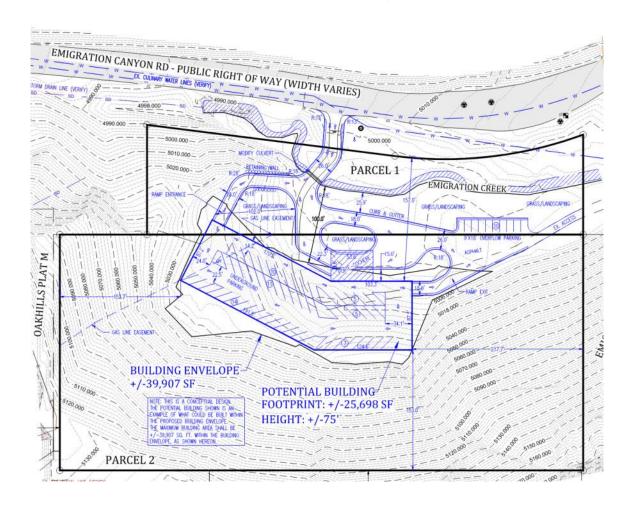


## 3150 Emigration Canyon Road

**Traffic Study** 



## Salt Lake City, Utah

April 9, 2024 UT24-2720





#### **EXECUTIVE SUMMARY**

This study addresses the traffic impacts associated with the proposed 3150 Emigration Canyon Road development located in Salt Lake City, Utah.

The purpose of this traffic impact study is to analyze traffic operations at key intersections for existing (2024) and future (2029) conditions with and without the proposed project and to recommend mitigation measures as needed. The morning and evening peak hour level of service (LOS) results are shown in Table ES-1. 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 (2024)			Future (2029)				
		Background Plus Project		Background I		Plus F	Plus Project		
			PM	AM	PM	AM	PM	AM	PM
1	Crestview Drive / Emigration Canyon Road	а	а	а	а	а	а	а	а
2	Project Access / Emigration Canyon Road	-		а	а		:•:	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)

Source: Hales Engineering, March 2024

#### **SUMMARY OF KEY FINDINGS & RECOMMENDATIONS**

#### **Project Conditions**

- The development may consist of a residential building with up to 199 units.
- The project is anticipated to generate up to approximately 904 weekday daily trips, including 76 trips in the morning peak hour, and 78 trips in the evening peak hour.
- Inadequate sight distance presents a safety concern for vehicles turning out of the site. Options to safely accommodate vehicles may include:
  - Removing vegetation where applicable
  - o Installing a northbound to westbound left-turn acceleration lane at the project access
  - o Installing advance warning signs to advise of oncoming vehicles

2024	Background	Plus Project
Findings	Acceptable LOS	Acceptable LOS
2029	Background	Plus Project
Findings	Acceptable LOS	Acceptable LOS



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### Salt Lake City – 3150 Emigration Canyon Road

Traffic Study

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#### I. INTRODUCTION

#### A. Purpose

This study addresses the traffic impacts associated with the proposed 3150 Emigration Canyon Road development located in Salt Lake City, Utah. 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 (2024) and future (2029) conditions with and without the proposed project and to recommend mitigation measures as needed.

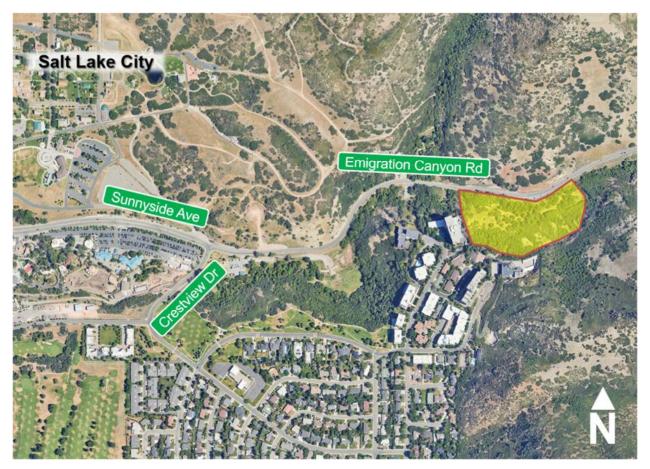


Figure 1: Vicinity map showing the project location in Salt Lake City, Utah

#### 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:



- Crestview Drive / Emigration Canyon Road
- Project Access / Emigration Canyon Road

#### 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), 7<sup>th</sup> 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 D. Hales Engineering also calculated the 95<sup>th</sup> percentile queue lengths for the study intersections using SimTraffic. The detailed queue length reports are provided in Appendix E.

Many of the figures in this report are printouts of the Synchro model. These figures are not meant to be a design exhibit for exact lane striping and design, due to the limitations of the Synchro software. Instead, the purpose of these figures is to show assumed peak hour turning movement volumes and the conceptual travel lane configuration of the study roadway network.

#### 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	Average Delay (seconds/vehicle)		
	LOS	Traffic Conditions	Signalized Intersections	Unsignalized Intersections	
Α		Free Flow / Insignificant Delay	≤ 10	≤ 10	
В		Stable Operations / Minimum Delays	> 10 to 20	> 10 to 15	
С		Stable Operations / Acceptable Delays	> 20 to 35	> 15 to 25	
D	0,00	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), 7<sup>th</sup> Edition, 2022 Methodology (Transportation Research Board)



#### II. EXISTING (2024) 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:

<u>Emigration Canyon Road</u> – is a city-maintained roadway which is classified by the Salt Lake City Transportation Master Plan (February 2012) as an arterial. The roadway has one travel lane in each direction. The posted speed limit is 40 mph in the study area.

#### C. Crash Data Summary

At the Intersection of Crestview Drive / Emigration Canyon Road within the past five years, A northbound left turning vehicle collided with a bicycle, resulting in a suspected minor injury. On another occasion, two vehicles traveling northbound on Crestview collided in a front to rear crash, resulting in property damage only. Before the five-year window, six additional crashes have occurred involving bicycles and vehicles, all resulting in suspected minor injuries.

