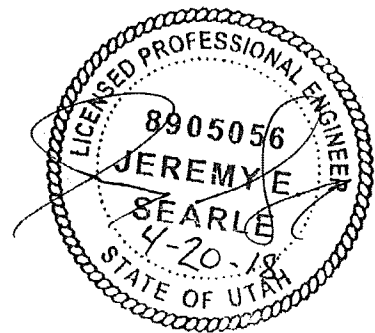
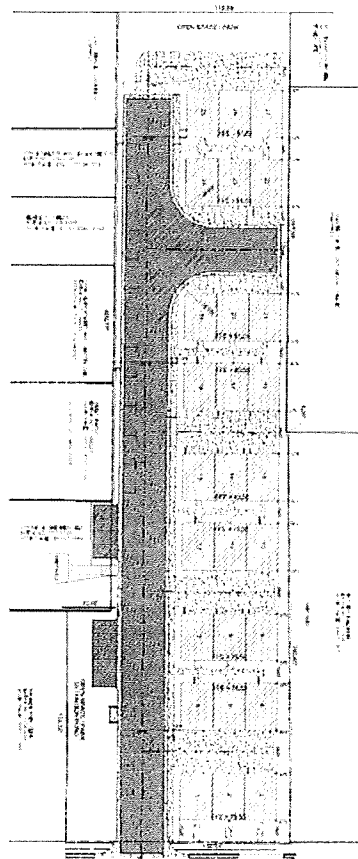


# Granite Peaks

## Traffic Impact Study



## South Salt Lake, Utah

April 2018

UT18-1223

**EXECUTIVE SUMMARY**

This study addresses the traffic impacts associated with the proposed Granite Peaks development located in South Salt Lake, Utah. The proposed project is located on the north side of 3900 South, between 400 East and 500 East.

Included within the analyses for this study are the traffic operations and recommended mitigation measures for existing conditions and plus project conditions (conditions after development of the proposed project) at key intersections and roadways near the site.

The evening peak hour level of service (LOS) was computed for each study intersection. The results of this analysis are shown in Table ES-1.

<b>TABLE ES-1 LOS Analysis - Evening Peak Hour South Salt Lake - Granite Peaks TIS</b>		
<b>Intersection</b>	<b>Level of Service (Sec/Veh)<sup>1</sup></b>	
	<b>Existing (2018) Background</b>	<b>Existing (2018) Plus Project</b>
400 East / 3900 South	<b>C (22.4) / SB</b>	<b>D (25.6) / SB</b>
500 East / 3900 South	<b>B (15.5)</b>	<b>B (16.0)</b>
Project Access / 3900 South <sup>2</sup>	<b>-</b>	<b>B (14.2) / SB</b>

1. Intersection LOS and delay (seconds/vehicle) values represent the overall intersection average for roundabout, signalized, all-way stop controlled intersections and the worst approach for all other unsignalized intersections.  
 2. This intersection is a project access and was only analyzed in "plus project" scenarios.

Source: Hales Engineering, April 2018

## **SUMMARY OF KEY FINDINGS/RECOMMENDATIONS**

The following is a summary of key findings and recommendations:

- All study intersections are currently operating at an acceptable LOS during the evening peak hour in existing (2018) background conditions.
- The development will consist of 27 townhomes/condos.
- All study intersections are anticipated to operate at an acceptable LOS during the evening peak hour with project traffic added.

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## I. INTRODUCTION

### A. Purpose

This study addresses the traffic impacts associated with the proposed Granite Peaks development located in South Salt Lake, Utah. The proposed project is located on the north side of 3900 South, between 400 East and 500 East. Figure 1 shows a vicinity map of the proposed development.

Included within the analyses for this study are the traffic operations and recommended mitigation measures for existing conditions and plus project conditions (conditions after development of the proposed project) at key intersections and roadways near the site.



**Figure 1 Vicinity Map Showing the Project Location in South Salt Lake, 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:

- 400 East / 3900 South
- 500 East / 3900 South

## **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. Figure 2 provides a visual representation of each LOS letter designation.

The Highway Capacity Manual (HCM), 6<sup>th</sup> Edition 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 and all-way stop 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 approach.

## **D. Level of Service Standards**

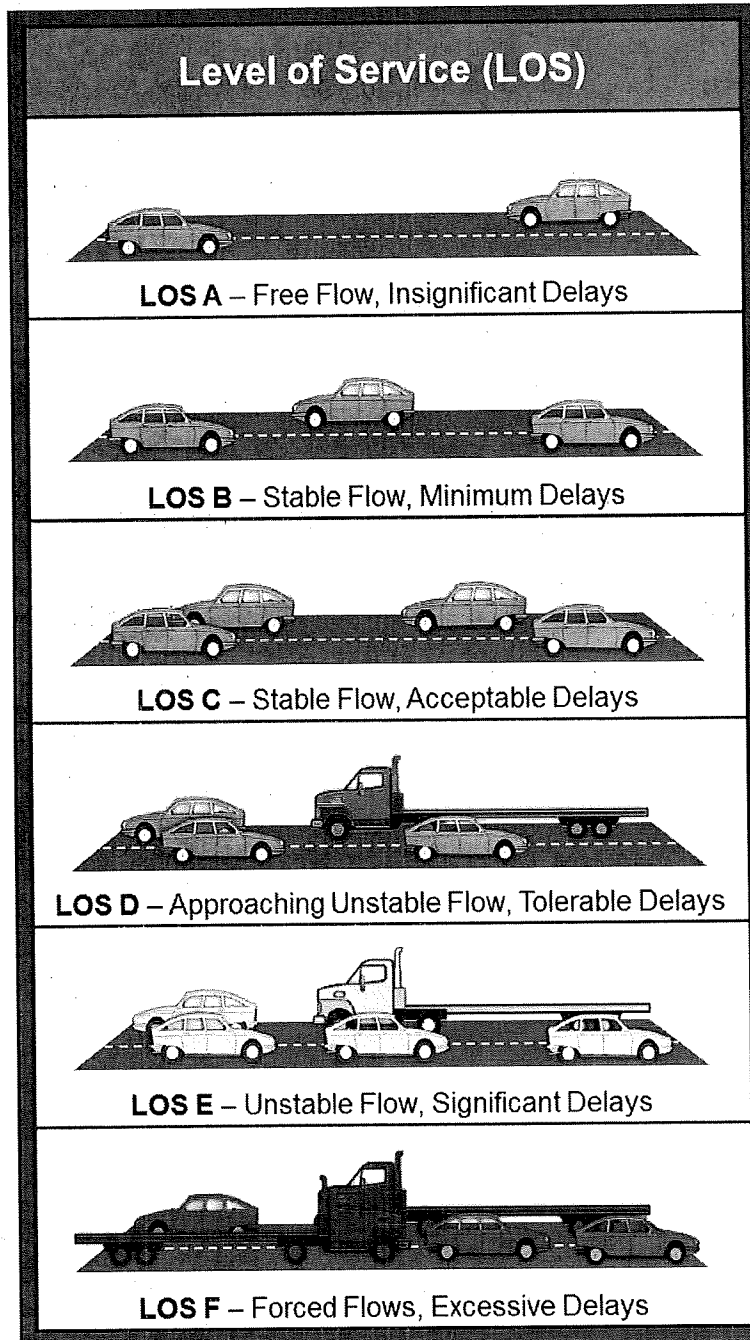
For the purposes of this study, a minimum overall intersection performance for each of the study intersections was set at LOS D. However, if LOS E or F conditions exist, an explanation and/or mitigation measures will be presented. An LOS D threshold is consistent with “state-of-the-practice” traffic engineering principles for urbanized areas.

**Table 1 Level of Service Description**

Level of Service	Description of Traffic Conditions	Average Delay (seconds/vehicle)
<b>Signalized Intersections</b>		<b>Overall Intersection</b>
A	Extremely favorable progression and a very low level of control delay. Individual users are virtually unaffected by others in the traffic stream.	$0 \leq 10.0$
B	Good progression and a low level of control delay. The presence of other users in the traffic stream becomes noticeable.	$> 10.0$ and $\leq 20.0$
C	Fair progression and a moderate level of control delay. The operation of individual users becomes somewhat affected by interactions with others in the traffic stream.	$> 20.0$ and $\leq 35.0$
D	Marginal progression with relatively elevated levels of control delay. Operating conditions are noticeably more constrained.	$> 35.0$ and $\leq 55.0$
E	Poor progression with unacceptably elevated levels of control delay. Operating conditions are at or near capacity.	$> 55.0$ and $\leq 80.0$
F	Unacceptable progression with forced or breakdown operating conditions.	$> 80.0$
<b>Unsignalized Intersections</b>		<b>Worst Approach</b>
A	Free Flow / Insignificant Delay	$0 \leq 10.0$
B	Stable Operations / Minimum Delays	$> 10.0$ and $\leq 15.0$
C	Stable Operations / Acceptable Delays	$> 15.0$ and $\leq 25.0$
D	Approaching Unstable Flows / Tolerable Delays	$> 25.0$ and $\leq 35.0$
E	Unstable Operations / Significant Delays Can Occur	$> 35.0$ and $\leq 50.0$
F	Forced Flows / Unpredictable Flows / Excessive Delays Occur	$> 50.0$

Source: Hales Engineering Descriptions, based on *Highway Capacity Manual (HCM)*, 6<sup>th</sup> Edition Methodology (Transportation Research Board, 2016)





**Figure 2 LOS Letter Designation**

## **II. EXISTING (2018) 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 will provide a baseline condition that may be compared to the build conditions to identify the impacts of the development.

