PUBLIC NOTICE

Notice is Hereby Given that the Tooele City Council and the Tooele City Redevelopment Agency will meet in a Work Meeting, on Wednesday, June 15, 2022, at 5:30 p.m. The Meeting will be Held in the Tooele City Hall Council Chambers, Located at 90 North Main Street, Tooele, Utah.

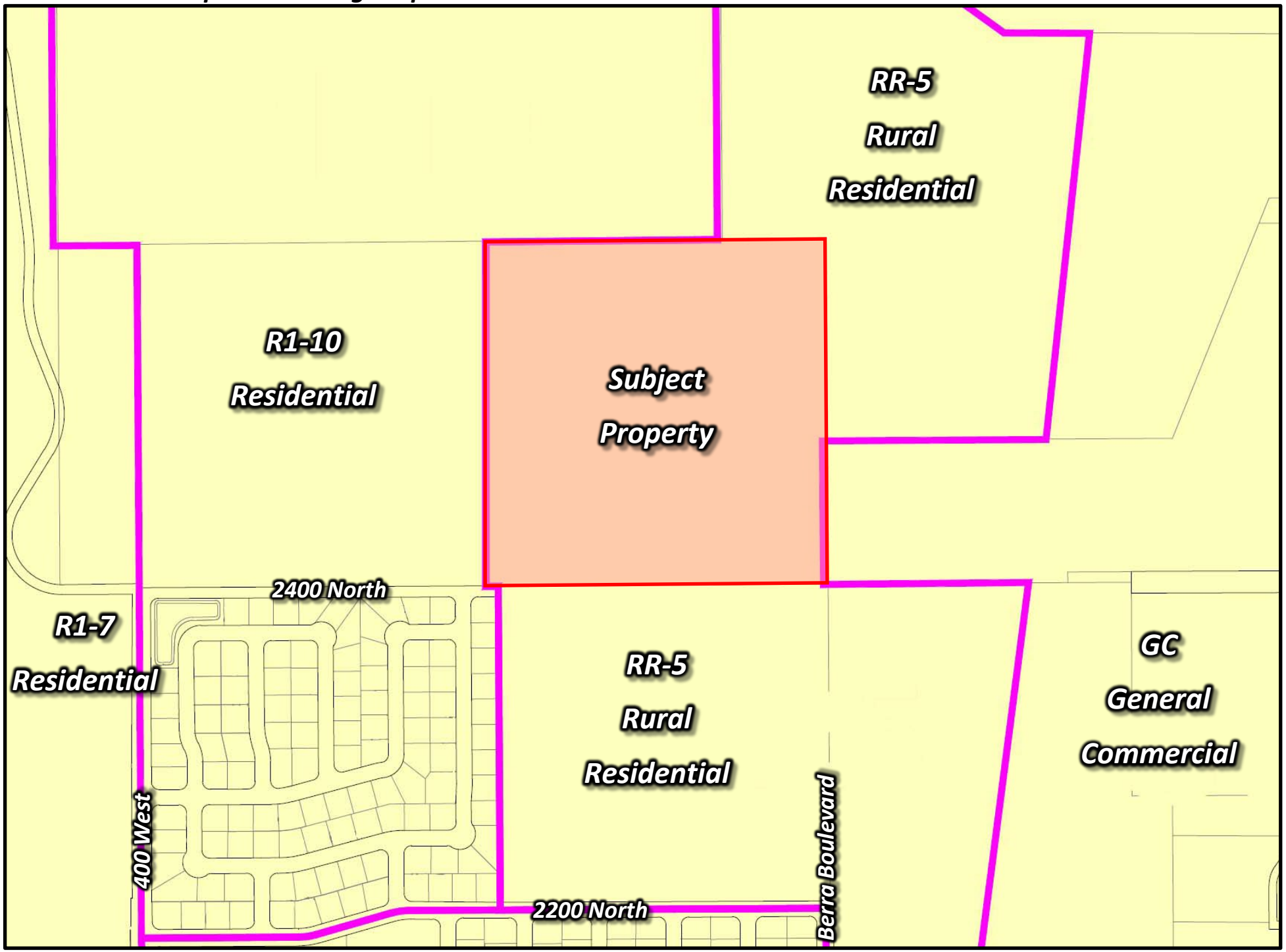
We encourage you to join the City Council meeting electronically by logging on to the Tooele City Facebook page at https://www.facebook.com/tooelecity.

