WATER LINE
- EXISTING SEWER LINE
- PROPOSED WATER LINE
- PROPOSED SEWER LINE
- BOUNDARY LINE
- EASEMENT LINE
- ROADWAY CENTERLINE

SCALE: 1" = 80'
(SCALE ONLY VALID FOR 24" x 36" PAPER)

45' PUBLIC STREET



SITE INFORMATION
PARCEL # V-2-1-26-4421
AREA = 35.2± ACRES
ZONE = RR (RURAL RES)
UNITS = 35
DENSITY = 1.0 UNITS/ ACRE

OWNER
HIDDEN CANYON MESA LLC
1026 N 1540 E
LEHI, UT 84043
JEFF.LEE@TREESRANCH2ION.COM

CONCEPTUAL PLAN
QUAIL MESA

LOCATED IN
SECTION 26, TOWNSHIP 41 SOUTH, RANGE 12 WEST,
SALT LAKE BASE AND MERIDIAN

1453 S. DIXIE DRIVE, SUITE 150
ST. GEORGE, UT 84770
435.986.0700
CivilScience

CONCEPTUAL PLAN
QUAIL MESA
LOCATED IN VIRGIN, UTAH

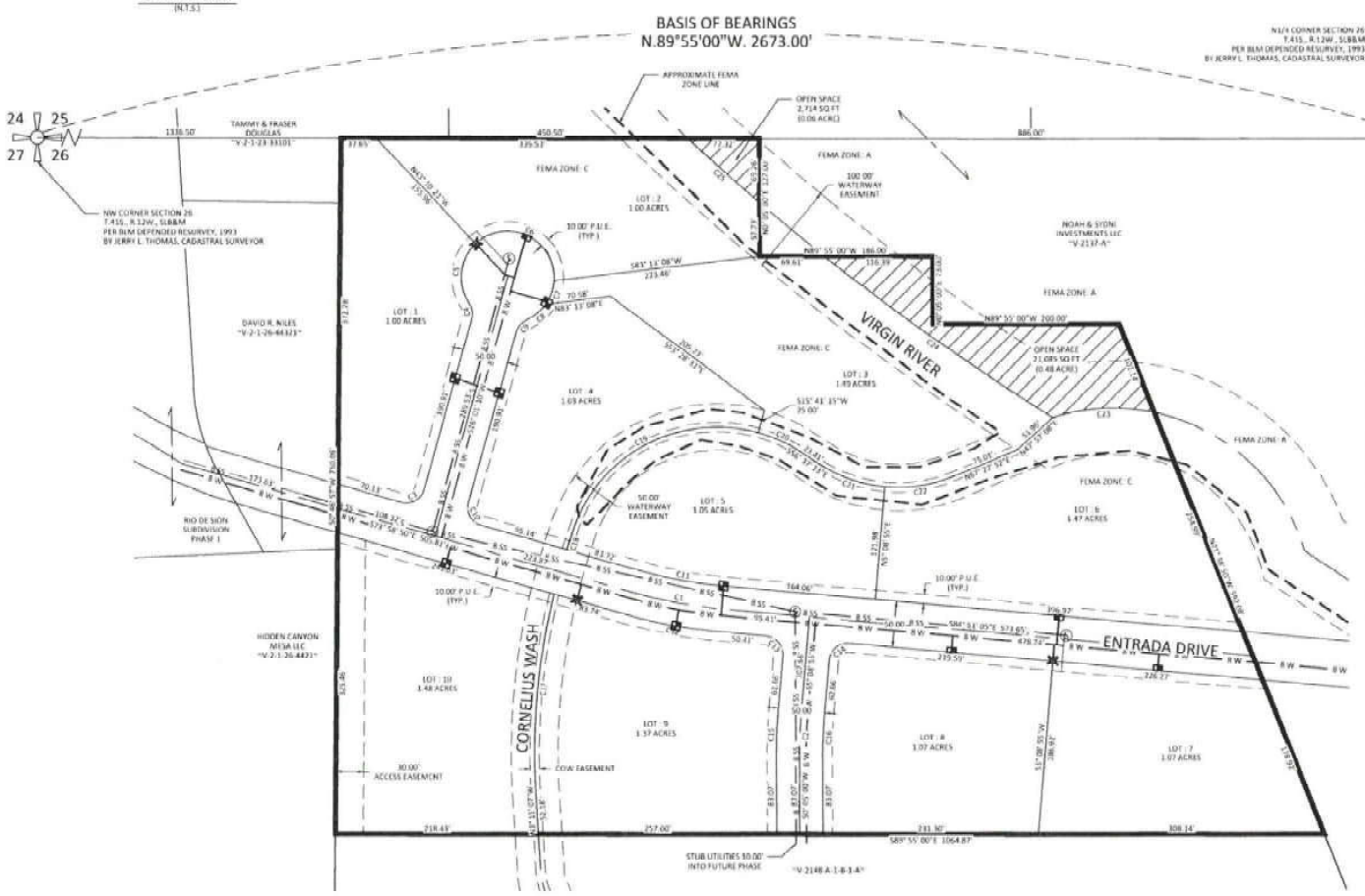
PROJ. # 21070.19
DRAWN BY: SLW
DATE: 4/28/2022
CHECKED BY: KCS
SCALE OF SHEET
HOR SCALE: 1" = 80'