At the proposed intersection of Project Access / Emigration Canyon Road within the last five years, one northbound vehicle traveling above the speed limit ran off the road and collided with a snowbank, resulting in property damage only. Before the five-year window, an additional vehicle traveling westbound at night crossed the centerline and rolled over off the road, resulting in a suspected minor injury. A detailed summary of the crash data can be found in Appendix B.



#### D. Traffic Volumes

Weekday morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak period traffic counts were performed at the following intersections:

Crestview Drive / Emigration Canyon Road

The counts were performed on Thursday, March 7, 2024. The morning peak hour was determined to be between 7:45 and 8:45 a.m., and the evening peak hour was determined to be between 4:30 and 5:30 p.m. The evening peak hour volumes were approximately 11% higher than the morning peak hour volumes. Both the morning and evening peak hour volumes were used in the analysis. Detailed count data are included in Appendix C.

Hales Engineering considered seasonal adjustments to the observed traffic volumes. Monthly traffic volume data were obtained from a nearby UDOT automatic traffic recorder (ATR) on S.R 186 (ATR #332). In recent years, traffic volumes in March have been equal to approximately 103% of average traffic volumes. Therefore, the observed traffic volumes were left unadjusted as a conservative measure.

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

#### E. Level of Service Analysis

Hales Engineering determined that all study intersections are currently operating at acceptable levels of service during the morning and evening peak hours, as shown in Table 2. These results serve as a baseline condition for the impact analysis of the proposed development during existing (2024) conditions.

Table 2: Existing (2024) Background Peak Hour LOS

Intersection	LOS (Sec. Delay / Veh.) / Movement <sup>1</sup>		
Description	Control	Morning Peak	Evening Peak
Crestview Drive / Emigration Canyon Road	NB Stop	a (7.0) / NBL	a (6.4) / NBL

<sup>1.</sup> Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.

Source: Hales Engineering, April 2024

#### F. Queuing Analysis

Hales Engineering calculated the 95<sup>th</sup> percentile queue lengths for each of the study intersections. No significant queueing was observed during the morning and evening peak hours.

<sup>2.</sup> Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

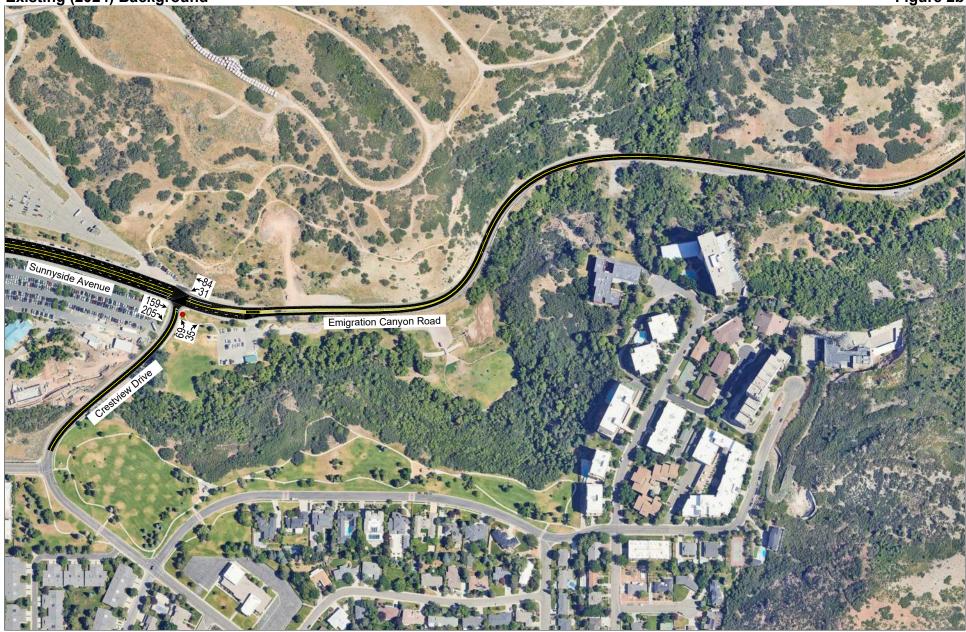


#### G. Mitigation Measures

No mitigation measures are recommended.



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#### 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 development is located at 3150 Emigration Canyon Road. The development may consist of a residential building of up to 199 units. A concept plan for the proposed development is provided in Appendix A.

#### C. Trip Generation

Trip generation for the development was calculated using trip generation rates published in the Institute of Transportation Engineers (ITE), *Trip Generation*, 11<sup>th</sup> Edition, 2021. Trip generation for the proposed project is included in Table 3.

The total trip generation for the development is as follows:

Daily Trips: 904
Morning Peak Hour Trips: 76
Evening Peak Hour Trips: 78

**Table 3: Trip Generation** 

	# of	# of Unit Units Type	Unit Trip Generation		New Trips			
Land Use <sup>1</sup>	Units		Total	% In	% Out	In	Out	Total
Weekday Daily								
Multifamily Housing (Mid-Rise) (221)	199	DU	904	50%	50%	452	452	904
AM Peak Hour								
Multifamily Housing (Mid-Rise) (221)	199	DU	76	23%	77%	17	59	76
PM Peak Hour	W							
Multifamily Housing (Mid-Rise) (221)	199	DU	78	61%	39%	48	30	78

#### 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 morning and evening peak hour is shown in Table 4.

**Table 4: Trip Distribution** 

Direction	% To/From Project
East	80%
West	5%
South	15%

These trip distribution assumptions were used to assign the morning and evening 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.

#### E. Access

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

#### **Emigration Canyon Road:**

 Project Access will be located approximately 0.5 miles east of the Crestview Drive / Emigration Canyon Road intersection. It will access the project on the south side of Emigration Canyon Road. It is anticipated that the access will be stop-controlled on the northbound approach.