1. **Open City Council Meeting**
2. **Roll Call**
3. **Mayor's Report**
4. **Council Members' Report**
5. **Discussion Items**
   a. **Zoning Map Amendment Request** by Shawn Holste for the Crestview Development to Reassign Approximately 23.6 Acres from the RR-5 Rural Residential Zoning District to the MR-16 Multi-Family Residential Zoning District and Approximately 16.4 Acres from the RR-5 Rural Residential Zoning District to the R1-10 Residential Zoning District Generally Located at 2400 North 200 West (continued from August 18, 2021)
      Presented by Jim Bolser, Community Development Director
   b. **Canyon Springs Annexation Petition** for Approximately 61.16 Acres Located at Approximately 750 North Droubay Road (continued from January 19, 2022)
      Presented by Jim Bolser, Community Development Director
   c. **Proposed City Code Text Amendment** to Table 1 of Chapter 7-16 of the Tooele City Code Regarding Heavy Equipment Rental and Sales in Non-Residential Zoning Districts
      Presented by Jim Bolser, Community Development Director
   d. **Water Share Request** from Tooele County Housing Authority
      Presented by Debbie Winn, Mayor
6. **Closed Meeting**
   ~ Litigation, Property Acquisition, and/or Personnel
7. **Adjourn**

_____
Michelle Y. Pitt, Tooele City Recorder

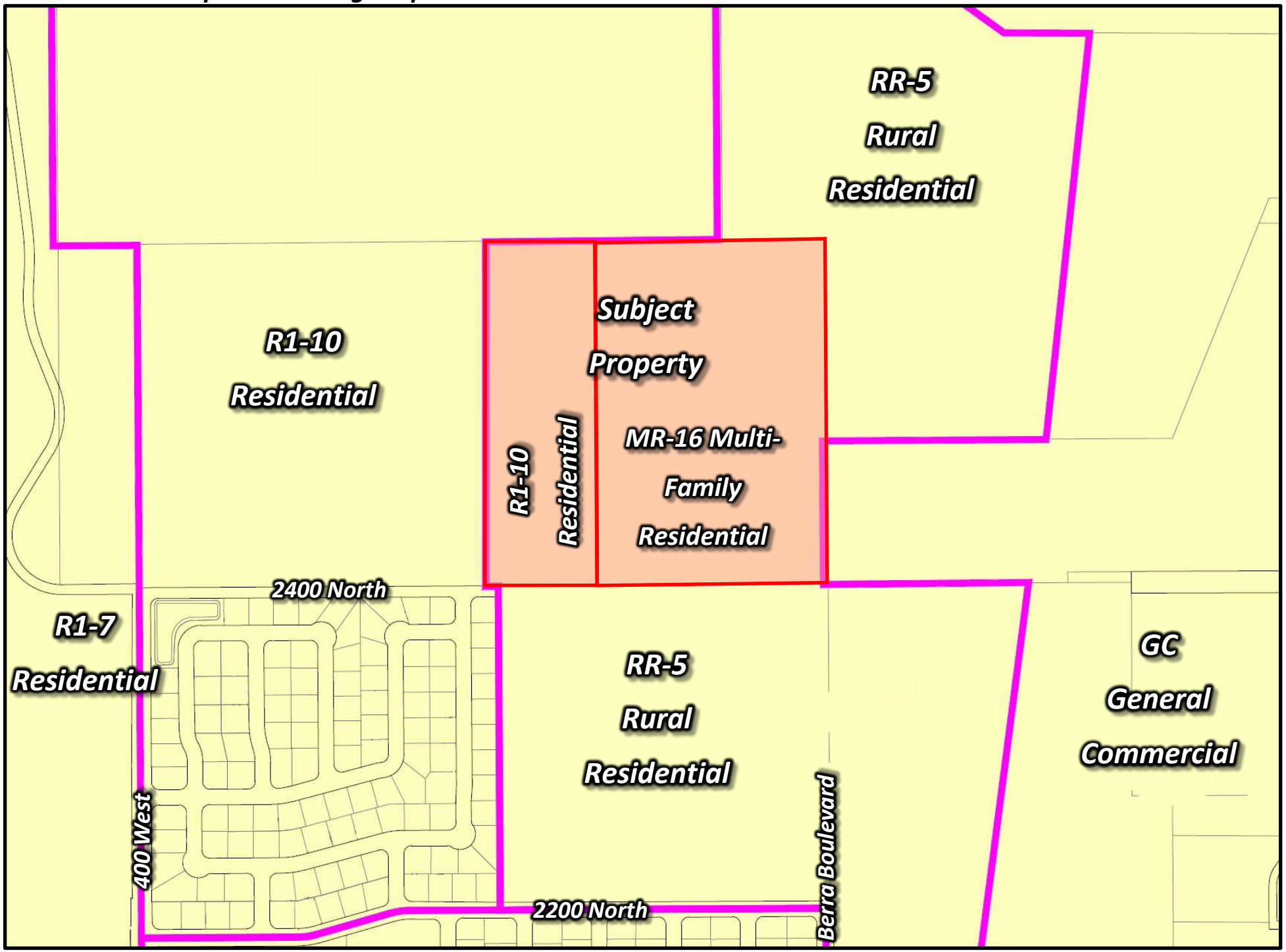
Pursuant to The Americans With Disabilities Act, Individuals Needing Special Accommodations Should Notify Michelle Y. Pitt, Tooele City Recorder, At 435-843-2111 Or Michellep@Tooelecity.Org, Prior To The Meeting.