### **B. Roadway System**

The primary roadway that will provide access to the project site is described below:

3900 South – is a city-maintained roadway which is classified by the City of South Salt Lake General Plan (December 2009) as a “major arterial”. The roadway has two travel lanes in each direction separated by a center two-way left-turn lane (TWLTL). The posted speed limit is 40 mph in the study area.

### **C. 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:

- 400 East / 3900 South
- 500 East / 3900 South

The counts were performed on Thursday, April 12, 2018. The morning peak hour was determined to be between 8:00 and 9:00 a.m. and the evening peak hour was determined to be between 4:45 and 5:45 p.m. The evening peak hour volumes were approximately 24% higher than the morning peak hour volumes. Therefore, the evening peak hour volumes were used in the analysis to represent the worst-case conditions. Detailed count data are included in Appendix A.

Figure 3 shows the existing evening peak hour volumes as well as intersection geometry at the study intersections.

South Salt Lake - Granite Peaks TIS  
Existing (2018) Background

Evening Peak Hour  
Figure 3



Hales Engineering  
1220 North 500 West, Ste. 202 Lehi, Utah 84043

801.766.4343  
04/19/2018

**D. Level of Service Analysis**

Using Synchro/SimTraffic, which follow the *Highway Capacity Manual (HCM)*, 6<sup>th</sup> Edition methodology introduced in Chapter I, the evening peak hour LOS was computed for each study intersection. The results of this analysis are reported in Table 2 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. These results serve as a baseline condition for the impact analysis of the proposed development during existing (2018) conditions. As shown in Table 2, all study intersections are currently operating at an acceptable LOS during the evening peak hour.

**Table 2 Existing (2018) Background Evening Peak Hour Level of Service**

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach <sup>1,3</sup>	Aver. Delay (Sec/Veh) <sup>1</sup>	LOS <sup>1</sup>	Aver. Delay (Sec/Veh) <sup>2</sup>	LOS <sup>2</sup>
400 East / 3900 South	NB / SB Stop	SB	22.4	C	-	-
500 East / 3900 South	Signal	-	-	-	15.5	B

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way stop unsignalized intersections.  
 2. This represents the overall intersection LOS and delay (seconds / vehicle) and is reported for all-way stop and signal controlled intersections.  
 3. SB = Southbound approach, etc.

Source: Hales Engineering, April 2018

**E. Queuing Analysis**

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. The queue reports can be found in Appendix D. No significant queuing was observed during the evening peak hour.

**F. Mitigation Measures**

No mitigation measures are recommended.

### III. PROJECT CONDITIONS

#### A. Purpose

The project conditions analysis 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 the Introduction.

#### B. Project Description

This study addresses the traffic impacts associated with the proposed Granite Peaks development located in South Salt Lake, Utah. The proposed project is located on the north side of 3900 South, between 400 East and 500 East. The development will consist of residential townhome/condos. A concept plan for the proposed developments has been included in Appendix C.

The proposed land use for the development has been identified as follows:

- Townhomes/Condos 27 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*, (10<sup>th</sup> Edition, 2017). Trip Generation for the proposed project is included in Table 3.

The total trip generation for the development is as follows:

- Daily Trips: 164
- Morning Peak Hour Trips: 14
- Evening Peak Hour Trips: 20

**Table 3  
South Salt Lake - Granite Peaks  
Trip Generation**

Weekday Daily Land Use <sup>1</sup>	Number of Units	Unit Type	Trip Generation	%		Trips		Net Trips		Total Daily Trips
				Entering	Exiting	Entering	Exiting	Entering	Exiting	
Multifamily Housing (Low-Rise) (220)	27	Dwelling Units	164	50%	50%	82	82	82	82	164
<b>Project Total Daily Trips</b>						<b>82</b>	<b>82</b>	<b>82</b>	<b>82</b>	<b>164</b>
A.M. Peak Hour Land Use <sup>1</sup>	Number of Units	Unit Type	Trip Generation	%		Trips		Net Trips		Total a.m. Trips
				Entering	Exiting	Entering	Exiting	Entering	Exiting	
Multifamily Housing (Low-Rise) (220)	27	Dwelling Units	14	23%	77%	3	11	3	11	14
<b>Project Total a.m. Peak Hour Trips</b>						<b>3</b>	<b>11</b>	<b>3</b>	<b>11</b>	<b>14</b>
P.M. Peak Hour Land Use <sup>1</sup>	Number of Units	Unit Type	Trip Generation	%		Trips		Net Trips		Total p.m. Trips
				Entering	Exiting	Entering	Exiting	Entering	Exiting	
Multifamily Housing (Low-Rise) (220)	27	Dwelling Units	20	63%	37%	13	7	13	7	20
<b>Project Total p.m. Peak Hour Trips</b>						<b>13</b>	<b>7</b>	<b>13</b>	<b>7</b>	<b>20</b>

1. Land Use Code from the Institute of Transportation Engineers, *Trip Generation Manual* (10th Edition - 2017)

SOURCE: Hales Engineering, April 2018

#### 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 in close proximity to the site. The resulting distribution of project generated trips during the evening peak hour is as follows:

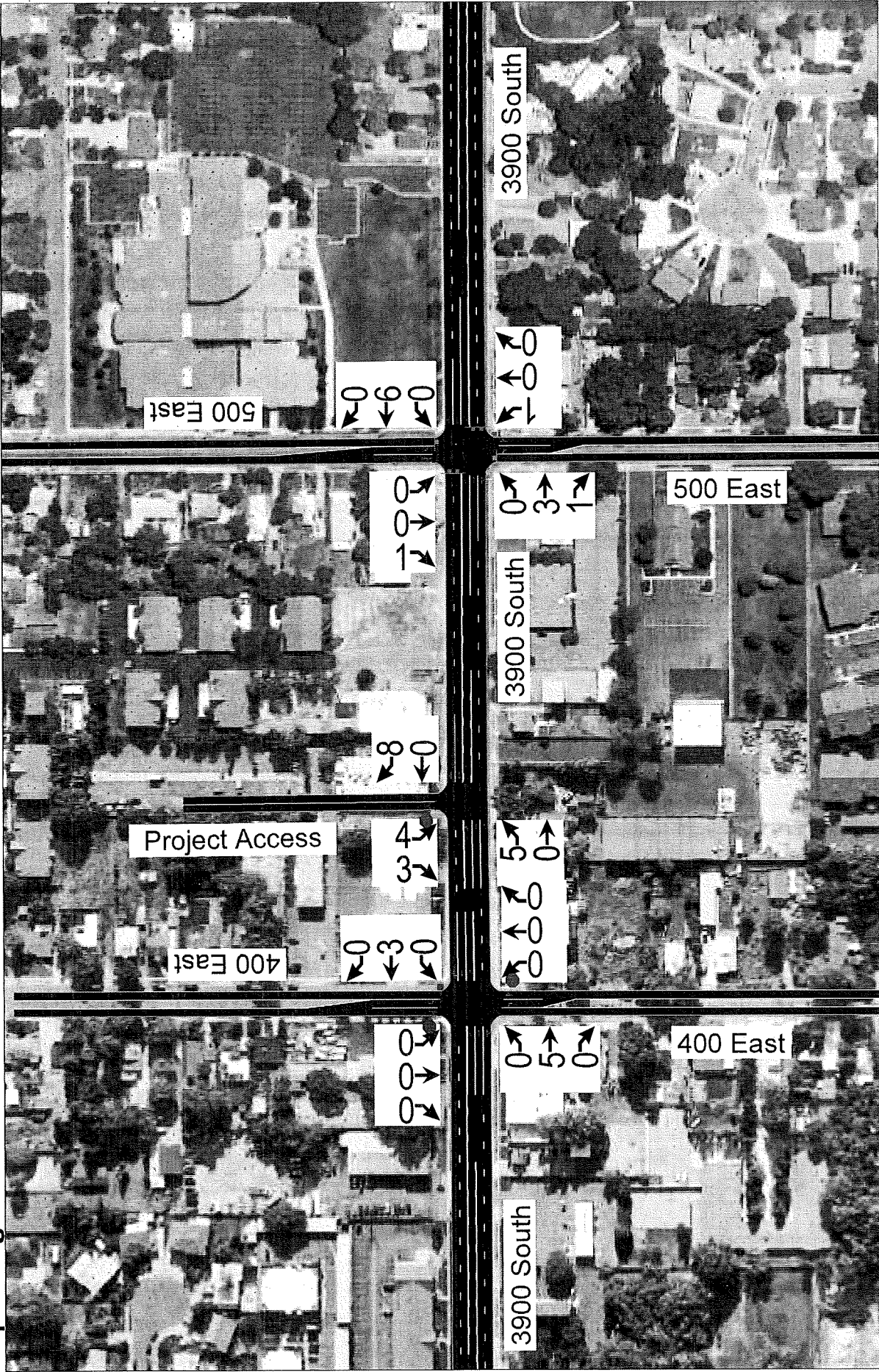
##### To/From Project:

- 35% East
- 45% West
- 5% North
- 15% South

These trip distribution assumptions were used to assign the evening peak hour generated traffic at the study intersections to create trip assignment for the proposed development. Trip assignment for the development is shown in Figure 4.

Evening Peak Hour  
Figure 4

South Salt Lake - Granite Peaks TIS  
Trip Assignment



801.766.4343  
04/19/2018

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**E. Access**

The proposed access for the site will be gained at the following locations (see also concept plan in Appendix C):

3900 South:

- The Project Access will be located approximately 500 feet west of the 500 East / 3900 South intersection. It will access the project on the north side of 3900 South. It is anticipated that the access will be stop-controlled southbound. The existing building on site will be razed, and the eastern access will be removed, leaving just the proposed Project Access to the site. There will also be a gated cross access to the property west of the project in case of emergency.



