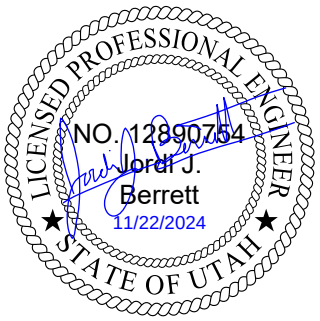
MEMORANDUM



Date: November 22, 2024

To: Taylorsville City

From: Hales Engineering

Subject: Taylorsville Taylor Villas TIS Addendum

UT24-2865

Introduction

This memo addresses the traffic impacts associated with the updated Taylor Villas development site plan located southeast of the 4070 West / 6200 South intersection in Taylorsville, Utah. A full traffic impact study (TIS) was completed by Hales Engineering for a previous site plan, dated October 11, 2024. The purpose of this memo is to analyze traffic operations at key intersections for existing (2024) plus project conditions for the new site plan and address some public concerns with the development.

Project Description

The proposed Taylor Villas development is located southeast of the 4070 West / 6200 South intersection. Currently, the development is planned to include 9 single-family detached housing units and 41 townhomes. The proposed land use for the development has been identified in Table 1. A site plan for the development is included in Appendix A.

Table 1: Project Land Uses

Land Use	Intensity
Single-family detached housing	9 Units
Townhomes	41 Units

Trip Generation

Trip generation for the proposed development was calculated using trip generation rates published in the Institute of Transportation Engineers (ITE), *Trip Generation*, 11th Edition, 2021. Trip generation for the proposed project is included in Table 2.

The total trip generation for the concept is as follows:

- Daily Trips: 374
- Morning Peak Hour Trips: 26
- Evening Peak Hour Trips: 34

Table 2: Trip Generation

Trip Generation Taylorsville - Taylor Villas TIS								
Land Use[1]	# of Units	Unit Type	Trip Generation			New Trips		
			Total	% In	% Out	In	Out	Total
Weekday Daily								
Single-Family Detached Housing (210)	9	DU	112	50%	50%	56	56	112
Single-Family Attached Housing (215)	41	DU	262	50%	50%	131	131	262
TOTAL			**374**			**187**	**187**	**374**
AM Peak Hour								
Single-Family Detached Housing (210)	9	DU	10	26%	74%	3	7	10
Single-Family Attached Housing (215)	41	DU	16	31%	69%	5	11	16
TOTAL			**26**			**8**	**18**	**26**
PM Peak Hour								
Single-Family Detached Housing (210)	9	DU	12	63%	37%	8	4	12
Single-Family Attached Housing (215)	41	DU	22	57%	43%	13	9	22
TOTAL			**34**			**21**	**13**	**34**
1. Land Use Code from the Institute of Transportation Engineers (ITE) *Trip Generation*, 11th Edition, 2021. SOURCE: Hales Engineering, November 2024								

An equivalent land use configuration of approximately 30 single-family detached homes would generate the same number of morning and evening peak hour trips as the proposed 50-unit configuration split between single-family and townhome units.

Trip Distribution and Assignment

Trip distribution percentages for new trips were 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 were also used to establish these distribution percentages, especially near the site. The assumed distribution of new trips during the morning and evening peak hour is shown in Table 3.

Table 3: New Trip Distribution

Direction	% To/From Project
North	10%
East	55%
West	35%

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 1. Existing (2024) plus project morning and evening peak hour turning movement volumes are shown in Figure 2.

Level of Service and Queueing Analysis

Per public concern, the Hazy Way / 3975 West intersection was included in the updated analysis. Based on the latest site plan, 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 Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing was observed during the morning and evening peak hours. Detailed queueing results can be found in Appendix C.

Table 4. Detailed LOS results can be found in Appendix B.