SHEET 1 OF 1

PRELIMINARY SITE PLAN FOR

ZION'S EDGE SUBDIVISION
WITHIN SECTION 26, T. 41 S., R. 12 W., SLB&M
VIRGIN CITY, WASHINGTON COUNTY, UTAH

VICINITY MAP
(N.T.S.)



Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	98.87	500.00	10°52'15"	S79° 24' 57"E	98.72
C2	44.20	500.00	5°03'55"	S2° 36' 58"W	44.19
C3	31.42	20.00	90°00'00"	N61° 01' 10"E	28.28
C4	17.45	20.00	49°59'41"	N8° 58' 41"W	16.90
C5	70.51	50.00	80°48'10"	N6° 25' 34"E	64.81
C6	120.00	50.00	137°30'31"	S64° 25' 05"E	93.20
C7	27.20	50.00	31°10'04"	S39° 55' 12"W	26.86
C8	26.83	50.00	30°30'37"	S50° 45' 33"W	26.51
C9	17.45	20.00	49°59'41"	S41° 01' 01"W	16.90
C10	31.42	20.00	90°00'00"	S28° 58' 50"E	28.28
C11	90.12	475.00	10°52'15"	N79° 24' 57"W	89.99
C12	99.61	525.00	10°52'15"	S79° 24' 57"E	99.46
C13	31.42	20.00	90°00'00"	S39° 51' 05"E	28.28
C14	31.42	20.00	90°00'00"	S50° 08' 55"W	28.28
C15	46.41	525.00	5°03'55"	S2° 36' 58"W	46.40
C16	41.99	475.00	5°03'55"	S2° 36' 58"W	41.98
C17	208.76	726.43	16°27'55"	N5° 50' 22"E	208.04
C18	16.66	726.43	1°18'51"	N18° 40' 25"E	16.66
C19	254.79	165.13	88°24'20"	N61° 29' 05"E	230.26
C20	50.99	165.13	17°41'33"	S65° 27' 59"E	50.79
C21	74.80	153.29	27°57'28"	S70° 35' 56"E	74.06
C22	74.80	153.29	27°57'28"	N81° 26' 36"E	74.06
C23	110.90	214.51	29°37'27"	N87° 12' 35"E	109.38
C24	300.29	2551.57	6°44'35"	N54° 37' 40"W	300.11
C25	103.81	2551.57	2°19'53"	N48° 03' 41"W	103.81

NOTES:

1. OWNERS INFORMATION:
   1.1. NAME: JOHN STAPLES (QUESTIONS)
   1.2. PHONE: (435) 619-0164
   1.3. NAME: LANDON WATTS (BILLING & OTHER)
   1.4. PHONE: (801) 830-1554
2. PROPERTY INFORMATION:
   2.1. ZONE: RR (RURAL RESIDENTIAL DISTRICT)
   2.2. AREA: 14.4 ACRES
   2.3. APN: V-2148-A-1-B-1-A
3. FLOOD ZONE A & C PER FEMA FIRM PANEL 49053C0860G DATED APRIL 2, 2009.
4. SEWER MAIN TO CONNECT WITH EXISTING SEWER LINE IN ENTRADA DRIVE.
5. WATER MAIN TO CONNECT WITH EXISTING WATER MAIN IN ENTRADA DRIVE.
6. CONFIRM UTILITIES IN ENTRADA DRIVE PRIOR TO CIVIL DESIGN.