## **IV. EXISTING (2018) PLUS PROJECT CONDITIONS**

### **A. Purpose**

The purpose of the existing (2018) 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**

Project trips were assigned to the study intersections based on the trip distribution percentages discussed in Chapter III and permitted intersection turning movements. The existing (2018) plus project evening peak hour volumes were generated for the study intersections and are shown in Figure 5.

### **C. Level of Service Analysis**

Using Synchro/SimTraffic, which follow the Highway Capacity Manual (HCM), 6<sup>th</sup> Edition methodology introduced in Chapter I, the evening peak hour LOS was computed for each study intersection. The results of this analysis are reported in Table 4 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. Based on Table 4, all intersections are operating at an acceptable level of service with project traffic included.

### **D. Queuing Analysis**

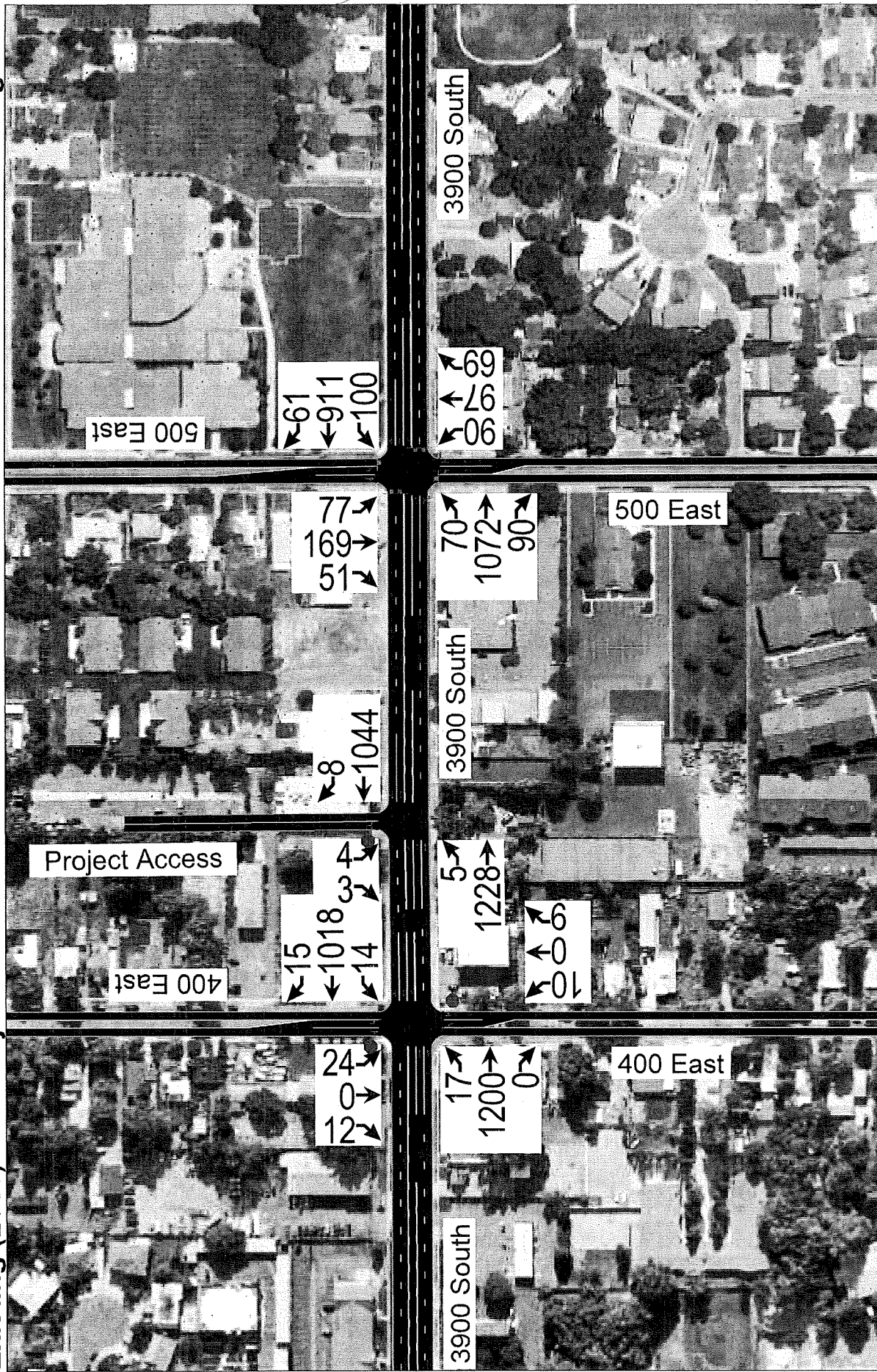
Hales Engineering calculated the 95<sup>th</sup> percentile queue lengths for each of the study intersections. The queue reports can be found in Appendix D. There is no significant queuing expected for any of the study intersections.

### **E. Mitigation Measures**

No mitigation measures are recommended.

Evening Peak Hour  
Figure 5

South Salt Lake - Granite Peaks TIS  
Existing (2018) Plus Project



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**Table 4 Existing (2018) Plus Project Evening Peak Hour Level of Service**

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach <sup>1,3</sup>	Aver. Delay (Sec/Veh) <sup>1</sup>	LOS <sup>1</sup>	Aver. Delay (Sec/Veh) <sup>2</sup>	LOS <sup>2</sup>
400 East / 3900 South	NB / SB Stop	SB	25.6	D	-	-
500 East / 3900 South	Signal	-	-	-	16.0	B
Project Access / 3900 South	SB Stop	SB	14.2	B	-	-

- 1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way stop unsignalized intersections.
- 2. This represents the overall intersection LOS and delay (seconds / vehicle) and is reported for all-way stop and signal controlled intersections.
- 3. SB = Southbound approach, etc.

Source: Hales Engineering, April 2018

# **APPENDIX A**

## **Turning Movement Counts**

# Traffic Counts

2364 North 1450 East  
Lehi, UT 84043  
801.636.0891

## Intersection Turning Movement Summary

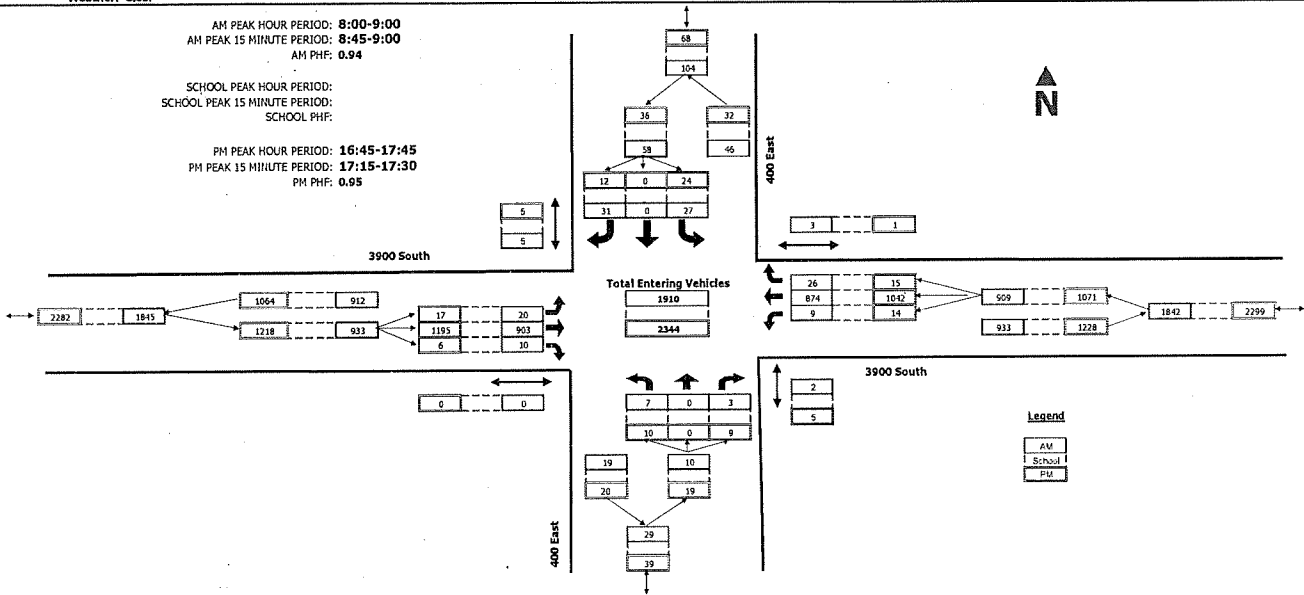
Intersection: 400 East / 3900 South  
North/South: 400 East  
East/West: 3900 South  
Jurisdiction: South Salt Lake  
Project Title: Granite Peaks TIS  
Project No: UT18-1223  
Weather: Clear

Date: 4-12-18, Thu  
Day of Week Adjustment: 100.0%  
Month of Year Adjustment: 100.0%  
Adjustment Station #: 0  
Growth Rate: 0.0%  
Number of Years: 0

AM PEAK HOUR PERIOD: 8:00-9:00  
AM PEAK 15 MINUTE PERIOD: 8:45-9:00  
AM PHF: 0.94

SCHOOL PEAK HOUR PERIOD:  
SCHOOL PEAK 15 MINUTE PERIOD:  
SCHOOL PHF:

PM PEAK HOUR PERIOD: 16:45-17:45  
PM PEAK 15 MINUTE PERIOD: 17:15-17:30  
PM PHF: 0.95



RAW COUNT SUMMARIES	400 East Northbound				400 East Southbound				3900 South Eastbound				3900 South Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
<b>AM PERIOD COUNTS</b>																	
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	3	0	0	1	1	141	1	0	0	131	0	0	277
7:15-7:30	0	0	0	1	3	0	2	0	4	201	0	2	1	168	6	0	385
7:30-7:45	0	0	3	1	1	0	4	0	14	175	0	0	0	204	6	0	407
7:45-8:00	2	0	2	0	5	0	3	0	10	190	2	0	2	258	5	0	479
8:00-8:15	0	0	0	0	13	0	12	2	8	207	1	0	2	200	12	0	455
8:15-8:30	3	0	3	0	11	0	11	2	6	231	2	0	2	212	4	0	485
8:30-8:45	1	0	0	1	1	0	5	1	2	221	3	0	1	221	6	0	461
8:45-9:00	3	0	0	1	2	0	3	0	4	244	4	0	4	241	4	3	509
<b>MIDDAY PERIOD COUNTS</b>																	
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
<b>PM PERIOD COUNTS</b>																	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00-16:15	3	0	0	0	2	0	8	0	4	192	5	0	4	245	7	1	470
16:15-16:30	2	0	1	2	2	0	4	1	2	250	2	0	2	233	1	0	499
16:30-16:45	3	0	0	1	11	0	5	0	2	249	9	0	0	245	4	1	528
16:45-17:00	2	0	2	1	4	0	2	0	4	285	1	0	7	245	0	0	553
17:00-17:15	2	0	3	0	9	0	4	4	3	291	1	0	2	275	2	0	592
17:15-17:30	1	0	2	4	3	0	2	0	8	329	2	0	2	261	6	1	616
17:30-17:45	5	0	2	0	8	0	4	1	2	289	2	0	3	261	7	0	583
17:45-18:00	0	0	2	2	4	0	3	1	5	285	0	0	1	194	2	0	496

# Traffic Counts

2364 North 1450 East  
Lehi, UT 84043  
801.636.0891

## Intersection Turning Movement Summary

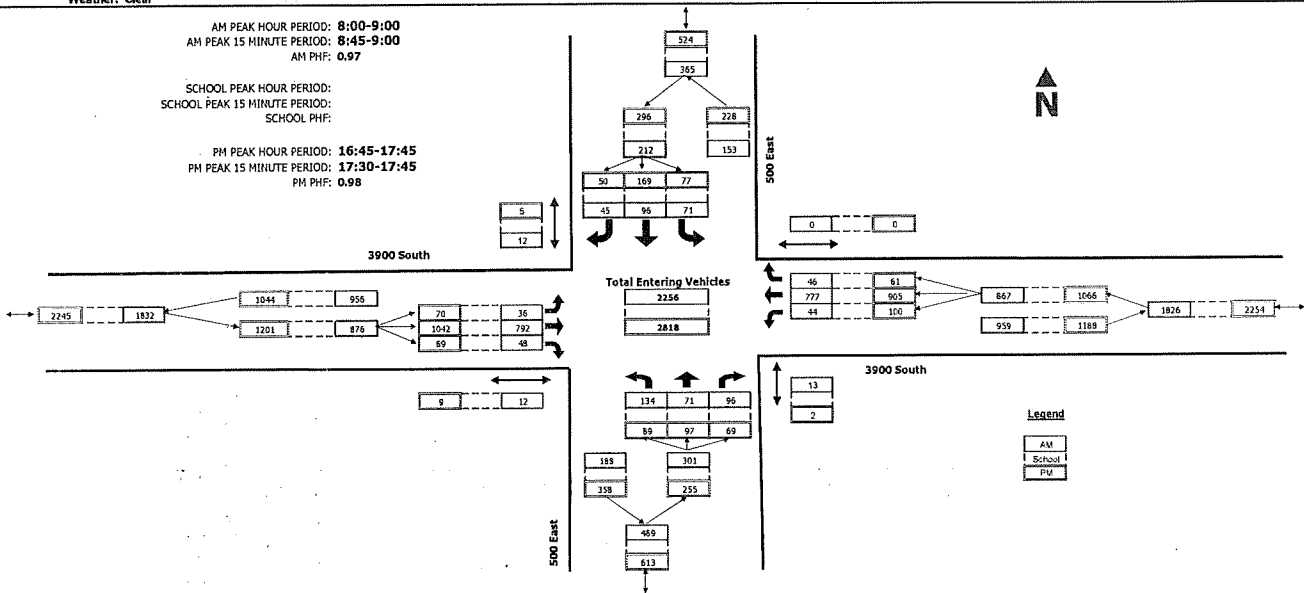
Intersection: 500 East / 3900 South  
North/South: 500 East  
East/West: 3900 South  
Jurisdiction: South Salt Lake  
Project Title: Granite Peaks TIS  
Project No: UT18-1223  
Weather: Clear

Date: 4-12-18, Thu  
Day of Week Adjustment: 100.0%  
Month of Year Adjustment: 100.0%  
Adjustment Station #: 0  
Growth Rate: 0.0%  
Number of Years: 0

AM PEAK HOUR PERIOD: 8:00-9:00  
AM PEAK 15 MINUTE PERIOD: 8:45-9:00  
AM PHF: 0.97

SCHOOL PEAK HOUR PERIOD:  
SCHOOL PEAK 15 MINUTE PERIOD:  
SCHOOL PHF:

PM PEAK HOUR PERIOD: 16:45-17:45  
PM PEAK 15 MINUTE PERIOD: 17:30-17:45  
PM PHF: 0.98



RAW COUNT SUMMARIES	500 East Northbound				500 East Southbound				3900 South Eastbound				3900 South Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
<b>AM PERIOD COUNTS</b>																	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00-7:15	23	8	18	2	15	6	7	0	7	126	6	0	6	116	3	0	341
7:15-7:30	21	22	25	1	18	10	12	0	12	185	4	3	9	154	11	0	483
7:30-7:45	30	21	23	1	10	19	6	0	11	161	9	1	6	191	16	0	503
7:45-8:00	43	13	15	0	20	14	11	0	16	169	6	0	17	221	9	0	554
8:00-8:15	26	22	26	6	18	32	16	3	11	172	14	5	6	183	17	0	543
8:15-8:30	26	10	19	5	21	25	10	3	7	207	12	5	14	190	11	0	552
8:30-8:45	44	30	24	2	23	21	15	1	12	158	10	1	9	183	9	0	578
8:45-9:00	38	9	27	0	9	18	4	5	6	215	12	1	15	221	9	0	583
<b>MIDDAY PERIOD COUNTS</b>																	
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
<b>PM PERIOD COUNTS</b>																	
Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00-16:15	17	27	21	0	12	34	9	0	17	169	13	0	26	221	10	0	576
16:15-16:30	26	17	15	1	13	21	12	0	9	210	20	0	23	224	10	0	600
16:30-16:45	20	23	16	0	14	24	7	2	14	229	15	1	22	212	20	0	616
16:45-17:00	27	19	16	0	13	28	13	1	17	238	23	1	34	234	15	0	678
17:00-17:15	16	27	21	1	24	47	11	0	15	270	19	2	16	221	17	0	704
17:15-17:30	22	24	14	0	14	34	11	3	17	258	25	6	27	252	17	0	715
17:30-17:45	24	27	18	1	26	59	15	1	21	276	22	0	23	198	12	0	721
17:45-18:00	34	21	22	0	24	23	10	0	9	241	18	2	28	177	10	0	617

# APPENDIX B

## LOS Results

### SimTraffic LOS Report

**Project:** South Salt Lake - Granite Peaks TIS  
**Analysis Period:** Existing (2018) Background  
**Time Period:** Evening Peak Hour **Project #:** UT18-1223

**Intersection:** 400 East & 3900 South  
**Type:** Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	10	10	100	28.4	D
	R	9	10	111	8.7	A
	<b>Subtotal</b>	19	20	105	18.6	C
SB	L	24	25	103	30.5	D
	R	12	13	108	6.8	A
	<b>Subtotal</b>	<b>36</b>	<b>38</b>	<b>106</b>	<b>22.4</b>	<b>C</b>
EB	L	17	17	99	12.4	B
	T	1,266	1,253	99	1.5	A
	R	6	7	117	1.3	A
	<b>Subtotal</b>	1,289	1,277	99	1.6	A
WB	L	14	13	93	11.3	B
	T	1,020	1,023	100	1.3	A
	R	15	16	107	1.2	A
	<b>Subtotal</b>	1,049	1,052	100	1.4	A
<b>Total</b>		2,394	2,387	100	2.1	A

**Intersection:** 500 East & 3900 South  
**Type:** Signalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	89	87	98	77.3	E
	T	97	99	102	45.4	D
	R	69	64	93	30.3	C
	<b>Subtotal</b>	255	250	98	52.6	D
SB	L	77	78	102	49.7	D
	T	169	164	97	45.0	D
	R	50	56	113	33.3	C
	<b>Subtotal</b>	296	298	101	44.0	D
EB	L	70	66	95	16.1	B
	T	1,076	1,074	100	6.5	A
	R	89	85	96	6.2	A
	<b>Subtotal</b>	1,235	1,225	99	7.0	A
WB	L	100	104	104	24.3	C
	T	905	904	100	7.1	A
	R	61	62	102	4.9	A
	<b>Subtotal</b>	1,066	1,070	100	8.6	A
<b>Total</b>		2,851	2,843	100	15.5	B



100: 400 East & 3900 South Performance by movement Interval #1 4:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.1	4.0	0.2	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.4
Total Del/Veh (s)	11.2	1.6	1.6	11.2	1.2	1.0	32.9	10.2	33.3	6.2	2.2
Vehicles Entered	5	305	2	3	247	4	3	3	8	3	583
Vehicles Exited	5	311	2	3	252	4	3	2	8	3	593
Hourly Exit Rate	20	1244	8	12	1008	16	12	8	32	12	2372
Input Volume	17	1253	6	14	1009	15	10	9	24	12	2369
% of Volume	118	99	133	86	100	107	120	89	133	100	100