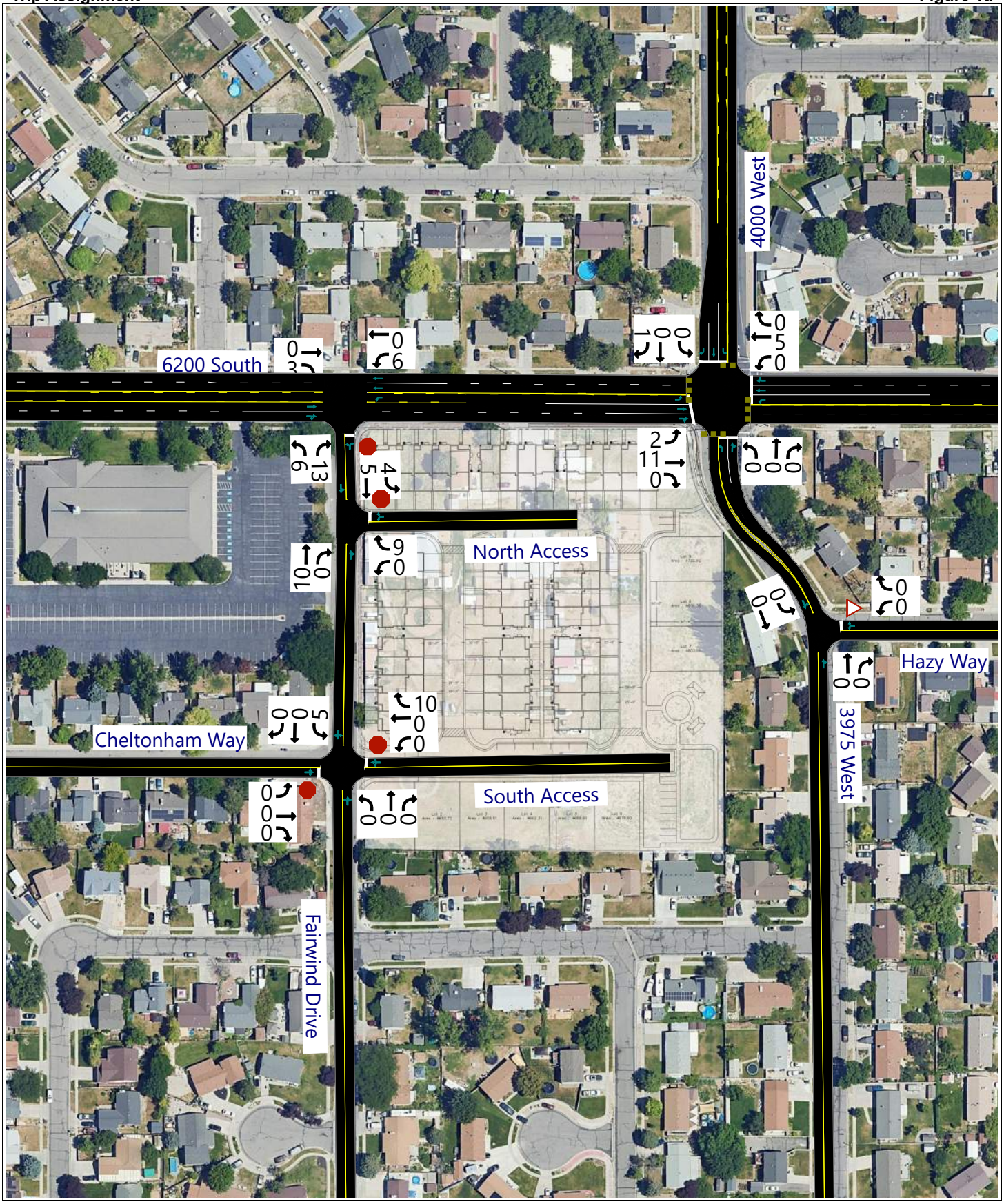
Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing was observed during the morning and evening peak hours. Detailed queueing results can be found in Appendix C.