PLATT & PLATT, INC
CONSULTING CIVIL ENGINEERS & LAND SURVEYORS
195 N. 100 E
CEDAR CITY, UT 84720
TEL: (435) 586-6151
FAX: (435) 586-8567
EMAIL: PLATT@INFOWEST.COM

REVISIONS		

PRELIMINARY SITE PLAN FOR
ZION'S EDGE SUBDIVISION
WITHIN SECTION 26, T. 41 S., R. 12 W., SLB&M
VIRGIN CITY, WASHINGTON COUNTY, UTAH

ROBERT B. PLATT 164659 — PROFESSIONAL LAND SURVEYOR — STATE OF UTAH

DRAWN BY: H.R. HULET
CHECKED BY: R.B. PLATT
DATE: Apr 25, 2022
SCALE: 1" = 60'

APPENDIX B

Turning Movement Counts

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

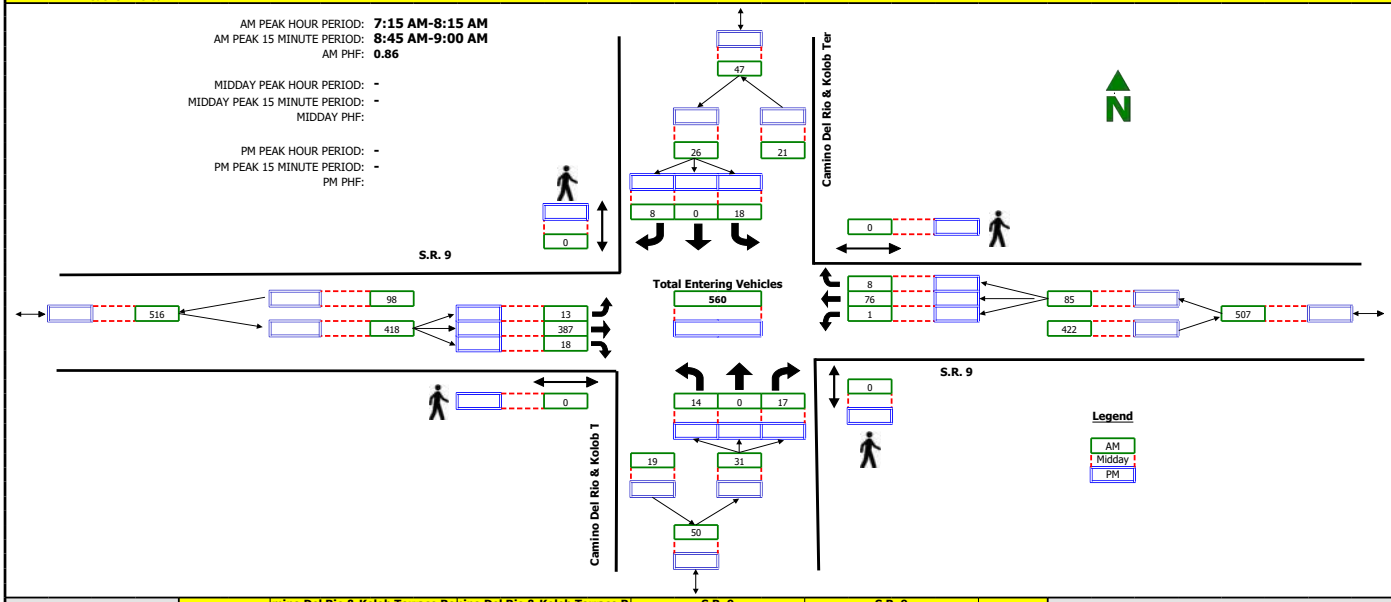
Intersection: Camino Del Rio & Kolob Terrace Road / S.R. 9
North/South: Camino Del Rio & Kolob Terrace Road
East/West: S.R. 9
Jurisdiction: Virgin
Project Title: Virgin Quail Mesa TIS
Project No: UT22-2229
Weather: Clear

Date: 5-19-22, Thu
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 402
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: **7:15 AM-8:15 AM**
AM PEAK 15 MINUTE PERIOD: **8:45 AM-9:00 AM**
AM PHF: **0.86**

MIDDAY PEAK HOUR PERIOD: -
MIDDAY PEAK 15 MINUTE PERIOD: -
MIDDAY PHF:

PM PEAK HOUR PERIOD: -
PM PEAK 15 MINUTE PERIOD: -
PM PHF:



RAW COUNT SUMMARIES	mino Del Rio & Kolob Terrace Ro Northbound				nino Del Rio & Kolob Terrace R Southbound				S.R. 9 Eastbound				S.R. 9 Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	