100: 400 East & 3900 South Performance by movement Interval #2 4:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.1	4.0	0.2	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	11.9	1.4	1.5	11.4	1.3	1.1	20.7	7.0	27.5	6.4	1.9
Vehicles Entered	5	309	1	3	256	3	3	3	6	4	593
Vehicles Exited	5	302	1	3	248	3	3	3	6	4	578
Hourly Exit Rate	20	1208	4	12	992	12	12	12	24	16	2312
Input Volume	17	1253	6	14	1009	15	10	9	24	12	2369
% of Volume	118	96	67	86	98	80	120	133	100	133	98

100: 400 East & 3900 South Performance by movement Interval #3 5:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.1	4.1	0.2	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.4
Total Del/Veh (s)	10.4	1.5	1.1	10.2	1.3	1.1	23.3	10.9	32.5	9.2	2.0
Vehicles Entered	4	323	2	3	259	3	2	2	6	3	607
Vehicles Exited	5	330	2	4	266	4	2	2	6	3	624
Hourly Exit Rate	20	1320	8	16	1064	16	8	8	24	12	2496
Input Volume	18	1306	6	14	1054	15	10	9	25	12	2469
% of Volume	111	101	133	114	101	107	80	89	96	100	101

100: 400 East & 3900 South Performance by movement Interval #4 5:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.1	4.0	0.1	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	14.3	1.4	1.0	9.6	1.4	1.4	25.6	5.3	22.3	5.6	1.9
Vehicles Entered	3	318	2	4	261	5	3	3	6	3	608
Vehicles Exited	3	311	2	4	256	5	3	3	6	3	596
Hourly Exit Rate	12	1244	8	16	1024	20	12	12	24	12	2384
Input Volume	17	1253	6	14	1009	15	10	9	24	12	2369
% of Volume	71	99	133	114	101	133	120	133	100	100	101

100: 400 East & 3900 South Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.1	4.2	0.2	0.1
Total Delay (hr)	0.1	0.5	0.0	0.0	0.4	0.0	0.1	0.0	0.2	0.0	1.4
Total Del/Veh (s)	12.4	1.5	1.3	11.3	1.3	1.2	28.4	8.7	30.5	6.8	2.1
Vehicles Entered	17	1254	7	13	1023	16	10	10	25	13	2388
Vehicles Exited	17	1253	7	13	1023	16	10	10	25	13	2387
Hourly Exit Rate	17	1253	7	13	1023	16	10	10	25	13	2387
Input Volume	17	1266	6	14	1020	15	10	9	24	12	2394
% of Volume	99	99	117	93	100	107	100	111	103	108	100

101: 500 East & 3900 South Performance by movement Interval #1 4:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.6	0.2	0.3	3.7	0.4	0.4	3.6	0.5	0.5
Total Delay (hr)	0.1	0.5	0.0	0.1	0.4	0.0	0.5	0.3	0.1	0.3	0.6	0.1
Total Del/Veh (s)	15.0	6.3	5.7	19.6	6.4	4.5	74.6	43.1	28.4	48.4	45.2	34.6
Vehicles Entered	15	270	21	26	220	16	21	23	16	22	42	14
Vehicles Exited	16	276	21	26	220	16	20	21	14	20	40	13
Hourly Exit Rate	64	1104	84	104	880	64	80	84	56	80	160	52
Input Volume	69	1065	88	99	896	60	88	96	68	76	167	49
% of Volume	93	104	95	105	98	107	91	88	82	105	96	106

101: 500 East & 3900 South Performance by movement Interval #1 4:30

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.4
Total Delay (hr)	3.1
Total Del/Veh (s)	15.0
Vehicles Entered	706
Vehicles Exited	703
Hourly Exit Rate	2812
Input Volume	2821
% of Volume	100

101: 500 East & 3900 South Performance by movement Interval #2 4:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.8	0.2	0.3	3.8	0.4	0.3	3.6	0.4	0.4
Total Delay (hr)	0.1	0.5	0.0	0.2	0.5	0.0	0.4	0.3	0.1	0.3	0.5	0.1
Total Del/Veh (s)	17.8	6.2	5.9	25.3	7.2	5.1	67.5	37.2	24.7	41.1	40.1	30.9
Vehicles Entered	18	258	21	24	222	15	21	24	16	18	41	15
Vehicles Exited	17	252	20	25	223	15	22	26	17	20	43	16
Hourly Exit Rate	68	1008	80	100	892	60	88	104	68	80	172	64
Input Volume	69	1065	88	99	896	60	88	96	68	76	167	49
% of Volume	99	95	91	101	100	100	100	108	100	105	103	131

101: 500 East & 3900 South Performance by movement Interval #2 4:45

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.4
Total Delay (hr)	3.0
Total Del/Veh (s)	14.9
Vehicles Entered	693
Vehicles Exited	696
Hourly Exit Rate	2784
Input Volume	2821
% of Volume	99

101: 500 East & 3900 South Performance by movement Interval #3 5:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.6	0.2	0.3	3.8	0.4	0.4	3.6	0.4	0.3
Total Delay (hr)	0.1	0.5	0.0	0.2	0.4	0.0	0.5	0.3	0.1	0.3	0.5	0.1
Total Del/Veh (s)	15.3	6.2	6.6	26.7	6.6	4.6	68.0	43.5	30.0	47.9	43.5	28.7
Vehicles Entered	17	282	24	28	233	16	22	27	16	18	41	14
Vehicles Exited	17	286	24	28	232	16	20	24	14	17	37	13
Hourly Exit Rate	68	1144	96	112	928	64	80	96	56	68	148	52
Input Volume	72	1111	92	103	933	63	92	100	71	79	174	52
% of Volume	94	103	104	109	99	102	87	96	79	86	85	100

101: 500 East & 3900 South Performance by movement Interval #3 5:00

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.4
Total Delay (hr)	3.2
Total Del/Veh (s)	14.8
Vehicles Entered	738
Vehicles Exited	728
Hourly Exit Rate	2912
Input Volume	2942
% of Volume	99

101: 500 East & 3900 South Performance by movement Interval #4 5:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.5	0.2	0.3	3.8	0.4	0.4	3.6	0.3	0.4
Total Delay (hr)	0.1	0.5	0.0	0.2	0.5	0.0	0.5	0.4	0.2	0.3	0.5	0.1
Total Del/Veh (s)	14.5	6.6	5.7	22.7	7.6	5.3	71.0	43.0	29.5	43.2	38.2	29.7
Vehicles Entered	17	265	20	26	227	15	22	26	16	19	39	12
Vehicles Exited	16	260	20	25	230	14	26	28	18	20	43	14
Hourly Exit Rate	64	1040	80	100	920	56	104	112	72	80	172	56
Input Volume	69	1065	88	99	896	60	88	96	68	76	167	49
% of Volume	93	98	91	101	103	93	118	117	106	105	103	114

101: 500 East & 3900 South Performance by movement Interval #4 5:15

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.4
Total Delay (hr)	3.2
Total Del/Veh (s)	15.4
Vehicles Entered	704
Vehicles Exited	714
Hourly Exit Rate	2856
Input Volume	2821
% of Volume	101

101: 500 East & 3900 South Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.6	0.2	0.3	3.7	0.4	0.4	3.6	0.4	0.4
Total Delay (hr)	0.3	1.9	0.1	0.7	1.8	0.1	1.9	1.3	0.5	1.1	2.1	0.5
Total Del/Veh (s)	16.1	6.5	6.2	24.3	7.1	4.9	77.3	45.4	30.3	49.7	45.0	33.3
Vehicles Entered	67	1074	85	104	902	62	87	100	64	78	163	55
Vehicles Exited	66	1074	85	104	904	62	87	99	64	78	164	56
Hourly Exit Rate	66	1074	85	104	904	62	87	99	64	78	164	56
Input Volume	70	1076	89	100	905	61	89	97	69	77	169	50
% of Volume	95	100	96	104	100	102	98	102	93	102	97	113

101: 500 East & 3900 South Performance by movement Entire Run

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.4
Total Delay (hr)	12.4
Total Del/Veh (s)	15.5
Vehicles Entered	2841
Vehicles Exited	2843
Hourly Exit Rate	2843
Input Volume	2851
% of Volume	100

Total Zone Performance By Interval

Interval Start	4:30	4:45	5:00	5:15	All
Denied Delay (hr)	0.1	0.1	0.1	0.1	0.4
Denied Del/Veh (s)	0.9	0.8	0.8	0.8	0.8
Total Delay (hr)	3.4	3.3	3.5	3.5	13.8
Total Del/Veh (s)	205.6	166.4	182.9	175.3	375.5
Vehicles Entered	435	429	451	437	1754
Vehicles Exited	20	19	22	23	83
Hourly Exit Rate	80	76	88	92	83
Input Volume	5190	5190	5411	5190	5245
% of Volume	2	1	2	2	2

Intersection: 100: 400 East & 3900 South, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	31	77	80	34	25	28	33	27	53	28
Average Queue (ft)	14	16	17	9	5	5	12	11	26	13
95th Queue (ft)	38	79	90	33	28	27	37	36	59	37
Link Distance (ft)		729	729		744	744		680		632
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)		0					0	0		
Queuing Penalty (veh)		0					0	0		

Intersection: 100: 400 East & 3900 South, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	40	43	34	34	33	38	28	31	44	34
Average Queue (ft)	13	7	6	8	6	7	10	12	21	12
95th Queue (ft)	46	41	35	31	39	43	33	37	50	38
Link Distance (ft)		729	729		744	744		680		632
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)	0	0								
Queuing Penalty (veh)	1	0								