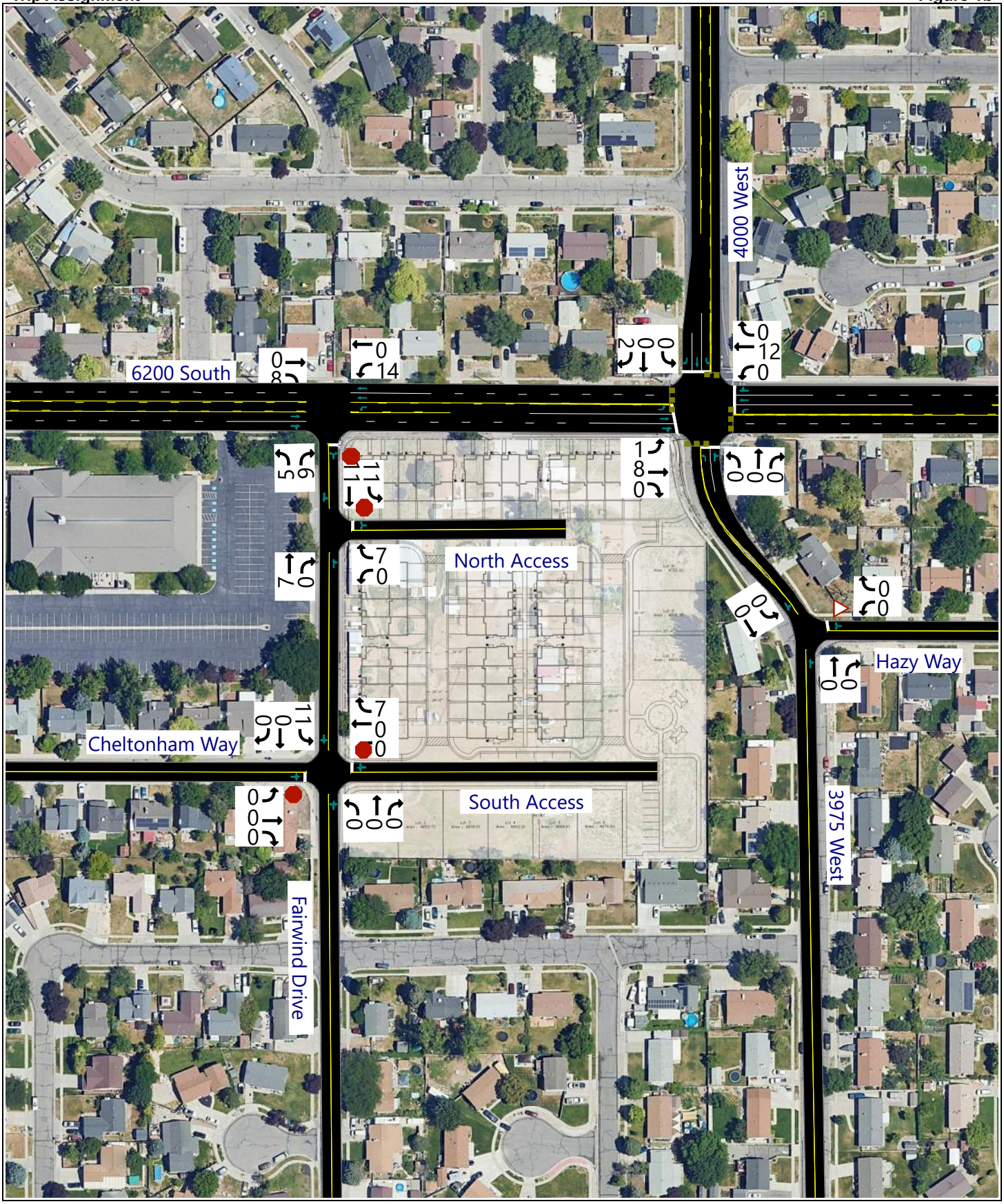
Table 4: Existing (2024) Plus Project Peak Hour LOS