AM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00 - 7:15	2	0	5	1	3	0	0	0	4	77	2	0	0	11	4	1	108
7:15 - 7:30	2	0	2	0	5	0	3	0	3	93	4	0	0	8	2	0	122
7:30 - 7:45	6	0	4	0	2	0	2	0	2	109	8	0	0	22	3	0	158
7:45 - 8:00	2	0	6	0	6	0	1	0	4	103	1	0	1	24	0	0	148
8:00 - 8:15	4	0	5	0	5	0	2	0	4	82	5	0	0	22	3	0	132
8:15 - 8:30	0	1	5	0	2	0	1	0	3	78	5	0	0	21	4	0	120
8:30 - 8:45	0	1	3	0	8	0	3	0	0	79	6	0	0	29	2	0	131
8:45 - 9:00	4	0	4	0	3	0	1	0	5	97	6	0	1	37	4	0	162

MIDDAY PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

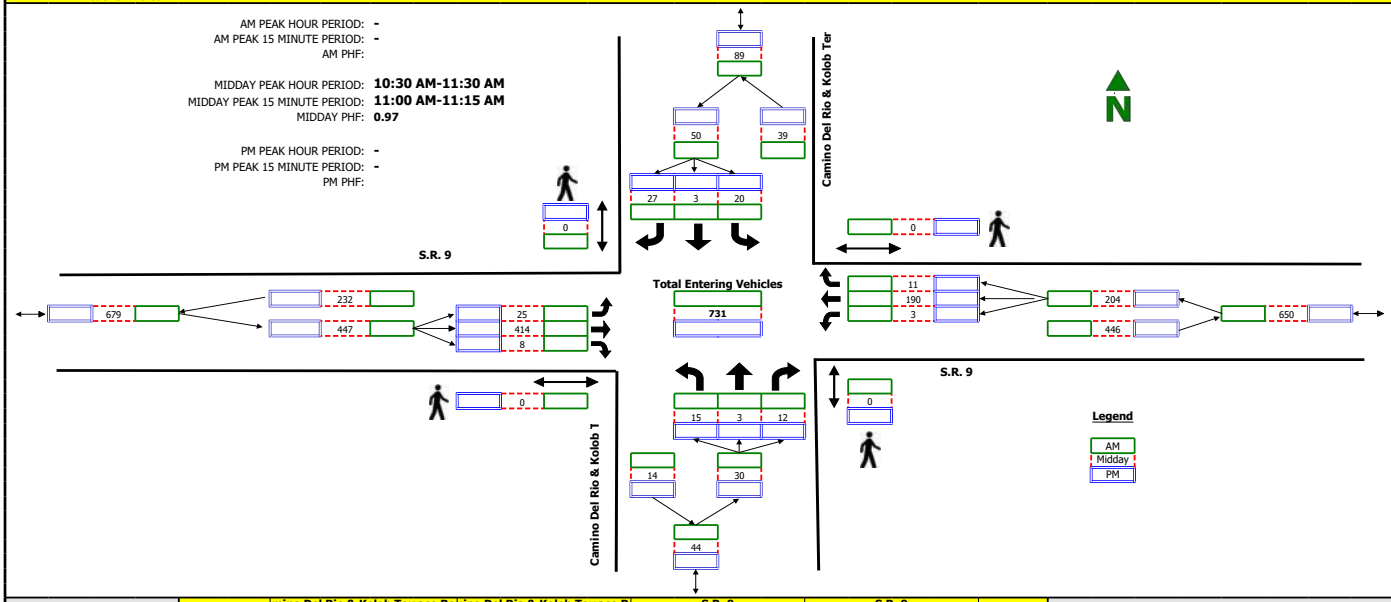
Intersection: Camino Del Rio & Kolob Terrace Road / S.R. 9
North/South: Camino Del Rio & Kolob Terrace Road
East/West: S.R. 9
Jurisdiction: Virgin
Project Title: Virgin Quail Mesa TIS
Project No: UT22-2229
Weather: Clear

Date: 5-21-22, Sat
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 402
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: -
AM PEAK 15 MINUTE PERIOD: -
AM PHF:

MIDDAY PEAK HOUR PERIOD: **10:30 AM-11:30 AM**
MIDDAY PEAK 15 MINUTE PERIOD: **11:00 AM-11:15 AM**
MIDDAY PHF: **0.97**

PM PEAK HOUR PERIOD: -
PM PEAK 15 MINUTE PERIOD: -
PM PHF:



RAW COUNT SUMMARIES	mino Del Rio & Kolob Terrace Ro				nino Del Rio & Kolob Terrace R				S.R. 9				S.R. 9				TOTAL
	Northbound				Southbound				Eastbound				Westbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	