Crestview Development Zoning Map Amendment



Current Zoning Map

Crestview Development Zoning Map Amendment



Proposed Zoning Map

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GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100ft.

CONCEPT TABULATIONS

TOTAL ACREAGE	±80.12 ACRES
SINGLE FAMILY LOTS	117
TOWNHOME UNITS	202
TOTAL UNITS	319
TOTAL DENSITY	3.98 UNITS/ACRE
OPEN SPACE & BASIN	2.11 ACRES
CUL-DE-SAC RADIUS:	59'
ROW WIDTH:	60'
PRIVATE ROAD WIDTH:	26'

14,000 SQFT LOTS

10,000 SQFT LOTS

MULTI-FAMILY TABULATIONS

TOWNHOME UNITS	202
PRIVATE PARKING	808 (4 STALLS PER UNIT)
GUEST PARKING	97
TOTAL PARKING	905
PARKING RATIO	4.48

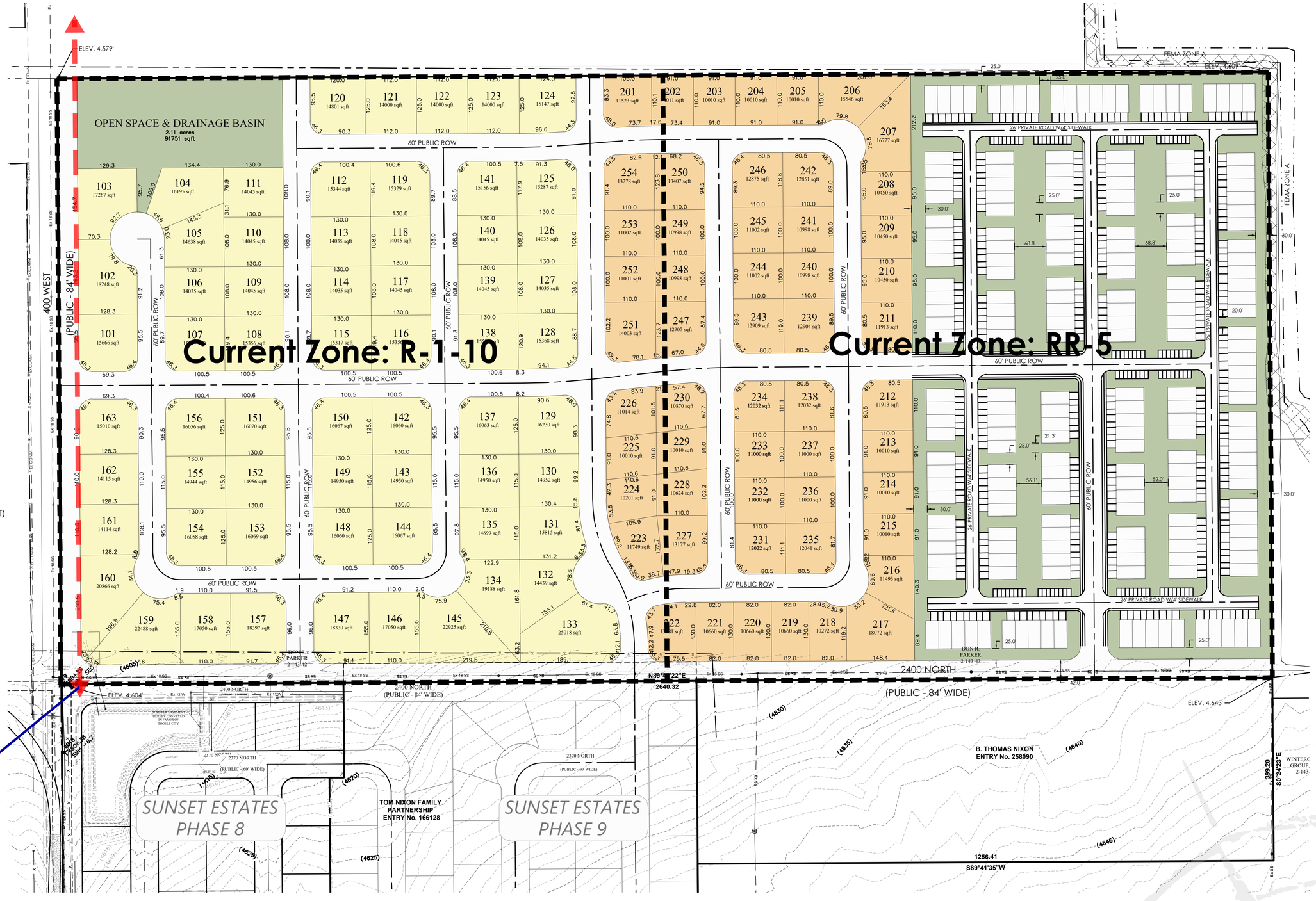
CURRENT ZONING

WESTERN 40 ACRES	R1-10
EASTERN 40 ACRES	RR-5

PROPOSED ZONING

ZONE:	R1-10
ZONE:	MR-16
MAX DENSITY	16 UNITS/ACRE

ASPHALT TRAIL WITHIN 400 WEST RIGHT OF WAY PER TOOELE CITY MASTER TRAIL PLAN



CRESTVIEW concept plan D

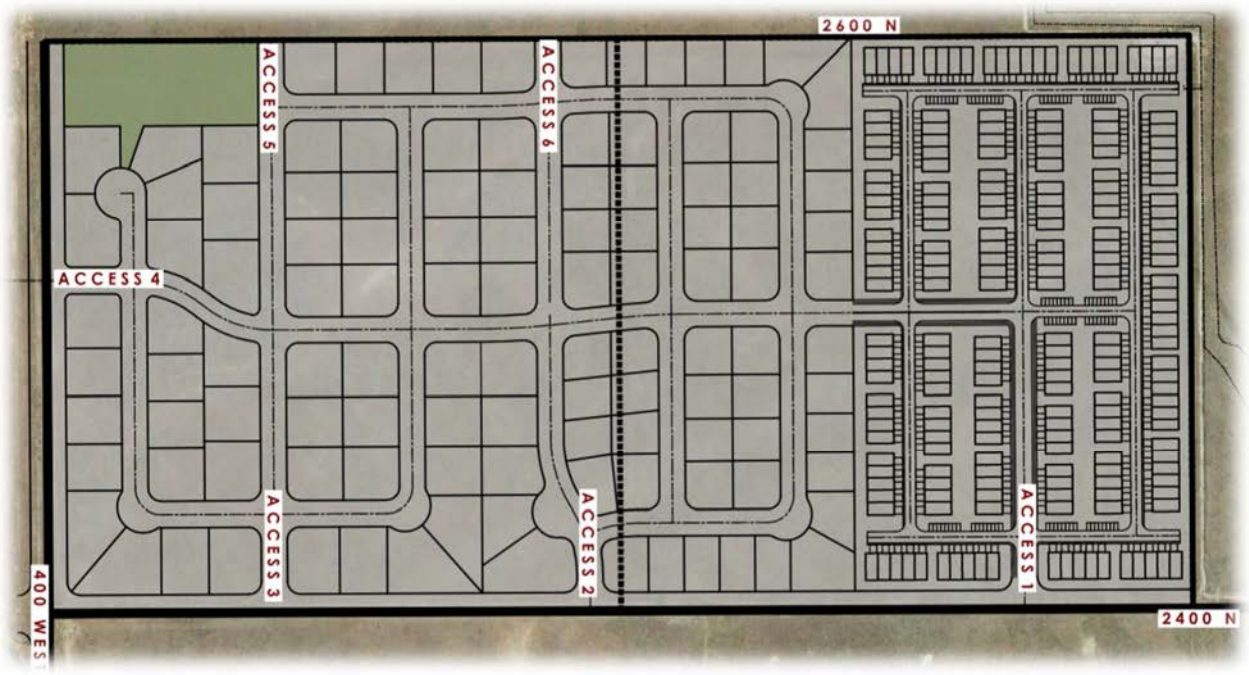
TOOELE CITY, TOOELE COUNTY
7/8/2021
20-0492