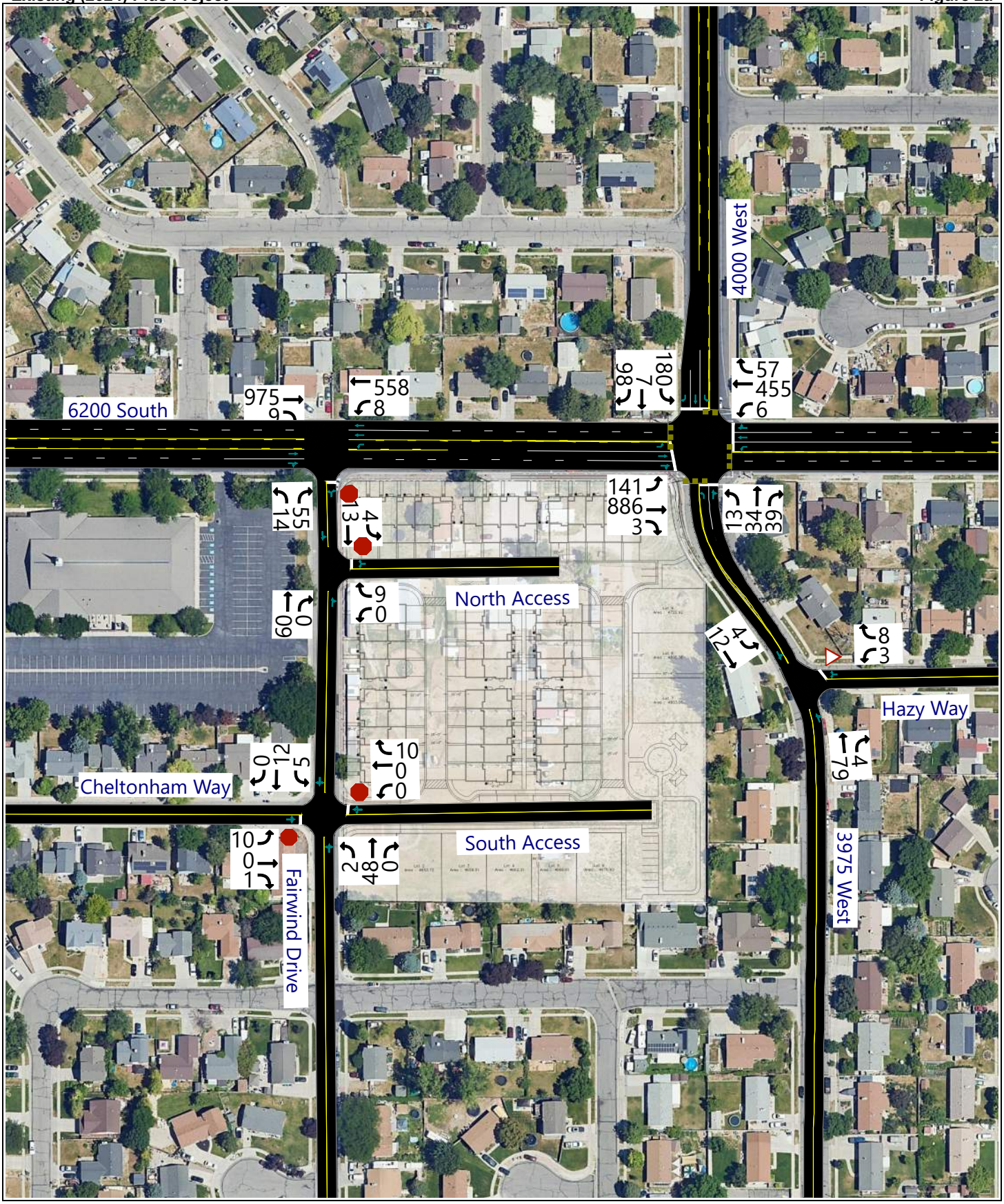
Intersection		LOS (Sec. Delay / Veh.) / Movement[1]	
Description	Control	Morning Peak	Evening Peak
3975 West & 4000 West / 6200 South	Signal	B (13.4)	B (16.0)
Fairwind Drive / 6200 South	NB Stop	c (20.6) / NBL	c (15.4) / NBL
Cheltonham Way & South Access / Fairwind Drive	EB/WB Stop	a (5.2) / EBL	a (4.6) / EBL
North Access / Fairwind Drive	WB Stop	a (4.0) / WBR	a (4.1) / WBR
Hazy Way / 3975 West	WB Yield	a (2.9) / SBL	a (5.5) / SBL