AM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00 - 7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 - 7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MIDDAY PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	1	1	9	0	5	1	3	0	7	84	2	0	0	31	4	0	148
10:15 - 10:30	4	0	7	0	4	0	13	0	5	99	1	0	1	29	5	0	168
10:30 - 10:45	2	2	4	0	8	0	9	0	3	99	2	0	2	54	3	0	188
10:45 - 11:00	6	1	3	0	5	0	6	0	7	105	2	0	0	33	3	0	171
11:00 - 11:15	4	0	2	0	6	1	0	0	9	103	4	0	0	58	2	0	189
11:15 - 11:30	3	0	3	0	1	2	12	0	6	107	0	0	1	45	3	0	183
11:30 - 11:45	7	0	2	0	7	0	8	0	8	83	1	0	1	46	3	0	166
11:45 - 12:00	0	1	1	0	8	0	6	0	12	70	1	0	0	56	1	0	156
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

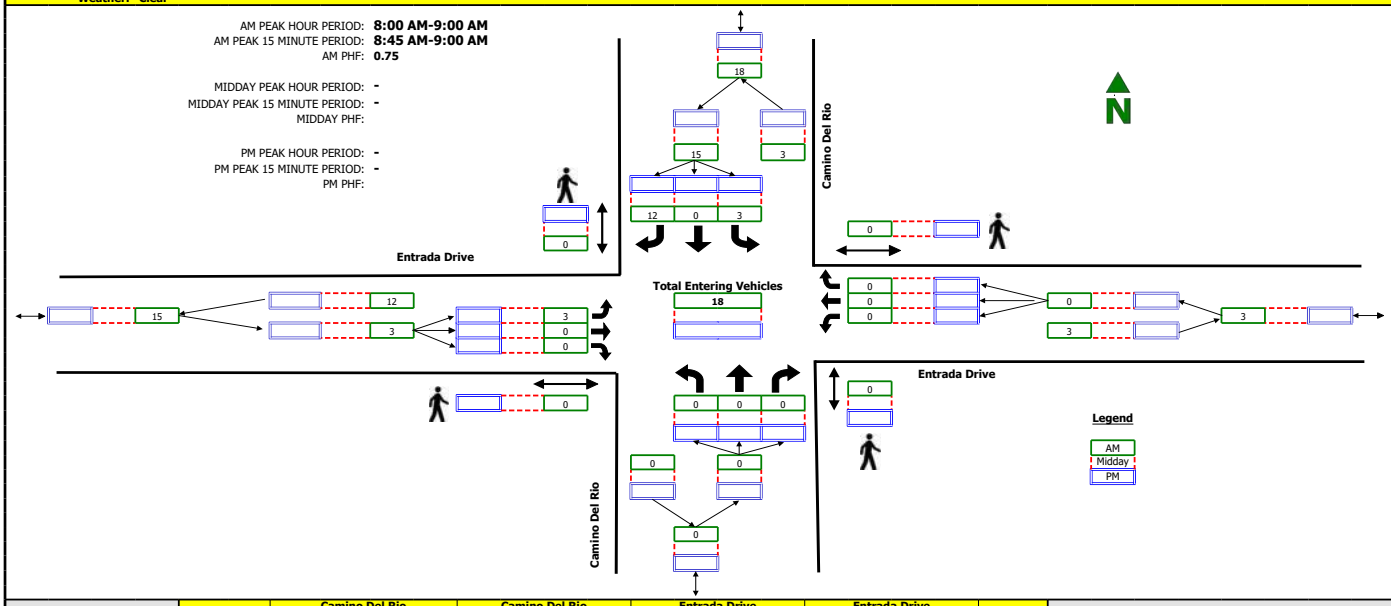
Intersection: Camino Del Rio / Entrada Drive
North/South: Camino Del Rio
East/West: Entrada Drive
Jurisdiction: Virgin
Project Title: Virgin Quail Mesa TIS
Project No: UT22-2229
Weather: Clear

Date: 5-19-22, Thu
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 402
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: **8:00 AM-9:00 AM**
AM PEAK 15 MINUTE PERIOD: **8:45 AM-9:00 AM**
AM PHF: **0.75**

MIDDAY PEAK HOUR PERIOD: -
MIDDAY PEAK 15 MINUTE PERIOD: -
MIDDAY PHF:

PM PEAK HOUR PERIOD: -
PM PEAK 15 MINUTE PERIOD: -
PM PHF:



RAW COUNT SUMMARIES	Camino Del Rio Northbound				Camino Del Rio Southbound				Entrada Drive Eastbound				Entrada Drive Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	