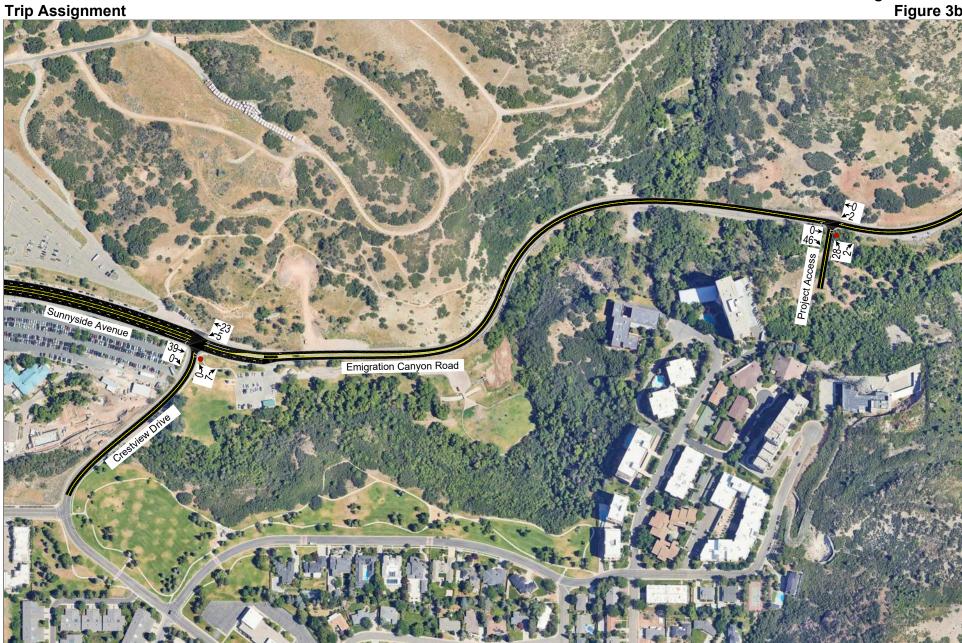
#### F. Auxiliary Lanes

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. Based on these guidelines and the anticipated project traffic, no auxiliary lanes are recommended based on volume alone.



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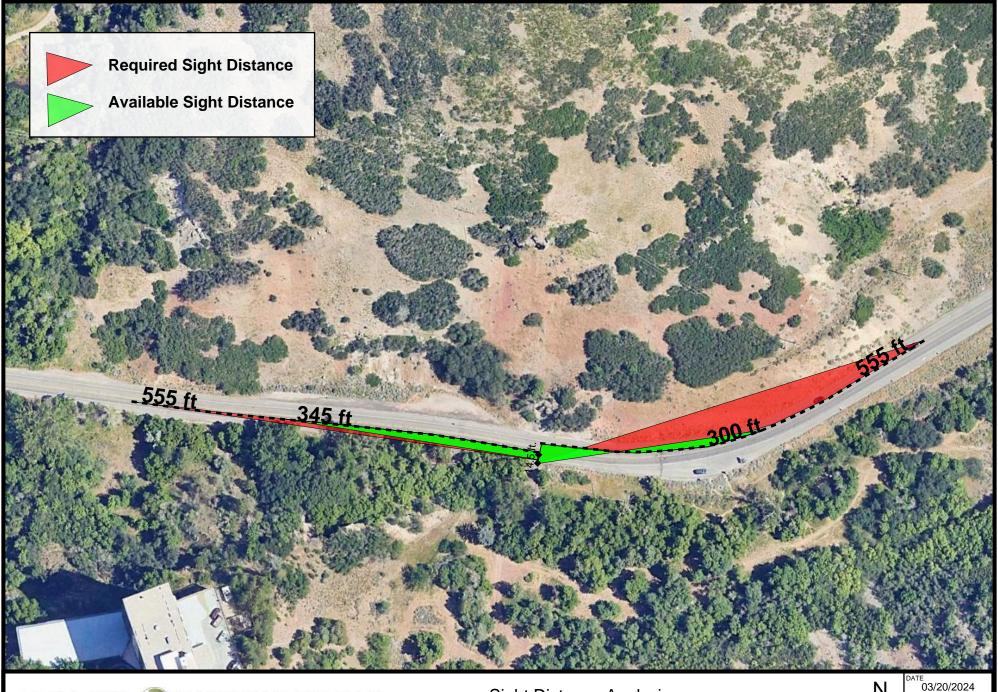


#### G. Sight Distance Analysis

Hales Engineering measured the intersection sight distances for right-turn and left-turn maneuvers for vehicles accessing Emigration Canyon Road from the Project Access. Speed data were also collected on Emigration Canyon Road, which showed an 85<sup>th</sup> percentile speed of 46 mph. For a design vehicle speed of 50 mph, the required sight distance per AASHTO standards for these maneuvers is 555 feet. For right-turn maneuvers, the available sight distance is 345 feet. However, the sight distance could likely be increased by removal of existing tree branches and other vegetation that cause reduced visibility. For left-turn maneuvers, the available sight distance is 300 feet. Due to the horizontal curve in the road and the steep cut slope obstructing the sight distance, it is unlikely that the required sight distance for left-turn maneuvers can be achieved at the proposed location. Figure 4 shows the required sight distance compared to the available sight distance.

To mitigate the risk of inadequate sight distance, it is recommended that options be explored to increase driveway safety on Emigration Road. To safely accommodate left turning vehicles onto Emigration Canyon Road, a northbound-to westbound left-turn acceleration lane would need to be added. Alternatively, advanced warning signs with appropriate detection could be added to the area to advise westbound oncoming vehicles when a vehicle is present on the northbound approach or to advice northbound vehicles when westbound vehicles are approaching the blind spot of the curve.

Hales Engineering recommends these mitigation measures be considered in cooperation with Salt Lake City staff.



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SLC - 3150 Emigration Canyon Road TIS



UT24-2720

Figure 4



#### IV. EXISTING (2024) PLUS PROJECT CONDITIONS

#### A. Purpose

The purpose of the existing (2024) 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 (2024) background traffic volumes to predict turning movement volumes for existing (2024) plus project conditions. Existing (2024) plus project morning and evening peak hour turning movement volumes are shown in Figure 5.

#### C. Level of Service Analysis

Hales Engineering determined that all intersections are anticipated to operate at acceptable levels of service during the morning and evening peak hours with project traffic added, as shown in Table 5.