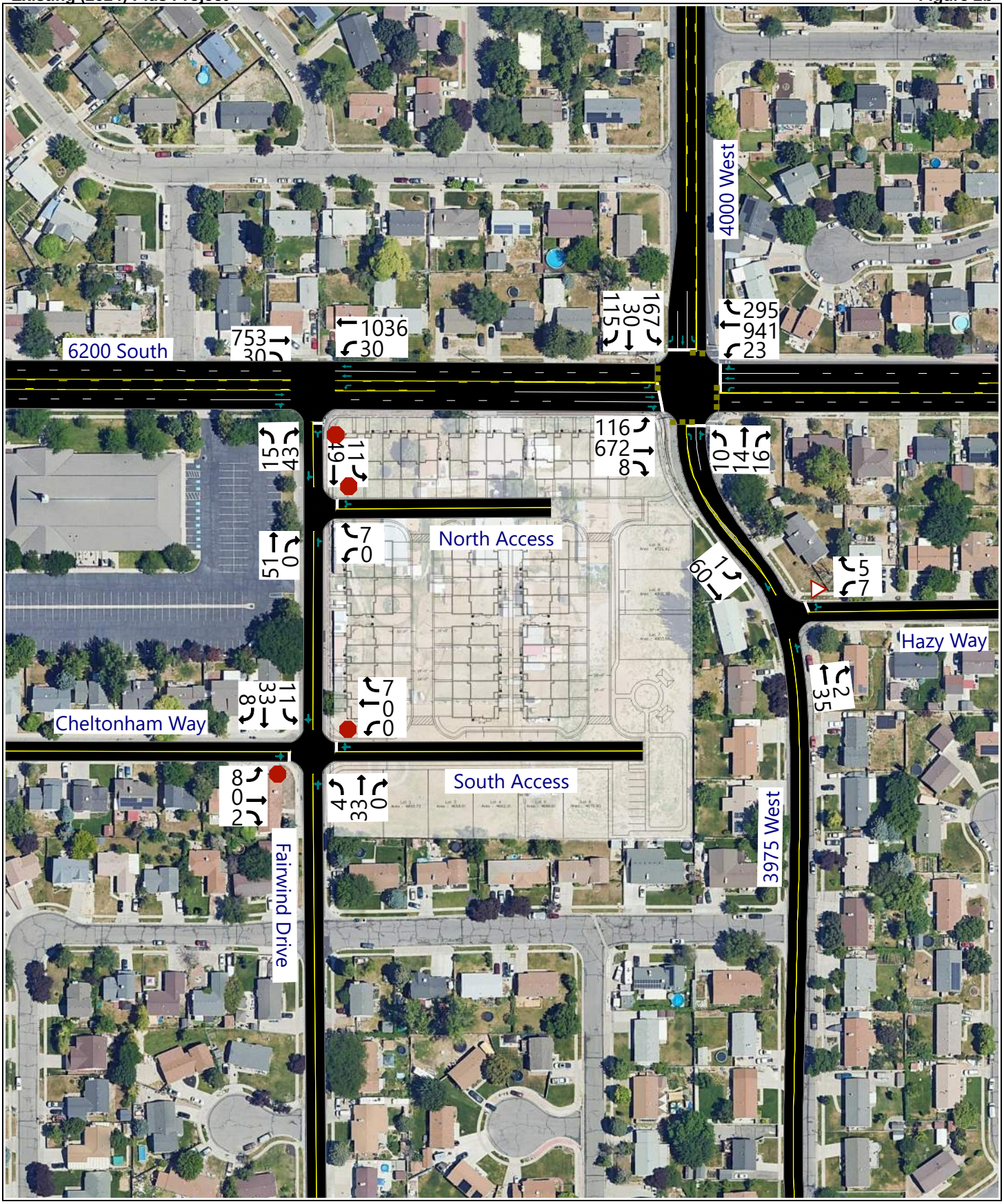
1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, November 2024


6200 South
4000 West
North Access
South Access
Cheltonham Way
Hazy Way
3975 West
Fairwind Drive


6200 South
4000 West
North Access
South Access
Cheltonham Way
Fairwind Drive
Hazy Way
3975 West


6200 South
4000 West
North Access
South Access
Cheltonham Way
Fairwind Drive
Hazy Way
3975 West
975 9
558 8
180 7 98
57 455 6
55 14
4 13
141 886 3
13 34 39
0 09
9 0
4 12
8 3
4 79
5 21 0
10 0 0
10 0 1
0 48 2


6200 South
4000 West
3975 West
Hazy Way
Fairwind Drive
Cheltonham Way
North Access
South Access
753
30
1036
30
167
30
115
295
941
23
116
672
8
10
14
16
15
43
49
11
7
0
51
0
1
60
5
7
2
35
11
33
8
7
0
0
8
0
2
4
33
0