AM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00 - 7:15	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	1	3
7:15 - 7:30	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3
7:30 - 7:45	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	4
7:45 - 8:00	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3
8:00 - 8:15	0	0	0	0	1	0	2	0	1	0	0	0	0	0	0	0	4
8:15 - 8:30	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5
8:30 - 8:45	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3
8:45 - 9:00	0	0	0	0	0	0	4	0	2	0	0	0	0	0	0	0	6

MIDDAY PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

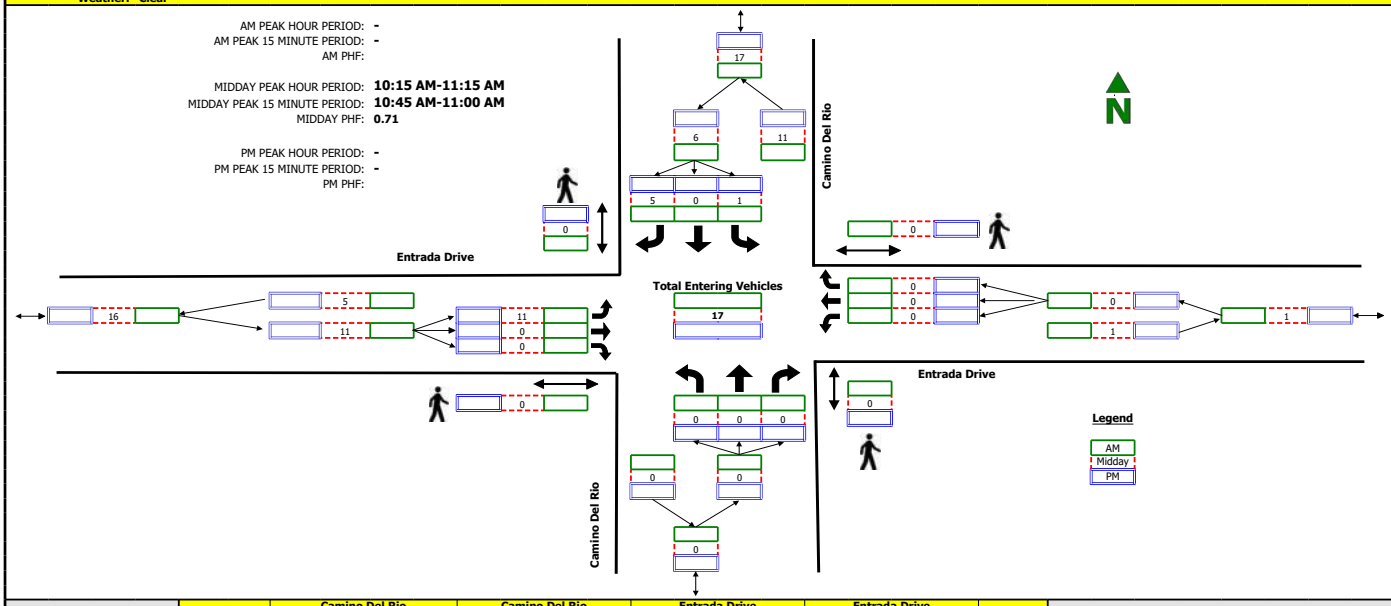
Intersection: Camino Del Rio / Entrada Drive
North/South: Camino Del Rio
East/West: Entrada Drive
Jurisdiction: Virgin
Project Title: Virgin Quail Mesa TIS
Project No: UT22-2229
Weather: Clear

Date: 5-21-22, Sat
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 402
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: -
AM PEAK 15 MINUTE PERIOD: -
AM PHF:

MIDDAY PEAK HOUR PERIOD: **10:15 AM-11:15 AM**
MIDDAY PEAK 15 MINUTE PERIOD: **10:45 AM-11:00 AM**
MIDDAY PHF: **0.71**

PM PEAK HOUR PERIOD: -
PM PEAK 15 MINUTE PERIOD: -
PM PHF:



RAW COUNT SUMMARIES	Camino Del Rio Northbound				Camino Del Rio Southbound				Entrada Drive Eastbound				Entrada Drive Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00 - 7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 - 7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MIDDAY PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	1	4
10:15 - 10:30	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
10:30 - 10:45	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
10:45 - 11:00	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	6
11:00 - 11:15	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	5
11:15 - 11:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
11:30 - 11:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
11:45 - 12:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00 - 16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX C

LOS Results

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Virgin - Quail Mesa TIS
Analysis Period: *Existing (2022) Background*
Time Period: *Morning Peak Hour* **Project #:** *UT22-2229*