Table 5: Existing (2024) Plus Project Peak Hour LOS

Intersection	LOS (Sec. Delay / Veh.) / Movement <sup>1</sup>			
Description	Control	Morning Peak	Evening Peak	
Crestview Drive / Emigration Canyon Road	NB Stop	a (6.2) / NBL	a (6.4) / NBL	
Project Access / Emigration Canyon Road	NB Stop	a (5.1) / NBL	a (5.3) / NBL	

<sup>1.</sup> Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.

Source: Hales Engineering, April 2024

#### D. Queuing Analysis

Hales Engineering calculated the 95<sup>th</sup> percentile queue lengths for each of the study intersections. No significant queueing is anticipated during the morning and evening peak hours.

#### E. Mitigation Measures

No mitigation measures are recommended.

<sup>2.</sup> Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections



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#### V. FUTURE (2029) BACKGROUND CONDITIONS

#### A. Purpose

The purpose of the future (2029) background analysis is to study the intersections and roadways during the peak travel periods of the day for future background traffic and geometric conditions. Through this analysis, future background traffic operational deficiencies can be identified, and potential mitigation measures recommended.

#### B. Roadway Network

According to the Wasatch Front Regional Council (WFRC) Regional Transportation Plan, there are no projects planned before 2029 in the study area. Therefore, no changes were made to the roadway network for the future (2029) analysis.

#### C. Traffic Volumes

Hales Engineering obtained future (2029) forecasted volumes from the WFRC / Mountainland Association of Governments (MAG) travel demand model. Peak period turning movement counts were estimated using National Cooperative Highway Research Program (NCHRP) 255 methodologies which utilize existing peak period turn volumes and future average weekday daily traffic (AWDT) volumes to project the future turn volumes at the major intersections. Future (2029) morning and evening peak hour turning movement volumes are shown in Figure 6.

#### D. Level of Service Analysis

Hales Engineering determined that all study intersections are anticipated to operate at acceptable levels of service during the morning and evening peak hours in future (2029) background conditions, as shown in Table 6. These results serve as a baseline condition for the impact analysis of the proposed development for future (2029) conditions.

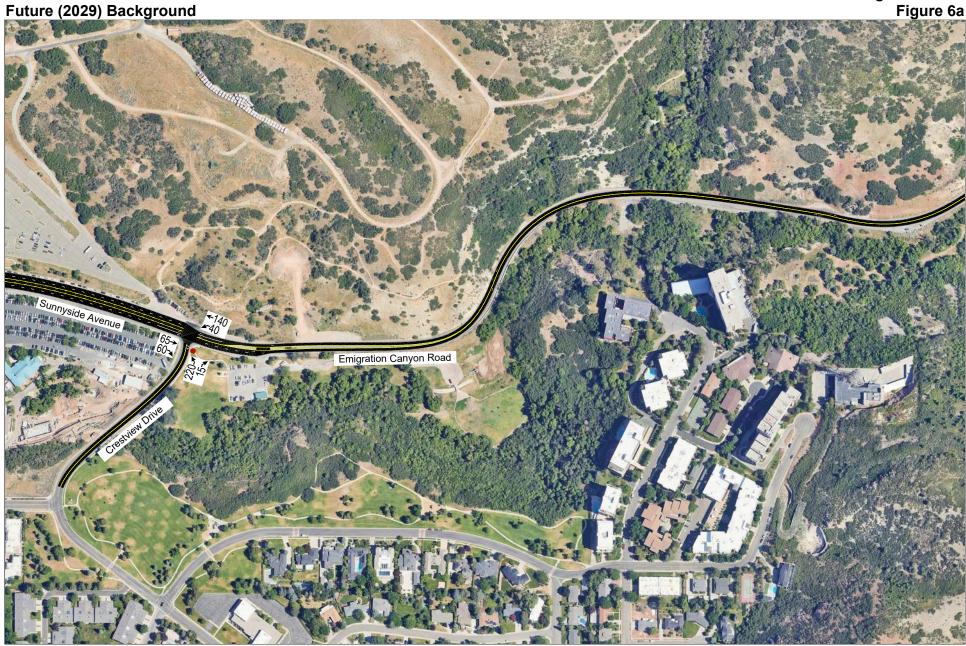
Table 6: Future (2029) Background Peak Hour LOS

Intersection	LOS (Sec. Delay / \	Veh.) / Movement¹	
Description	Control	Morning Peak	Evening Peak
Crestview Drive / Emigration Canyon Road	NB Stop	a (7.1) / NBL	a (7.0) / NBL

<sup>1.</sup> Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.

Source: Hales Engineering, April 2024

<sup>2.</sup> Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.



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**Evening Peak Hour** Figure 6b



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#### E. Queuing Analysis

Hales Engineering calculated the 95<sup>th</sup> percentile queue lengths for each of the study intersections. No significant queueing is anticipated during the morning and evening peak hours.

#### F. Mitigation Measures

No mitigation measures are recommended.



#### VI. FUTURE (2029) PLUS PROJECT CONDITIONS

#### A. Purpose

The purpose of the future (2029) plus project analysis is to study the intersections and roadways during the peak travel periods of the day for future 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 future background traffic conditions.

#### B. Traffic Volumes

Hales Engineering added the project trips discussed in Chapter III to the future (2029) background traffic volumes to predict turning movement volumes for future (2029) plus project conditions. Future (2029) plus project morning and evening peak hour turning movement volumes are shown in Figure 7.

#### C. Level of Service Analysis

Hales Engineering determined that all intersections are anticipated to operate at acceptable levels of service during the morning and evening peak hours in future (2029) plus project conditions, as shown in Table 7.

Table 7: Future (2029) Plus Project Peak Hour LOS

Intersection	LOS (Sec. Delay / Veh.) / Movement <sup>1</sup>			
Description	Control	Morning Peak	Evening Peak	
Crestview Drive / Emigration Canyon Road	NB Stop	a (8.1) / NBL	a (7.2) / NBL	
Project Access / Emigration Canyon Road	NB Stop	a (5.2) / NBL	a (5.3) / NBL	

<sup>1.</sup> Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.