Conclusions

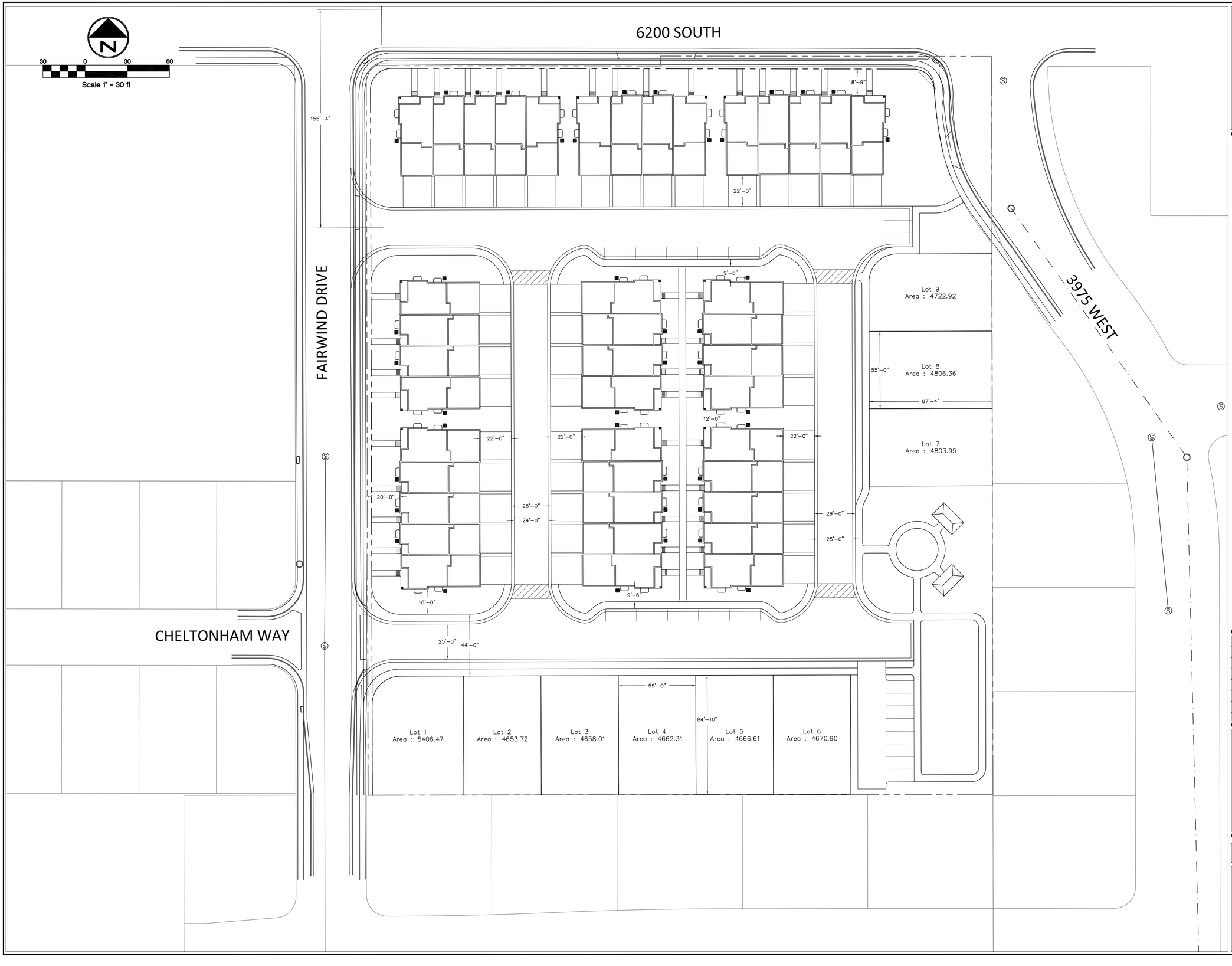
The findings of this study are as follows:

- It is anticipated that the proposed 9 single-family and 41 townhome units will generate 374 total daily trips, including 26 and 34 morning and evening peak hour trips, respectively.
    - An alternate configuration of approximately 30 single-family detached homes would generate the same number of morning and evening peak hour trips.
- It is anticipated that all study intersections will operate at an acceptable level of service with minimal impact from the proposed development.

If you have any questions regarding this memorandum, please contact us at 801.766.4343.

APPENDIX A

Site Plan



WILDING
ENGINEERING
14721 South Heritage Crest Way
Bluffdale, Utah 84065
801.553.8112
www.wildingengineering.com

DRAWING NOTES:

1. TOTAL NUMBER OF UNITS: 50
   - 41 REAR LOADING UNITS
   - 9 SINGLE FAMILY LOTS
2. VISITOR PARKING: 21 STALLS
3. TOWNHOUSE RESIDENT PARKING: 4 PER UNIT – 164 TOTAL
4. 5' PARKSTRIP AND 6' SIDEWALK TO BE INSTALLED ALONG FAIRWIND DRIVE AND 6200 SOUTH

G:\DATA\24253 Guymon Taylorsville\dwg\Concept Plans\Taylorsville Townhome Concept New Layout.dwg
PLOT DATE: Nov 13, 2024

NO.	REVISION	DATE

PROJECT INFORMATION

TAYLOR VILLAS

CONCEPT PLAN

TAYLORSVILLE, UTAH

DRAWN	CHECKED	PROJECT #
KCW	GDW	24253

DATE: 11/13/2024

SCALE: 1" = 30'

SHEET: C101

ENGINEER'S STAMP

APPENDIX B

LOS Results

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Taylorsville - Taylor Villa TIS
Analysis Period: *Existing (2024) Plus Project*
Time Period: *Morning Peak Hour* **Project #:** *UT24-2865*