Intersection: 100: 400 East & 3900 South, Interval #3

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	29	46	43	39	33	38	30	30	56	40
Average Queue (ft)	13	9	8	9	6	7	8	8	25	12
95th Queue (ft)	39	71	73	34	38	39	30	29	63	42
Link Distance (ft)		729	729		744	744		680		632
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)		0			0		0	0	0	0
Queuing Penalty (veh)		0			0		0	0	0	0

Intersection: 100: 400 East & 3900 South, Interval #4

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	35	40	25	39	37	48	37	28	42	33
Average Queue (ft)	11	8	4	10	6	9	10	10	19	9
95th Queue (ft)	37	38	34	36	35	45	35	34	49	33
Link Distance (ft)		729	729		744	744		680		632
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)					0		0			
Queuing Penalty (veh)					0		0			

Intersection: 100: 400 East & 3900 South, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	48	115	106	50	67	73	41	35	63	42
Average Queue (ft)	13	10	9	9	6	7	10	10	23	11
95th Queue (ft)	40	60	62	34	35	39	34	34	56	38
Link Distance (ft)		729	729		744	744		680		632
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)	0	0			0		0	0	0	0
Queuing Penalty (veh)	0	0			0		0	0	0	0

Intersection: 101: 500 East & 3900 South, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	59	200	198	106	211	172	118	215	162	240
Average Queue (ft)	30	114	122	54	130	98	81	106	74	144
95th Queue (ft)	65	207	214	117	220	186	140	210	151	240
Link Distance (ft)		744	744		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1			1		25	20	8	36
Queuing Penalty (veh)		1			1		40	18	18	27

Intersection: 101: 500 East & 3900 South, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	66	154	168	105	194	170	119	209	123	233
Average Queue (ft)	35	91	106	57	129	101	76	131	75	166
95th Queue (ft)	73	149	166	116	208	176	125	243	158	260
Link Distance (ft)		744	744		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		0		0	1		20	19	4	30
Queuing Penalty (veh)		0		2	1		32	17	10	22

Intersection: 101: 500 East & 3900 South, Interval #3

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	57	191	204	117	208	190	126	248	112	234
Average Queue (ft)	34	116	122	67	137	116	76	123	59	134
95th Queue (ft)	61	200	205	128	219	205	137	247	118	234
Link Distance (ft)		744	744		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1		0	2		21	25	6	30
Queuing Penalty (veh)		1		0	2		36	23	13	24

Intersection: 101: 500 East & 3900 South, Interval #4

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	60	176	181	104	196	186	128	247	124	228
Average Queue (ft)	32	103	116	56	139	118	91	156	65	166
95th Queue (ft)	61	175	193	100	210	200	140	276	127	252
Link Distance (ft)		744	744		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1			1		30	25	4	30
Queuing Penalty (veh)		0			1		49	22	10	23



Intersection: 101: 500 East & 3900 South, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
	L	T	TR	L	T	TR	L	TR	L	TR
Directions Served										
Maximum Queue (ft)	76	240	246	156	246	215	129	297	188	272
Average Queue (ft)	33	106	117	58	134	108	81	129	68	153
95th Queue (ft)	65	186	196	116	215	193	137	248	140	249
Link Distance (ft)		744	744		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1		0	1		24	22	6	31
Queuing Penalty (veh)		1		0	1		39	20	13	24

Zone Summary

- Zone wide Queuing Penalty, Interval #1: 105
- Zone wide Queuing Penalty, Interval #2: 85
- Zone wide Queuing Penalty, Interval #3: 99
- Zone wide Queuing Penalty, Interval #4: 104
- Zone wide Queuing Penalty, All Intervals: 98

**SimTraffic LOS Report**

**Project:** South Salt Lake - Granite Peaks TIS  
**Analysis Period:** Existing (2018) Plus Project  
**Time Period:** Evening Peak Hour **Project #: UT18-1223**

**Intersection:** 400 East & 3900 South  
**Type:** Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	10	10	100	29.4	D
	R	9	8	89	9.4	A
	<b>Subtotal</b>	19	18	95	20.5	C
SB	L	24	26	107	35.7	E
	R	12	14	117	6.7	A
	<b>Subtotal</b>	<b>36</b>	<b>40</b>	<b>111</b>	<b>25.6</b>	<b>D</b>
EB	L	17	15	87	10.3	B
	T	1,271	1,266	100	1.4	A
	<b>Subtotal</b>	1,288	1,281	99	1.5	A
WB	L	14	14	100	11.4	B
	T	1,078	1,084	101	0.4	A
	R	15	14	93	0.4	A
	<b>Subtotal</b>	1,107	1,112	100	0.5	A
<b>Total</b>		2,451	2,451	100	1.6	A

**Intersection:** 500 East & 3900 South  
**Type:** Signalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	90	92	102	84.6	F
	T	97	96	99	48.5	D
	R	69	73	106	31.3	C
	<b>Subtotal</b>	256	261	102	56.4	E
SB	L	77	77	100	54.1	D
	T	169	174	103	47.4	D
	R	51	54	106	34.8	C
<b>Subtotal</b>	297	305	103	46.9	D	
EB	L	70	68	97	17.0	B
	T	1,136	1,130	99	5.8	A
	R	90	94	104	5.6	A
<b>Subtotal</b>	1,296	1,292	100	6.4	A	
WB	L	100	103	103	24.4	C
	T	911	916	101	7.3	A
	R	61	62	102	5.4	A
	<b>Subtotal</b>	1,072	1,081	101	8.8	A
<b>Total</b>		2,920	2,939	101	16.0	B

**SimTraffic LOS Report**

**Project:** South Salt Lake - Granite Peaks TIS  
**Analysis Period:** Existing (2018) Plus Project  
**Time Period:** Evening Peak Hour **Project #:** UT18-1223

**Intersection:** 3900 South & Project Access  
**Type:** Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
SB	L	4	3	75	24.0	C
	R	3	4	133	6.8	A
	<b>Subtotal</b>	<b>7</b>	<b>7</b>	<b>100</b>	<b>14.2</b>	<b>B</b>
EB	L	5	5	100	5.2	A
	T	1,300	1,295	100	0.4	A
	<b>Subtotal</b>	<b>1,305</b>	<b>1,300</b>	<b>100</b>	<b>0.4</b>	<b>A</b>
WB	T	1,098	1,104	101	0.9	A
	R	8	8	100	0.9	A
	<b>Subtotal</b>	<b>1,106</b>	<b>1,112</b>	<b>101</b>	<b>0.9</b>	<b>A</b>
<b>Total</b>		<b>2,418</b>	<b>2,419</b>	<b>100</b>	<b>0.7</b>	<b>A</b>

**Intersection:**  
**Type:**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
<b>Total</b>						

100: 400 East & 3900 South Performance by movement Interval #1 4:30

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	4.9	0.1	3.9	0.2	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
Total Del/Veh (s)	11.9	1.5	10.5	0.4	0.8	32.9	12.5	34.6	4.3	1.7
Vehicles Entered	4	314	3	264	3	2	2	7	4	603
Vehicles Exited	4	321	4	268	3	2	2	7	4	615
Hourly Exit Rate	16	1284	16	1072	12	8	8	28	16	2460
Input Volume	17	1258	14	1067	15	10	9	24	12	2426
% of Volume	94	102	114	100	80	80	89	117	133	101

100: 400 East & 3900 South Performance by movement Interval #2 4:45

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	4.8	0.1	4.4	0.1	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	9.2	1.3	10.3	0.4	0.1	34.3	5.5	30.0	6.5	1.5
Vehicles Entered	4	310	3	265	3	2	2	6	4	599
Vehicles Exited	4	304	3	260	3	2	2	6	4	588
Hourly Exit Rate	16	1216	12	1040	12	8	8	24	16	2352
Input Volume	17	1258	14	1067	15	10	9	24	12	2426
% of Volume	94	97	86	97	80	80	89	100	133	97

100: 400 East & 3900 South Performance by movement Interval #3 5:00

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	3.9	0.1	4.1	0.2	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
Total Del/Veh (s)	13.8	1.4	13.3	0.5	0.5	31.4	8.9	36.4	8.1	1.6
Vehicles Entered	3	317	4	284	4	3	2	6	3	626
Vehicles Exited	3	325	4	289	4	2	2	6	3	638
Hourly Exit Rate	12	1300	16	1156	16	8	8	24	12	2552
Input Volume	18	1311	14	1112	15	10	9	25	12	2526
% of Volume	67	99	114	104	107	80	89	96	100	101

100: 400 East & 3900 South Performance by movement Interval #4 5:15

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	4.5	0.1	4.1	0.4	0.1
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
Total Del/Veh (s)	9.9	1.4	8.6	0.5	0.2	32.5	7.0	36.8	6.5	1.7
Vehicles Entered	4	323	4	270	4	2	3	7	3	620
Vehicles Exited	4	317	4	267	4	2	2	7	3	610
Hourly Exit Rate	16	1268	16	1068	16	8	8	28	12	2440
Input Volume	17	1258	14	1067	15	10	9	24	12	2426
% of Volume	94	101	114	100	107	80	89	117	100	101

100: 400 East & 3900 South Performance by movement Entire Run

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	4.0	0.1	4.1	0.2	0.1
Total Delay (hr)	0.0	0.5	0.0	0.1	0.0	0.1	0.0	0.3	0.0	1.1
Total Del/Veh (s)	10.3	1.4	11.4	0.4	0.4	29.4	9.4	35.7	6.7	1.6
Vehicles Entered	15	1264	14	1084	14	10	8	26	14	2449
Vehicles Exited	15	1266	14	1084	14	10	8	26	14	2451
Hourly Exit Rate	15	1266	14	1084	14	10	8	26	14	2451
Input Volume	17	1271	14	1078	15	10	9	24	12	2451
% of Volume	87	100	100	101	93	100	89	107	117	100