Intersection: Camino Del Rio/Kolob Terrace Road & S.R. 9
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	28	26	94	7.4	*A*
	R	33	34	104	4.5	*A*
	Subtotal	61	60	98	5.8	*A*
SB	***L***	***18***	***18***	***100***	***8.1***	***A***
	R	8	9	109	3.0	*A*
	Subtotal	26	27	104	6.4	*A*
EB	L	13	16	125	0.5	*A*
	T	387	386	100	1.1	*A*
	R	23	23	99	0.1	*A*
	Subtotal	423	425	100	1.0	*A*
WB	L	6	6	96	1.5	*A*
	T	76	76	100	0.4	*A*
	R	8	9	109	0.0	*A*
	Subtotal	90	91	101	0.4	*A*
Total		600	603	100	1.6	*A*

Intersection: Entrada Drive & Camino Del Rio
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
EB	***L***	***33***	***34***	***104***	***1.9***	***A***
	Subtotal	33	34	103	1.9	*A*
SW	L	3	3	100	1.9	*A*
	T	4	4	94	0.0	*A*
	R	22	22	99	0.4	*A*
	Subtotal	29	29	100	0.5	*A*
Total		62	63	101	1.3	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Virgin - Quail Mesa TIS
Analysis Period: *Existing (2022) Background*
Time Period: *Saturday Peak Hour* **Project #:** *UT22-2229*

Intersection: Camino Del Rio/Kolob Terrace Road & S.R. 9
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	24	23	95	8.8	A
	T	***3***	***4***	***133***	***11.0***	***B***
	R	22	22	99	4.7	A
	Subtotal	49	49	100	7.1	A
SB	L	20	19	94	9.4	A
	T	3	4	133	8.9	A
	R	27	29	106	3.5	A
	Subtotal	50	52	104	6.1	A
EB	L	25	23	91	1.1	A
	T	414	412	99	1.0	A
	R	23	27	116	0.1	A
	Subtotal	462	462	100	1.0	A
WB	L	21	19	89	1.9	A
	T	190	195	103	0.8	A
	R	11	11	100	0.1	A
	Subtotal	222	225	101	0.9	A
Total		785	788	100	1.6	A

Intersection: Entrada Drive & Camino Del Rio
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
EB	***L***	***30***	***29***	***96***	***1.8***	***A***
	Subtotal	30	29	97	1.8	A
SW	L	1	0	0		
	T	8	9	109	0.0	A
	R	38	41	107	0.5	A
	Subtotal	47	50	106	0.4	A
Total		78	79	102	1.0	A

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Virgin - Quail Mesa TIS
Analysis Period: *Existing (2022) Plus Project*
Time Period: *Morning Peak Hour* **Project #:** *UT22-2229*

Intersection: Camino Del Rio/Kolob Terrace Road & S.R. 9
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	***L***	***41***	***41***	***99***	***8.2***	***A***
	R	48	51	107	5.3	*A*
	Subtotal	89	92	103	6.6	*A*
SB	L	18	16	89	8.0	*A*
	R	8	8	97	3.0	*A*
	Subtotal	26	24	92	6.3	*A*
EB	L	13	12	94	0.6	*A*
	T	387	386	100	1.2	*A*
	R	28	31	112	0.1	*A*
	Subtotal	428	429	100	1.1	*A*
WB	L	11	12	112	2.0	*A*
	T	76	78	103	0.5	*A*
	R	8	10	121	0.0	*A*
	Subtotal	95	100	105	0.6	*A*
Total		638	645	101	2.0	*A*

Intersection: Entrada Drive & Camino Del Rio
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
EB	L	61	60	98	1.8	*A*
	Subtotal	61	60	98	1.8	*A*
SW	***L***	***3***	***3***	***100***	***2.0***	***A***
	T	4	4	107	0.0	*A*
	R	32	35	110	0.5	*A*
	Subtotal	39	42	108	0.6	*A*
Total		100	102	102	1.3	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Virgin - Quail Mesa TIS**
Analysis Period: ***Existing (2022) Plus Project***
Time Period: ***Morning Peak Hour*** **Project #:** ***UT22-2229***

Intersection: **Red Hill Lane & Entrada Drive**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	***R***	***22***	***21***	***94***	***2.9***	***A***
	Subtotal	22	21	95	2.9	*A*
EB	T	33	32	98	0.0	*A*
	Subtotal	33	32	97	0.0	*A*
WB	L	8	8	97	1.9	*A*
	T	24	27	115	0.0	*A*
	Subtotal	32	35	109	0.4	*A*
Total		87	88	101	0.9	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Virgin - Quail Mesa TIS**
Analysis Period: ***Existing (2022) Plus Project***
Time Period: ***Saturday Peak Hour*** **Project #:** ***UT22-2229***