Intersection: 3975 West/4000 West & 6200 South
Type: Signalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	13	12	92	109.4	*F*
	T	34	34	99	70.1	*E*
	R	39	40	102	33.0	*C*
	Subtotal	86	86	100	58.3	*E*
SB	L	180	179	99	82.7	*F*
	T	7	6	86	58.9	*E*
	R	98	99	101	12.1	*B*
	Subtotal	285	284	100	57.6	*E*
EB	L	141	145	103	12.3	*B*
	T	939	942	100	5.4	*A*
	R	3	3	100	3.7	*A*
	Subtotal	1,083	1,090	101	6.3	*A*
WB	L	6	6	100	14.8	*B*
	T	455	444	98	6.3	*A*
	R	57	58	102	3.0	*A*
	Subtotal	518	508	98	6.0	*A*
Total		1,972	1,968	100	16.0	*B*

Intersection: Fairwind Drive & 6200 South
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	***L***	***14***	***13***	***93***	***15.4***	***C***
	T	3	3	100	0.8	*A*
	R	55	58	105	7.4	*A*
	Subtotal	72	74	103	8.5	*A*
EB	T	975	980	100	1.1	*A*
	R	9	10	114	0.6	*A*
	Subtotal	984	990	101	1.1	*A*
WB	L	8	8	103	8.0	*A*
	T	587	576	98	1.2	*A*
	Subtotal	595	584	98	1.3	*A*
Total		1,651	1,648	100	1.5	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Taylorsville - Taylor Villa TIS
Analysis Period: *Existing (2024) Plus Project*
Time Period: *Morning Peak Hour* **Project #:** *UT24-2865*

Intersection: Fairwind Drive & Cheltonham Way/South Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	2	1	44	2.8	*A*
	T	48	50	104	0.0	*A*
	Subtotal	50	51	102	0.1	*A*
SB	L	5	4	80	1.7	*A*
	T	12	14	117	0.0	*A*
	Subtotal	17	18	106	0.4	*A*
EB	***L***	***10***	***9***	***90***	***4.6***	***A***
	R	1	2	200	3.3	*A*
	Subtotal	11	11	100	4.4	*A*
WB	R	10	11	110	3.9	*A*
	Subtotal	10	11	110	3.9	*A*
Total		88	91	103	1.2	*A*

Intersection: 3975 West & Hazy Way
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	79	76	97	0.2	*A*
	R	4	3	75	0.0	*A*
	Subtotal	83	79	95	0.2	*A*
SB	***L***	***4***	***4***	***100***	***5.5***	***A***
	T	12	11	92	1.5	*A*
	Subtotal	16	15	94	2.6	*A*
WB	L	3	4	133	2.1	*A*
	R	8	10	125	1.5	*A*
	Subtotal	11	14	127	1.7	*A*
Total		110	108	98	0.7	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Taylorsville - Taylor Villa TIS**
Analysis Period: ***Existing (2024) Plus Project***
Time Period: ***Morning Peak Hour*** **Project #:** ***UT24-2865***

Intersection: **Fairwind Drive & North Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	68	70	103	0.5	*A*
	Subtotal	68	70	103	0.5	*A*
SB	L	4	5	125	2.5	*A*
	T	14	15	107	0.5	*A*
	Subtotal	18	20	111	1.0	*A*
WB	***R***	***9***	***10***	***111***	***4.1***	***A***
	Subtotal	9	10	111	4.1	*A*
Total		95	100	105	1.0	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Taylorsville - Taylor Villa TIS
Analysis Period: *Existing (2024) Plus Project*
Time Period: *Evening Peak Hour* **Project #:** *UT24-2865*

Intersection: 3975 West/4000 West & 6200 South
Type: Signalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	10	9	90	163.8	*F*
	T	15	15	100	67.2	*E*
	R	16	16	100	15.4	*B*
	Subtotal	41	40	98	68.2	*E*
SB	L	167	166	99	61.2	*E*
	T	30	31	102	53.4	*D*
	R	115	121	105	9.5	*A*
	Subtotal	312	318	102	40.8	*D*
EB	L	116	119	103	24.7	*C*
	T	711	712	100	4.8	*A*
	R	8	8	100	3.6	*A*
	Subtotal	835	839	100	7.6	*A*
WB	L	23	23	100	13.0	*B*
	T	941	943	100	8.8	*A*
	R	295	296	100	7.5	*A*
	Subtotal	1,259	1,262	100	8.6	*A*
Total		2,447	2,459	100	13.4	*B*