Source: Hales Engineering, April 2024

#### D. Queuing Analysis

Hales Engineering calculated the 95<sup>th</sup> percentile queue lengths for each of the study intersections. No significant queueing is anticipated during the morning and evening peak hours.

#### E. Mitigation Measures

No mitigation measures are recommended.

<sup>2.</sup> Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections



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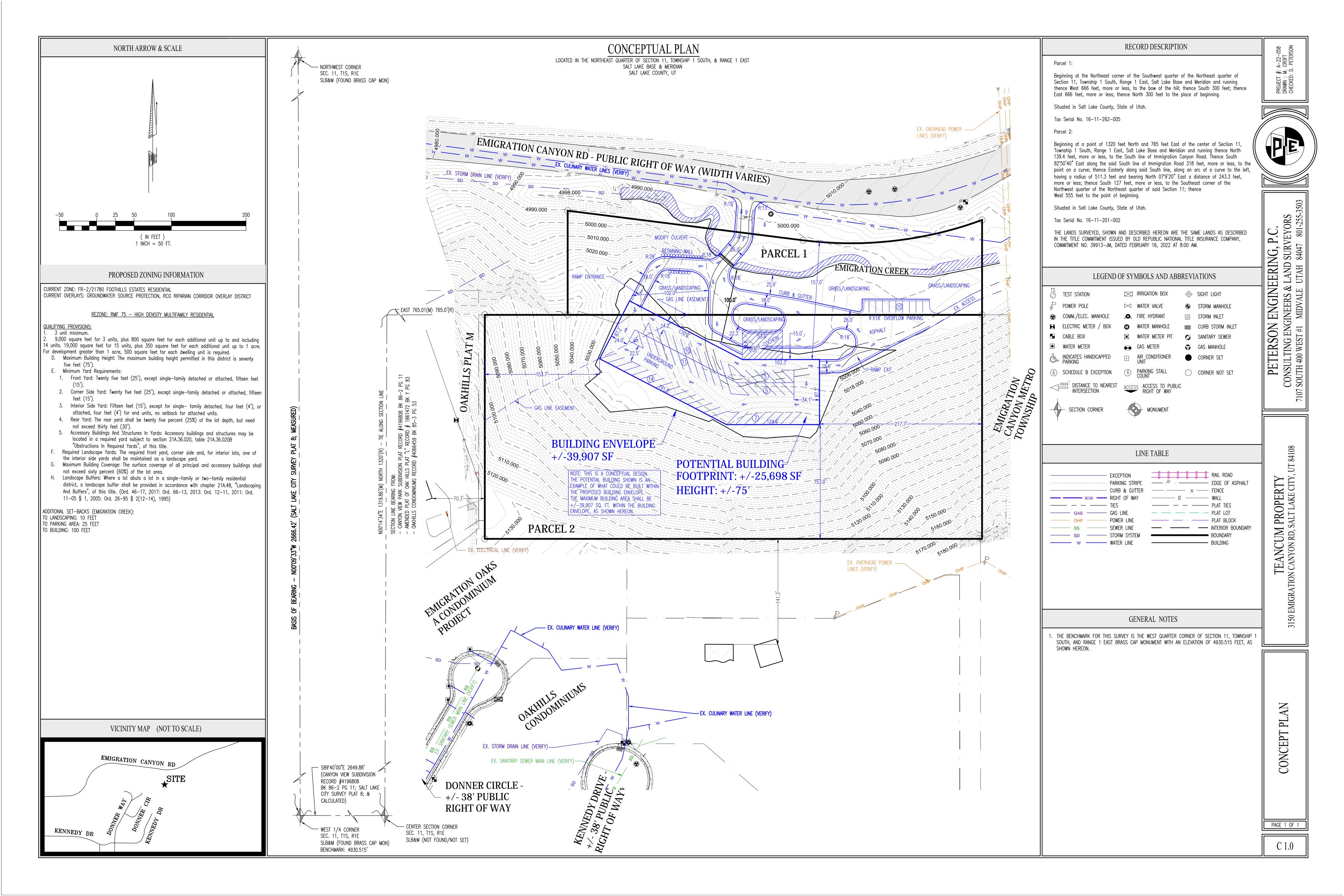


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# **APPENDIX A**

Site Plan





# **APPENDIX B**

Crash Data Summary

### Crestview Drive / Emigration Canyon Road

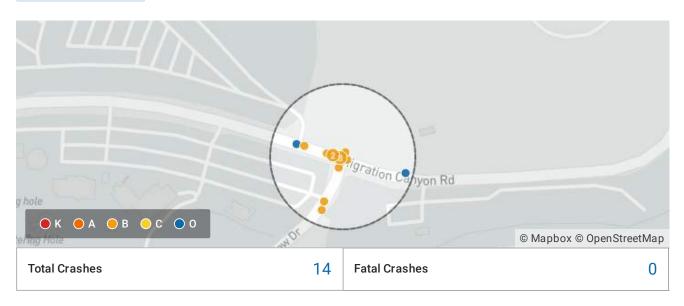
Created on March 25, 2024 Created by Cory Ward

Data extents: January 1, 2010 to March 23, 2024



#### **Applied Filters**

Shape: Circle 250 ft



UDOT Crash Summary		Crashes
Total Crashes	14	100.00%
Intersection Related	8	57.14%
Pedalcycle Involved	7	50.00%
Roadway Departure	2	14.29%
Motorcycle Involved	1	7.14%
Speed Related	1	7.14%
+ 7 more	0	0%
On all Visite d		0
Crash Verified		Crashes
True	14	100.00%
False	0	0.00%
		0 1
Crash Severity		Crashes
Suspected Minor Injury	10	71.43%
No injury/PDO	3	21.43%
Possible injury	1	7.14%