101: 500 East & 3900 South Performance by movement Interval #1 4:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.1	2.8	0.2	0.2	3.6	0.4	0.5	3.6	0.5	0.5
Total Delay (hr)	0.1	0.4	0.0	0.2	0.4	0.0	0.6	0.3	0.2	0.3	0.6	0.1
Total Del/Veh (s)	14.7	5.2	4.7	24.1	6.8	4.1	81.0	44.1	31.9	46.9	41.4	24.6
Vehicles Entered	18	290	23	24	226	16	23	23	19	20	45	12
Vehicles Exited	18	292	23	25	226	15	20	22	17	18	42	11
Hourly Exit Rate	72	1168	92	100	904	60	80	88	68	72	168	44
Input Volume	69	1125	89	99	902	60	89	96	68	76	167	50
% of Volume	104	104	103	101	100	100	90	92	100	95	101	88

101: 500 East & 3900 South Performance by movement Interval #1 4:30

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.5
Total Delay (hr)	3.1
Total Del/Veh (s)	14.8
Vehicles Entered	739
Vehicles Exited	729
Hourly Exit Rate	2916
Input Volume	2890
% of Volume	101

101: 500 East & 3900 South Performance by movement Interval #2 4:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.7	0.2	0.3	3.6	0.4	0.4	3.6	0.5	0.4
Total Delay (hr)	0.1	0.5	0.0	0.1	0.5	0.0	0.5	0.3	0.1	0.3	0.6	0.1
Total Del/Veh (s)	16.6	6.1	5.7	19.5	7.4	4.6	70.9	43.0	26.3	50.5	43.1	30.6
Vehicles Entered	18	268	23	24	224	17	21	22	17	20	44	13
Vehicles Exited	18	267	23	23	223	17	24	24	19	22	47	13
Hourly Exit Rate	72	1068	92	92	892	68	96	96	76	88	188	52
Input Volume	69	1125	89	99	902	60	89	96	68	76	167	50
% of Volume	104	95	103	93	99	113	108	100	112	116	113	104

101: 500 East & 3900 South Performance by movement Interval #2 4:45

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.4
Total Delay (hr)	3.2
Total Del/Veh (s)	15.4
Vehicles Entered	711
Vehicles Exited	720
Hourly Exit Rate	2880
Input Volume	2890
% of Volume	100

101: 500 East & 3900 South Performance by movement Interval #3 5:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.5	0.2	0.3	3.7	0.5	0.4	3.6	0.4	0.5
Total Delay (hr)	0.1	0.5	0.0	0.2	0.5	0.0	0.5	0.4	0.2	0.3	0.6	0.2
Total Del/Veh (s)	17.6	5.7	5.6	24.3	6.8	6.0	73.5	46.2	30.9	58.3	50.9	40.1
Vehicles Entered	17	294	27	26	239	16	25	27	18	19	40	15
Vehicles Exited	17	294	28	27	240	15	21	26	17	17	39	15
Hourly Exit Rate	68	1176	112	108	960	60	84	104	68	68	156	60
Input Volume	72	1171	93	103	939	63	93	100	71	79	174	53
% of Volume	94	100	120	105	102	95	90	104	96	86	90	113

101: 500 East & 3900 South Performance by movement Interval #3 5:00

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.4
Total Delay (hr)	3.4
Total Del/Veh (s)	15.8
Vehicles Entered	763
Vehicles Exited	756
Hourly Exit Rate	3024
Input Volume	3011
% of Volume	100

101: 500 East & 3900 South Performance by movement Interval #4 5:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	2.6	0.2	0.4	3.7	0.5	0.4	3.6	0.4	0.4
Total Delay (hr)	0.1	0.5	0.0	0.2	0.5	0.0	0.6	0.3	0.2	0.3	0.6	0.1
Total Del/Veh (s)	18.4	6.1	5.6	26.4	7.5	6.0	77.4	45.8	28.1	45.5	42.1	32.7
Vehicles Entered	16	279	20	28	227	14	24	23	18	18	44	14
Vehicles Exited	16	277	20	28	226	14	27	23	20	20	46	14
Hourly Exit Rate	64	1108	80	112	904	56	108	92	80	80	184	56
Input Volume	69	1125	89	99	902	60	89	96	68	76	167	50
% of Volume	93	98	90	113	100	93	121	96	118	105	110	112

101: 500 East & 3900 South Performance by movement Interval #4 5:15

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.5
Total Delay (hr)	3.4
Total Del/Veh (s)	16.2
Vehicles Entered	725
Vehicles Exited	731
Hourly Exit Rate	2924
Input Volume	2890
% of Volume	101

101: 500 East & 3900 South Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	2.6	0.2	0.3	3.7	0.4	0.4	3.6	0.4	0.4
Total Delay (hr)	0.3	1.8	0.1	0.7	1.9	0.1	2.2	1.3	0.6	1.2	2.3	0.5
Total Del/Veh (s)	17.0	5.8	5.6	24.4	7.3	5.4	84.6	48.5	31.3	54.1	47.4	34.8
Vehicles Entered	69	1130	93	103	917	62	92	96	72	77	174	53
Vehicles Exited	68	1130	94	103	916	62	92	96	73	77	174	54
Hourly Exit Rate	68	1130	94	103	916	62	92	96	73	77	174	54
Input Volume	70	1136	90	100	911	61	90	97	69	77	169	51
% of Volume	97	99	104	103	101	102	102	99	106	100	103	106

101: 500 East & 3900 South Performance by movement Entire Run

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.4
Total Delay (hr)	13.2
Total Del/Veh (s)	16.0
Vehicles Entered	2938
Vehicles Exited	2939
Hourly Exit Rate	2939
Input Volume	2920
% of Volume	101

200: 3900 South & Project Access Performance by movement Interval #1 4:30

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.8	0.0	0.0	0.0		0.1	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	6.2	0.4	0.9	1.1	14.8	2.7	0.7
Vehicles Entered	1	329	267	2	0	1	600
Vehicles Exited	1	333	268	2	1	1	606
Hourly Exit Rate	4	1332	1072	8	4	4	2424
Input Volume	5	1286	1087	8	4	3	2393
% of Volume	80	104	99	100	100	133	101

200: 3900 South & Project Access Performance by movement Interval #2 4:45

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)		0.3	0.9	0.9	18.5	7.8	0.6
Vehicles Entered	0	312	270	1	1	1	585
Vehicles Exited	0	307	267	1	1	1	577
Hourly Exit Rate	0	1228	1068	4	4	4	2308
Input Volume	5	1286	1087	8	4	3	2393
% of Volume	0	95	98	50	100	133	96

200: 3900 South & Project Access Performance by movement Interval #3 5:00

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.5	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.9	0.4	0.9	1.1	27.0	10.4	0.7
Vehicles Entered	2	333	289	2	1	1	628
Vehicles Exited	2	337	293	2	1	1	636
Hourly Exit Rate	8	1348	1172	8	4	4	2544
Input Volume	5	1341	1132	8	4	3	2493
% of Volume	160	101	104	100	100	133	102



200: 3900 South & Project Access Performance by movement Interval #4 5:15

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.4	0.0	0.0	0.0		0.1	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	8.6	0.4	1.0	0.8		3.8	0.7
Vehicles Entered	1	322	279	2	0	1	605
Vehicles Exited	1	318	275	2	0	1	597
Hourly Exit Rate	4	1272	1100	8	0	4	2388
Input Volume	5	1286	1087	8	4	3	2393
% of Volume	80	99	101	100	0	133	100

200: 3900 South & Project Access Performance by movement Entire Run

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.4	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.3	0.0	0.0	0.0	0.5
Total Del/Veh (s)	5.2	0.4	0.9	0.9	24.0	6.8	0.7
Vehicles Entered	5	1296	1106	8	3	4	2422
Vehicles Exited	5	1295	1104	8	3	4	2419
Hourly Exit Rate	5	1295	1104	8	3	4	2419
Input Volume	5	1300	1098	8	4	3	2418
% of Volume	100	100	101	100	75	133	100

Total Zone Performance By Interval

Interval Start	4:30	4:45	5:00	5:15	All
Denied Delay (hr)	0.1	0.1	0.1	0.1	0.4
Denied Del/Veh (s)	0.8	0.8	0.8	0.8	0.8
Total Delay (hr)	3.5	3.5	3.9	3.8	14.7
Total Del/Veh (s)	104.1	97.2	107.7	104.4	141.7
Vehicles Entered	504	498	528	502	2032
Vehicles Exited	78	76	87	78	321
Hourly Exit Rate	312	304	348	312	321
Input Volume	7709	7709	8030	7709	7789
% of Volume	4	4	4	4	4

Intersection: 100: 400 East & 3900 South, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	37	53	56	35	48	49	26	30	44	31
Average Queue (ft)	14	11	12	10	9	8	9	8	21	12
95th Queue (ft)	41	60	58	35	58	61	32	32	52	37
Link Distance (ft)		725	725		234	234		680		632
Upstream Blk Time (%)					0	0				
Queuing Penalty (veh)					0	0				
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)		0					0	0		
Queuing Penalty (veh)		0					0	0		

Intersection: 100: 400 East & 3900 South, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	35	33	26	33	26	20	28	24	44	31
Average Queue (ft)	11	6	4	9	5	5	10	8	23	12
95th Queue (ft)	37	37	35	33	26	24	33	30	54	36
Link Distance (ft)		725	725		234	234		680		632
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)								0		
Queuing Penalty (veh)								0		

Intersection: 100: 400 East & 3900 South, Interval #3

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	27	42	42	37	47	46	33	31	39	31
Average Queue (ft)	9	6	8	12	9	10	10	7	20	11
95th Queue (ft)	31	38	53	39	48	52	33	28	48	35
Link Distance (ft)		725	725		234	234		680		632
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)					0		0			
Queuing Penalty (veh)					0		0			