Intersection: Fairwind Drive & 6200 South
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	***L***	***15***	***12***	***80***	***20.6***	***C***
	T	3	3	100	0.2	*A*
	R	43	44	102	6.2	*A*
	Subtotal	61	59	97	8.8	*A*
EB	T	753	750	100	0.9	*A*
	R	30	33	109	0.4	*A*
	Subtotal	783	783	100	0.9	*A*
WB	L	30	30	99	7.8	*A*
	T	1,089	1,099	101	1.9	*A*
	Subtotal	1,119	1,129	101	2.1	*A*
Total		1,964	1,971	100	1.8	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Taylorsville - Taylor Villa TIS
Analysis Period: *Existing (2024) Plus Project*
Time Period: *Evening Peak Hour* **Project #:** *UT24-2865*

Intersection: Fairwind Drive & Cheltonham Way/South Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	4	5	118	2.2	*A*
	T	33	34	104	0.0	*A*
	Subtotal	37	39	105	0.3	*A*
SB	L	11	10	91	2.1	*A*
	T	33	38	116	0.1	*A*
	R	8	9	109	0.0	*A*
	Subtotal	52	57	110	0.4	*A*
EB	***L***	***8***	***7***	***85***	***5.2***	***A***
	R	2	3	150	3.4	*A*
	Subtotal	10	10	100	4.7	*A*
WB	R	7	6	86	4.3	*A*
	Subtotal	7	6	86	4.3	*A*
Total		106	112	105	1.0	*A*

Intersection: Fairwind Drive & North Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	52	51	99	0.5	*A*
	Subtotal	52	51	98	0.5	*A*
SB	L	11	10	91	1.9	*A*
	T	53	58	109	0.7	*A*
	Subtotal	64	68	106	0.9	*A*
WB	***R***	***7***	***6***	***86***	***4.0***	***A***
	Subtotal	7	6	86	4.0	*A*
Total		123	125	102	0.8	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Taylorsville - Taylor Villa TIS**
Analysis Period: ***Existing (2024) Plus Project***
Time Period: ***Evening Peak Hour*** **Project #:** ***UT24-2865***

Intersection: **3975 West & Hazy Way**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	35	34	96	0.1	*A*
	R	2	2	100	0.0	*A*
	Subtotal	37	36	97	0.1	*A*
SB	***L***	***1***	***1***	***100***	***2.9***	***A***
	T	60	62	103	1.7	*A*
	Subtotal	61	63	103	1.7	*A*
WB	L	7	6	86	2.7	*A*
	R	5	4	80	1.5	*A*
	Subtotal	12	10	83	2.2	*A*
Total		110	109	99	1.3	*A*

HALES ENGINEERING
innovative transportation solutions

APPENDIX C

Queueing Results

1220 North 500 West, Ste. 202 Lehi, UT 84043 p 801.766.4343
www.halesengineering.com

SimTraffic Queueing Report

Project: Taylorsville - Taylor Villa TIS

Analysis: Existing (2024) Plus Project

Time Period: Morning Peak Hour

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

HALES ENGINEERING
innovative transportation solutions

Project #: UT24-2865

Intersection	NB				SB				EB				WB				
	L	LR	LTR	TR	L	LT	R	T	L	LTR	T	TR	L	LR	LTR	T	TR
01: 3975 West/4000 West & 6200 South	50			125	200		100	325	100		175	175				150	100
02: Fairwind Drive & 6200 South		75															
03: Fairwind Drive & Cheltonham Way/South Access										50					50		
04: 3975 West & Hazy Way																	
05: Fairwind Drive & North Access														50			

SimTraffic Queueing Report

Project: Taylorsville - Taylor Villa TIS

Analysis: Existing (2024) Plus Project

Time Period: Evening Peak Hour

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

HALES ENGINEERING
innovative transportation solutions

Project #: UT24-2865

Intersection	NB				SB					EB				WB				
	L	LR	LTR	TR	L	LT	LTR	R	T	L	LTR	T	TR	L	LR	LTR	T	TR
01: 3975 West/4000 West & 6200 South	50			75	200			100	200	125		125	125	75			250	275
02: Fairwind Drive & 6200 South		75												50			50	
03: Fairwind Drive & Cheltonham Way/South Access											50					50		
04: Fairwind Drive & North Access															25			
05: 3975 West & Hazy Way																		