+ 2 more 0
------------

Injury Level		Peopl
No injury	26	70.279
Suspected Minor Injury	10	27.039
Possible injury	1	2.709
+ 3 more	0	09
Manner of Collision		Crashe
Not Applicable/Single Vehicle	10	71.439
Angle	2	14.299
Front to Rear	2	14.299
+ 8 more	0	0%
Crash Date Time (Year)		Crashe
2023	1	7.149
2021	2	14.299
2018	1	7.149
2017	1	7.149
2016	3	21.439
2013	1	7.149
2012	1	7.149
2011	4	28.579
+ 7 more	0	09
V1 & V2 Movement & Direction (Crash Level Only)		Crashe
Backing (Northbound) & Straight Ahead (Northbound)	1	7.149
Straight Ahead (Westbound) & Straight Ahead (Westbound)	1	7.149
Turning Left (Northbound) & Straight Ahead (Eastbound)	1	7.149
Turning Left (Southbound) & Turning Left (Westbound)	1	7.149
+ 996 more	0	09
Roadway Surface Condition		Crashe
Dry	12	85.719
Ice/Frost	1	7.149
Wet	1	7.149
+ 12 more	0	09
Weather Condition		Crashe

Clear	13	92.86%
Blowing Snow	1	7.14%
+ 9 more	0	0%
Most Harmful Event		Vehicle
Collision With Other Motor Vehicle in Transport	8	44.44%
Pedacycle	7	38.89%
Embankment	2	11.11%
Overturn/Rollover	1	5.56%
+ 51 more	0	0%
Light Condition		Crashes
Daylight	12	85.71%
Dark - Lighted	1	7.14%
Dark - Not Lighted	1	7.14%
+ 5 more	0	0%
Countermeasures		Crashes
Countermeasure: Active Transportation Improvement	7	50.00%
Countermeasure: Centerline Rumblestrips	1	7.14%
Countermeasure: Clear Zone Improvements	1	7.14%
Countermeasure: Horizontal Curve Improvements	1	7.14%
Countermeasure: Pave Or Widen Shoulder	1	7.14%
Countermeasure: Raised Median	1	7.14%
Countermeasure: Roundabout or Signal	1	7.14%
Countermeasure: Intersection Lighting Countermeasure: Left Turn Lane	0	0.00%
Countermeasure: Left Turn Phase Change Countermeasure: Median Barrier Countermeasure: Passing Lane		

### Project Access / Emigration Canyon Road

Created on March 25, 2024 Created by Cory Ward

Data extents: January 1, 2010 to March 23, 2024



#### **Applied Filters**

Shape: Circle 250 ft

2 crashes have been excluded (see end of report for more information)



UDOT Crash Summary		Crashes
Roadway Departure	2	100.00%
Speed Related	2	100.00%
Total Crashes	2	100.00%
+ 10 more	0	0%
Crash Verified		Crashes
True	2	100.00%
False	0	0.00%
Crash Severity		Crashes
No injury/PDO	1	50.00%
Suspected Minor Injury	1	50.00%
+ 3 more	0	0%

Injury Level People

#### Unable to display based on the applied filters

Manner of Collision		Crashes
Not Applicable/Single Vehicle	2	100.00%
+ 10 more	0	0%
Crash Date Time (Year)		Crashes
2020	1	50.00%
2014	1	50.00%
+ 13 more	0	0%
V1 & V2 Movement & Direction (Crash Level Only)		Crashes
+ 1000 more	0	0%
Roadway Surface Condition		Crashes
Dry	2	100.00%
+ 14 more	0	0%
Weather Condition		Crashes
Clear	2	100.00%
+ 10 more	0	0%
Most Harmful Event		Vehicle

#### Unable to display based on the applied filters

Light Condition	Crash
Dark - Not Lighted	1 50.0
Daylight	1 50.0
+ 6 more	0

Countermeasures		Crashes
Countermeasure: Centerline Rumblestrips	2	100.00%
Countermeasure: Clear Zone Improvements	2	100.00%
Countermeasure: Horizontal Curve Improvements	2	100.00%
Countermeasure: Active Transportation Improvement	0	0.00%
Countermeasure: Intersection Lighting		
Countermeasure: Left Turn Lane		
Countermeasure: Left Turn Phase Change		
Countermeasure: Median Barrier		
Countermeasure: Passing Lane		
Countermeasure: Pave Or Widen Shoulder		
Countermeasure: Raised Median		
Countermeasure: Right Turn Lane		
Countermeasure: Roundabout or Signal		
Countermeasure: Shoulder Barrier		
Countermeasure: Shoulder Rumblestrips		

#### 2 crashes have been excluded

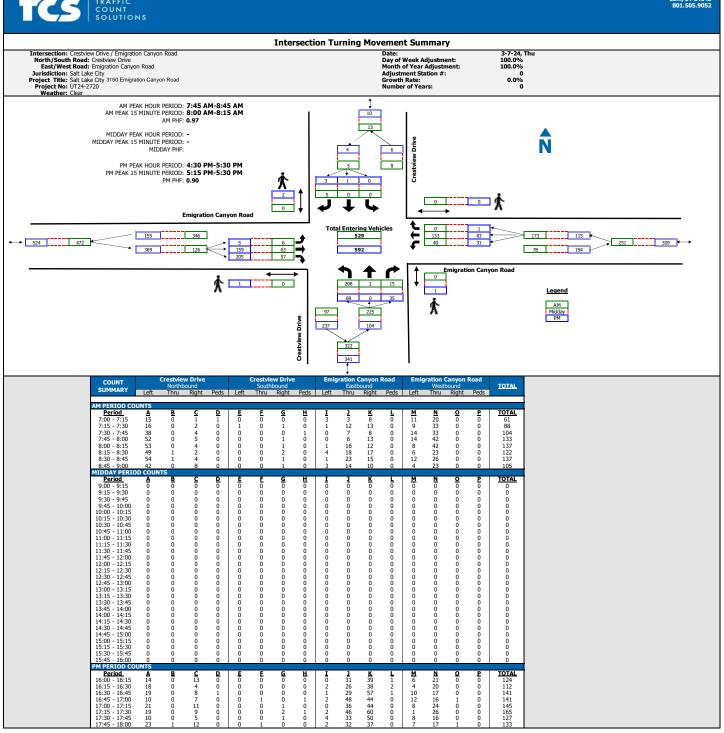
• 2 crashes because of Inaccurate Crash Location (10437113, 10437251)