Intersection: **Camino Del Rio/Kolob Terrace Road & S.R. 9**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	32	33	102	10.8	*B*
	T	3	4	133	11.2	*B*
	R	32	32	99	5.4	*A*
	Subtotal	67	69	103	8.3	*A*
SB	L	20	21	104	11.4	*B*
	T	***3***	***4***	***133***	***12.8***	***B***
	R	27	26	95	4.6	*A*
	Subtotal	50	51	102	8.0	*A*
EB	L	25	23	91	1.2	*A*
	T	414	415	100	1.2	*A*
	R	37	41	110	0.2	*A*
	Subtotal	476	479	101	1.1	*A*
WB	L	39	41	104	2.2	*A*
	T	190	190	100	0.9	*A*
	R	11	12	109	0.2	*A*
	Subtotal	240	243	101	1.1	*A*
Total		835	842	101	2.1	*A*

Intersection: **Entrada Drive & Camino Del Rio**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
EB	***L***	***48***	***50***	***104***	***1.8***	***A***
	T	1	2	200	0.0	*A*
	Subtotal	49	52	106	1.7	*A*
SW	T	10	10	103	0.0	*A*
	R	70	76	109	0.6	*A*
	Subtotal	80	86	108	0.5	*A*
Total		129	138	107	1.0	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Virgin - Quail Mesa TIS**
Analysis Period: ***Existing (2022) Plus Project***
Time Period: ***Saturday Peak Hour*** **Project #:** ***UT22-2229***

Intersection: **Red Hill Lane & Entrada Drive**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	***R***	***15***	***13***	***87***	***2.9***	***A***
	Subtotal	15	13	87	2.9	*A*
EB	T	30	34	112	0.0	*A*
	Subtotal	30	34	113	0.0	*A*
WB	L	25	28	111	1.8	*A*
	T	44	49	110	0.1	*A*
	Subtotal	69	77	112	0.7	*A*
Total		115	124	108	0.7	*A*

APPENDIX D

95th Percentile Queue Length Reports

SimTraffic Queueing Report

Project: Virgin - Quail Mesa TIS

Analysis: Existing (2022) Background

Time Period: Morning Peak Hour

95th Percentile Queue Length (feet) - Rounded Up to Nearest Multiple of 25 ft

HALES ENGINEERING
innovative transportation solutions

Project #: UT22-2229

Intersection	NB	SB	SW	EB	WB
	LTR	LTR	LR	L	L
01: Camino Del Rio/Kolob Terrace Road & S.R. 9	50	50			
02: Entrada Drive & Camino Del Rio					

SimTraffic Queueing Report

Project: Virgin - Quail Mesa TIS

Analysis: Existing (2022) Background

Time Period: Saturday Peak Hour

95th Percentile Queue Length (feet) - Rounded Up to Nearest Multiple of 25 ft

HALES ENGINEERING
innovative transportation solutions

Project #: UT22-2229

Intersection	NB	SB	EB	WB
	LTR	LTR	L	L
01: Camino Del Rio/Kolob Terrace Road & S.R. 9	50	50		

SimTraffic Queueing Report

Project: Virgin - Quail Mesa TIS

Analysis: Existing (2022) Plus Project

Time Period: Morning Peak Hour

95th Percentile Queue Length (feet) - Rounded Up to Nearest Multiple of 25 ft

HALES ENGINEERING
innovative transportation solutions

Project #: UT22-2229

Intersection	NB		SB	SW	EB		WB
	LR	LTR	LTR	LR	L	T	L
01: Camino Del Rio/Kolob Terrace Road & S.R. 9		75	50				
02: Entrada Drive & Camino Del Rio							
03: Red Hill Lane & Entrada Drive	50						

SimTraffic Queueing Report

Project: Virgin - Quail Mesa TIS

Analysis: Existing (2022) Plus Project

Time Period: Saturday Peak Hour

95th Percentile Queue Length (feet) - Rounded Up to Nearest Multiple of 25 ft

HALES ENGINEERING
innovative transportation solutions

Project #: UT22-2229

Intersection	NB		SB	EB		WB
	LR	LTR	LTR	L	R	L
01: Camino Del Rio/Kolob Terrace Road & S.R. 9		75	50			50
03: Red Hill Lane & Entrada Drive	50					