Intersection: 100: 400 East & 3900 South, Interval #4

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	31	25	32	31	56	45	34	33	46	33
Average Queue (ft)	10	5	6	13	9	7	10	9	24	13
95th Queue (ft)	32	29	36	37	54	45	36	33	56	39
Link Distance (ft)		725	725		234	234		680		632
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)					0		0	0		
Queuing Penalty (veh)					0		0	0		

Intersection: 100: 400 East & 3900 South, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	39	83	90	39	91	94	39	38	59	33
Average Queue (ft)	11	7	7	11	8	7	10	8	22	12
95th Queue (ft)	36	42	46	36	48	48	33	31	53	37
Link Distance (ft)		725	725		234	234		680		632
Upstream Blk Time (%)					0	0				
Queuing Penalty (veh)					0	0				
Storage Bay Dist (ft)	100			100			60		100	
Storage Blk Time (%)		0			0		0	0		
Queuing Penalty (veh)		0			0		0	0		

Intersection: 101: 500 East & 3900 South, Interval #1

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	71	195	163	103	201	188	119	242	130	217
Average Queue (ft)	35	110	105	58	136	116	80	130	66	139
95th Queue (ft)	70	191	176	109	213	201	141	258	136	231
Link Distance (ft)		453	453		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1			1		28	24	5	29
Queuing Penalty (veh)		0			1		46	21	12	22

Intersection: 101: 500 East & 3900 South, Interval #2

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	62	167	174	87	210	178	123	239	172	263
Average Queue (ft)	35	107	112	47	129	99	88	146	88	178
95th Queue (ft)	65	180	183	84	209	187	138	280	177	287
Link Distance (ft)		453	453		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1			1		28	22	9	33
Queuing Penalty (veh)		0			1		45	20	19	25

Intersection: 101: 500 East & 3900 South, Interval #3

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	69	197	192	108	247	226	128	241	142	262
Average Queue (ft)	36	120	126	56	151	127	88	141	66	154
95th Queue (ft)	68	198	198	103	255	232	148	250	143	289
Link Distance (ft)		453	453		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1			2		29	26	12	37
Queuing Penalty (veh)		1			2		49	24	27	29

Intersection: 101: 500 East & 3900 South, Interval #4

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	78	172	185	131	219	213	123	227	143	226
Average Queue (ft)	38	111	114	63	133	108	96	149	81	179
95th Queue (ft)	77	179	193	122	218	206	145	279	165	253
Link Distance (ft)		453	453		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1			1		35	25	7	36
Queuing Penalty (veh)		0			1		58	22	15	27

Intersection: 101: 500 East & 3900 South, All Intervals

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	93	223	221	148	278	249	129	316	199	316
Average Queue (ft)	36	112	114	56	137	113	88	142	75	162
95th Queue (ft)	71	188	189	106	226	208	144	268	157	271
Link Distance (ft)		453	453		885	885		683		689
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	180			190			80		90	
Storage Blk Time (%)		1			1		30	24	8	34
Queuing Penalty (veh)		1			1		49	22	18	26

Intersection: 200: 3900 South & Project Access, Interval #1

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	18	6	28
Average Queue (ft)	4	1	7
95th Queue (ft)	20	12	28
Link Distance (ft)		453	377
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: 3900 South & Project Access, Interval #2

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	6	28
Average Queue (ft)	1	7
95th Queue (ft)	9	28
Link Distance (ft)		377
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Intersection: 200: 3900 South & Project Access, Interval #3**

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	22	25
Average Queue (ft)	4	8
95th Queue (ft)	22	29
Link Distance (ft)		377
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Intersection: 200: 3900 South & Project Access, Interval #4**

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	22	28
Average Queue (ft)	4	4
95th Queue (ft)	22	21
Link Distance (ft)		377
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	100	
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Intersection: 200: 3900 South & Project Access, All Intervals**

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	31	6	31
Average Queue (ft)	3	0	6
95th Queue (ft)	19	6	27
Link Distance (ft)		453	377
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		
Storage Blk Time (%)			
Queuing Penalty (veh)			

**Zone Summary**

Zone wide Queuing Penalty, Interval #1: 103  
 Zone wide Queuing Penalty, Interval #2: 111  
 Zone wide Queuing Penalty, Interval #3: 132  
 Zone wide Queuing Penalty, Interval #4: 124  
 Zone wide Queuing Penalty, All Intervals: 117

# APPENDIX C

## Site Plan

1042 E FORT UNION BLVD  
#555 SALT LAKE CITY, UT 84087



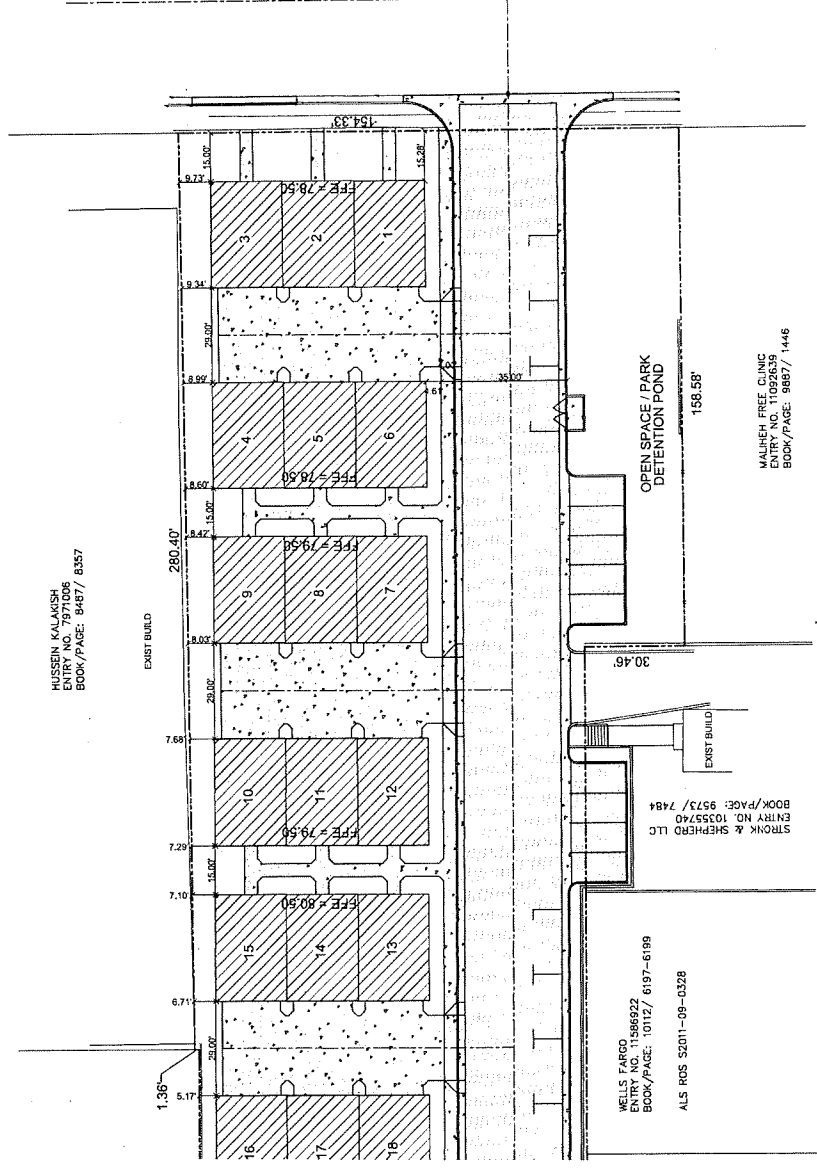
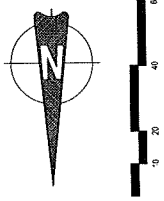
REV	DATE	DESCRIPTION

**GRANITE PEAKS**  
441 EAST 3900 SOUTH  
SOUTH SALT LAKE CITY, UTAH

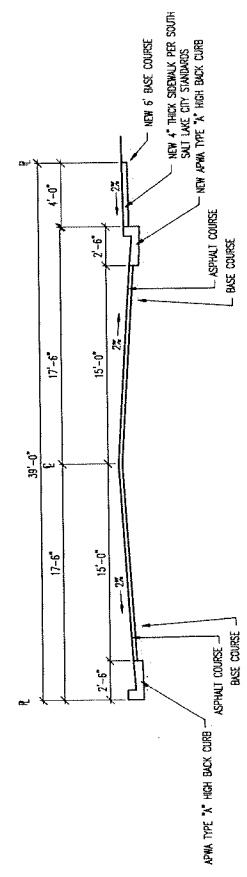
PROJECT NO:	JTD
DRAWN BY:	JTD
CALC BY:	JTD
CHECKED BY:	JTD
DATE:	3-4-18

SITE PLAN

C1.0



HUSSEN KALKISH  
ENTRY NO. 7971006  
BOOK/PAGE: 8487 / 8387





# **APPENDIX D**

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



# SimTraffic Queuing Report

Project: South Salt Lake - Granite Peaks TIS

Analysis: Existing (2018) Plus Project

Time Period: Evening Peak Hour

95<sup>th</sup> Percentile Queue Length (feet)

**HALES** ENGINEERING  
innovative transportation solutions

Project #: UT18-1223

Intersection	EB		NB		SB		WB				
	L	TR	L	TR	L	TR	L	TR			
3900 South & Project Access	19	--	--	--	--	27	--	--	6		
400 East & 3900 South	36	42	46	33	31	53	--	37	36	48	48
500 East & 3900 South	71	188	189	144	268	157	--	271	106	226	208