# **APPENDIX C**

**Turning Movement Counts** 







# **APPENDIX D**

**LOS Results** 



Salt Lake City 3150 Emigration Canyon Road Project:

Existing (2024) Background Morning Peak Hour Analysis Period: Time Period:

Project #: UT24-2720

Crestview Drive & Sunnyside Avenue/Emigration Canyon Road Intersection: Type: Unsignalized

Annracah	Movement	Demand	Volume	e Served	Delay/Ve	h (sec)
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	210	205	98	7.0	Α
NB	R	15	13	87	5.3	Α
	Subtotal	225	218	97	6.9	Α
	Т	63	62	99	0.2	Α
EB	R	57	62	109	0.3	Α
	Subtotal	120	124	103	0.3	Α
	L	40	38	94	1.5	Α
WB	Т	133	132	99	0.4	Α
	Subtotal	173	170	98	0.6	Α
Total		518	512	99	3.3	Α



Salt Lake City 3150 Emigration Canyon Road Existing (2024) Background Evening Peak Hour Project # Project:

Analysis Period: Time Period:

Project #: *UT24-2720* 

Crestview Drive & Sunnyside Avenue/Emigration Canyon Road Intersection:

Type: Unsignalized

Approach	Mayamant	Demand	Volume	Served	Delay/Vel	h (sec)
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	69	64	93	6.4	Α
NB	R	35	33	94	3.4	Α
	Subtotal	104	97	93	5.4	Α
	Т	159	158	99	0.2	Α
EB	R	205	216	105	1.1	Α
	Subtotal	364	374	103	0.7	Α
	L	31	30	97	3.3	Α
WB	Т	84	84	100	0.2	Α
	Subtotal	115	114	99	1.0	Α
Total		583	585	100	1.6	Α



Project: Salt Lake City 3150 Emigration Canyon Road

Existing (2024) Plus Project Morning Peak Hour **Analysis Period:** 

Time Period: Project #: UT24-2720

Crestview Drive & Sunnyside Avenue/Emigration Canyon Road Intersection:

Type: Unsignalized

Annyonah	Movement	Demand	Volume	e Served	Delay/Veh (sec)	
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	210	213	101	6.2	Α
NB	R	18	19	104	4.3	Α
	Subtotal	228	232	102	6.0	Α
	Т	76	76	100	0.2	Α
EB	R	57	60	106	0.3	Α
	Subtotal	133	136	102	0.2	Α
	L	49	48	98	1.6	Α
WB	Т	181	185	102	0.3	Α
	Subtotal	230	233	101	0.6	Α
Total		590	601	102	2.6	Α

Intersection: **Project Access & Emigration Canyon Road** 

Approach	Movement	Demand	Volume	e Served	Delay/Veh (sec)	
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	56	56	100	5.1	Α
NB	R	3	3	100	3.6	Α
	Subtotal	59	59	100	5.0	Α
	Т	78	79	101	0.5	Α
EB	R	16	15	94	0.3	Α
	Subtotal	94	94	100	0.5	Α
	L	1	0	0		
WB	Т	173	176	102	0.3	Α
	Subtotal	174	176	101	0.3	Α
Total	_	326	329	101	1.2	Α



Salt Lake City 3150 Emigration Canyon Road

Existing (2024) Plus Project

Evening Peak Hour

Project # Project:

**Analysis Period:** 

Time Period: Project #: UT24-2720

Crestview Drive & Sunnyside Avenue/Emigration Canyon Road Intersection:

Type: Unsignalized

Approach	Mayamant	Demand	Volume	Served	Delay/Vel	h (sec)
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	69	64	93	6.4	Α
NB	R	42	44	104	3.4	Α
	Subtotal	111	108	97	5.2	Α
	Т	198	204	103	0.3	Α
EB	R	205	214	104	1.1	Α
	Subtotal	403	418	104	0.7	Α
	L	36	35	97	3.5	Α
WB	Т	116	115	100	0.1	Α
	Subtotal	152	150	99	0.9	Α
Total		666	676	102	1.5	Α

Intersection: **Project Access & Emigration Canyon Road** 

Ammraach	Movement	Demand	Volume	Served	Delay/Ve	h (sec)
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	28	27	96	5.3	Α
NB	R	2	2	100	3.8	Α
	Subtotal	30	29	97	5.2	Α
	Т	194	200	103	1.5	Α
EB	R	46	48	104	0.8	Α
	Subtotal	240	248	103	1.4	Α
	L	2	2	100	1.7	Α
WB	Т	123	123	100	0.2	Α
	Subtotal	125	125	100	0.2	Α
Total		396	402	102	1.3	Α



Salt Lake City 3150 Emigration Canyon Road Project:

Future (2029) Background Morning Peak Hour Analysis Period: Time Period:

Project #: *UT24-2720* 

Crestview Drive & Sunnyside Avenue/Emigration Canyon Road Intersection:

Type: Unsignalized

Annyacah	Mayamant	Demand	Volume	Served	Delay/Veh (sec)	
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	220	213	97	7.1	Α
NB	R	15	14	93	5.4	Α
	Subtotal	235	227	97	7.0	Α
	Т	65	64	99	0.2	Α
EB	R	60	65	109	0.4	Α
	Subtotal	125	129	103	0.3	Α
	L	40	38	94	1.6	Α
WB	Т	140	139	99	0.4	Α
	Subtotal	180	177	98	0.7	Α
Total		540	533	99	3.3	Α



Salt Lake City 3150 Emigration Canyon Road Project:

Future (2029) Background Evening Peak Hour Analysis Period: Time Period:

Project #: UT24-2720

Crestview Drive & Sunnyside Avenue/Emigration Canyon Road Unsignalized Intersection: Type:

ı ype.		Ulisiglialized							
Annraach	Mayamant	Demand	Volume	Served	Delay/Veh (sec)				
Approach	Movement	Volume	Avg	%	Avg	LOS			
	L	<i>7</i> 5	70	94	7.0	Α			
NB	R	35	34	96	3.6	Α			
	Subtotal	110	104	95	5.9	Α			
	T	165	164	99	0.2	Α			
EB	R	215	225	105	1.2	Α			
	Subtotal	380	389	102	0.8	Α			
	L	35	34	96	3.5	Α			
WB	Т	85	84	99	0.2	Α			
	Subtotal	120	118	98	1.2	Α			
Total		610	611	100	1.7	Α			



Salt Lake City 3150 Emigration Canyon Road Project:

Future (2029) Plus Project Morning Peak Hour **Analysis Period:** 

Time Period: Project #: UT24-2720

Crestview Drive & Sunnyside Avenue/Emigration Canyon Road Intersection:

Type: Unsignalized

Approach	Mayamant	Demand	Volume Served		Delay/Vel	h (sec)
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	220	221	100	8.1	Α
NB	R	18	18	99	5.3	Α
	Subtotal	238	239	100	7.9	Α
	Т	78	81	104	0.2	Α
EB	R	60	60	100	0.3	Α
	Subtotal	138	141	102	0.2	Α
	L	49	47	96	1.8	Α
WB	Т	187	188	101	0.5	Α
	Subtotal	236	235	100	0.8	Α
Total		612	615	101	3.4	Α

Intersection: **Project Access & Emigration Canyon Road** 

Ammaaah	Mayamant	Demand	Volume	e Served	Delay/Veh (sec)	
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	56	55	99	5.2	Α
NB	R	3	3	100	3.5	Α
	Subtotal	59	58	98	5.1	Α
	Т	80	82	102	0.5	Α
EB	R	16	17	106	0.3	Α
	Subtotal	96	99	103	0.5	Α
	L	1	1	100	1.1	Α
WB	Т	180	180	100	0.3	Α
	Subtotal	181	181	100	0.3	Α
Total		336	338	101	1.2	Α



Salt Lake City 3150 Emigration Canyon Road Project:

Future (2029) Plus Project Evening Peak Hour **Analysis Period:** 

Time Period: Project #: UT24-2720

Crestview Drive & Sunnyside Avenue/Emigration Canyon Road Intersection: Type: Unsignalized

Approach	Mayamant	Demand	Volume	Served	Delay/Vel	h (sec)
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	<i>7</i> 5	72	96	7.2	Α
NB	R	42	43	102	3.6	Α
	Subtotal	117	115	98	5.9	Α
	Т	204	200	98	0.3	Α
EB	R	215	215	100	1.2	Α
	Subtotal	419	415	99	0.8	Α
	L	40	40	99	3.3	Α
WB	Т	108	108	100	0.3	Α
	Subtotal	148	148	100	1.1	Α
Total		685	678	99	1.7	Α

Intersection: **Project Access & Emigration Canyon Road** 

Ammaaah	Mayanant	Demand	Volume	Served	Delay/Ve	h (sec)
Approach	Movement	Volume	Avg	%	Avg	LOS
	L	28	28	99	5.3	Α
NB	R	2	2	100	4.3	Α
	Subtotal	30	30	100	5.2	Α
	Т	200	200	100	1.3	Α
EB	R	46	44	95	0.7	Α
	Subtotal	246	244	99	1.2	Α
	L	2	2	100	1.8	Α
WB	Т	120	120	100	0.2	Α
	Subtotal	122	122	100	0.2	Α
Total		399	396	99	1.2	Α



## **APPENDIX E**

95<sup>th</sup> Percentile Queue Length Reports

### SimTraffic Queueing Report

**Project: SLC 3150 Emigration Canyon Road** 

Analysis: Existing (2024) Background Time Period: Morning Peak Hour

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



	NB	ЕВ	WB
Intersection	LR	TR	L
01: Crestview Drive & Sunnyside Avenue/Emigration Canyon Road	100		

Analysis: Existing (2024) Background **Time Period: Evening Peak Hour** 

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



Drainat	#.	11T24 2720
Project	#:	UT24-2720

	NB	EB	W
Intersection	LR	TR	L
01: Crestview Drive & Sunnyside Avenue/Emigration Canyon Road	75		50

Analysis: Existing (2024) Plus Project **Time Period: Morning Peak Hour** 

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



	NB	ЕВ	W B
Intersection	LR	TR	L
01: Crestview Drive & Sunnyside Avenue/Emigration Canyon Road	100		50
02: Project Access & Emigration Canyon Road	75		

#### SimTraffic Queueing Report

**Project: SLC 3150 Emigration Canyon Road** 

Analysis: Existing (2024) Plus Project Time Period: Evening Peak Hour

95<sup>in</sup> Percentile Queue Length (feet) - Rounded Up to Nearest Multiple of 25 ft



Proje	ct #: UT	24-2720	)
			_
NB	EB	WB	1

IntersectionLRTRLLT01: Crestview Drive & Sunnyside Avenue/Emigration Canyon Road755002: Project Access & Emigration Canyon Road50

Analysis: Future (2029) Background **Time Period: Morning Peak Hour** 

95<sup>in</sup> Percentile Queue Length (feet) - Rounded Up to Nearest Multiple of 25 ft



		ЕВ	W B
Intersection	LR	TR	L
01: Crestview Drive & Sunnyside Avenue/Emigration Canyon Road	100		

Analysis: Future (2029) Background **Time Period: Evening Peak Hour** 

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



		ЕВ	W B
Intersection	LR	TR	L
01: Crestview Drive & Sunnyside Avenue/Emigration Canyon Road	75		50

Analysis: Future (2029) Plus Project **Time Period: Morning Peak Hour** 

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



		EB	V	<b>NB</b>
Intersection	LR	TR	L	LT
01: Crestview Drive & Sunnyside Avenue/Emigration Canyon Road			50	
02: Project Access & Emigration Canyon Road	50			

Analysis: Future (2029) Plus Project **Time Period: Evening Peak Hour** 

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



		EB	V	VB
Intersection	LR	TR	L	LT
01: Crestview Drive & Sunnyside Avenue/Emigration Canyon Road	75		50	
02: Project Access & Emigration Canyon Road	50			