FOCUS ENGINEERING AND SURVEYING, LLC

CRESTVIEW DEVELOPMENT

TRAFFIC IMPACT STUDY

TOOELE, UT



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ENGINEERING & SURVEYING, LLC

APRIL, 2022

6949 South High Tech Drive, Suite 200, Midvale, Utah 84047 p 801.352.0075

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1.0 Executive Summary

1.1 DESCRIPTION OF PROJECT

This report presents the results of a traffic impact analysis for the Crestview Development, located along 400 West and 2400 North in Tooele. The project site is located west of SR 36, north of the proposed 2400 North alignment, south of the proposed alignment of 2600 North, and east of 400 West. The proposed parcel of land for this development is currently undeveloped vacant land. The closest major roadways are SR 36 and 2400 North and to the south is 400 West and 2000 North. Figure 1 illustrates the Vicinity Map and the location of this development in relation to the adjacent roadway network.

The proposed Crestview Development will consist of 116 single family homes with 202 townhomes. These proposed units will access onto 400 West, 2400 North and 2600 North. 400 West has one proposed access, 2600 North has two proposed accesses and 2400 North will have three proposed accesses. Refer to Figure 2 for the site plan and layout of the six proposed accesses onto the surrounding roadways.

This study projects the traffic associated with the Crestview Development at full build-out. It should be noted the opening year of operation for this site is anticipated for the end of 2025. The traffic associated with this development is generated using the latest version of the Trip Generation Manuals published by the Institute of Transportation Engineers (ITE). Using the proposed 116 single family homes and 202 townhomes, we analyzed the trips generated for this development as single-family and multi-family (low rise) per the ITE Trip Generation Manuals. It is anticipated this new development will generate 2,574 Average Daily Trips (ADT) with 179 AM peak hour trips and 228 PM peak hour trips on an average weekday.

1.2 PRINCIPAL FINDINGS AND RECOMMENDATIONS

2022 Existing Scenario

Figure 3 illustrates the 2022 Existing AM and PM peak hour traffic volumes that were collected at the 400 West and 2000 North intersection and the SR 36 and 2400 North intersection. These traffic volumes were analyzed using the existing lane configuration at each intersection and traffic control.

SR 36 and 2400 North

The SR 36 and 2400 North intersection currently function with an overall Level of Service (LOS) "A" and each leg of the intersection function with a LOS "B" or better in the AM peak hour. Under the PM peak hour conditions, the overall LOS is a "B" with the individual approaches to the intersection functioning with a LOS "C" or better. Since each approach and overall levels of service meets the minimum levels, no improvements are needed to the SR 36 and 2400 North intersection under the 2022 Existing conditions.

400 West and 2000 North

Currently, 2000 North consists of one lane in each direction and is stop controlled at this intersection. 400 West consists of one lane in each direction with wide shoulders and is free-flowing traffic at this intersection. Under the existing conditions, all traffic movements at this intersection function with a LOS "B" or better under both the AM and PM peak hours. No improvements are needed at this time.

It should be noted, as development occurs to the west of this intersection, the north half of 2000 North will be fully constructed. It is recommended this roadway be striped to delineate travel lanes and consist of one left turn lane with a shared thru/right turn lane at the intersection to mirror the east approach.

2025 Opening Year Scenario

It is assumed 2025 will be the full build-out year of the Crestview Development. With the surrounding area yet to be developed, we anticipated a 5% growth over the next few years. Using this projected growth rate, the 2025 Opening Year traffic volumes were generated. These traffic volumes can be found in Figure 4. The 2025 Opening Year scenario illustrates traffic at the study area intersections without the proposed development. Using the existing lane configuration and traffic control as outlined under the existing conditions, each intersection will continue to function with acceptable levels of service "C" or better for each traffic movement.

It is recommended by 2025, 2400 North be constructed to connect to 400 West. With developments in this area currently under constructed, it is assumed this connection will be made before 2025. It is also recommended 2400 North be constructed to match the city's master plan with two lanes in each direction and center two-way left turn lane. This matched the current roadway cross-section along the frontage of the Home Depot and the connection at SR 36.

2025 Opening Year with Project Scenario

With the addition of the Crestview Development, the 2025 Opening Year with Project traffic volumes are illustrated in Figure 7. These traffic volumes were analyzed with the existing lane configuration along the surrounding roadways and at the study area intersections. With the addition of the trips generated by the Crestview Development, all movements at the intersections within the study area will continue to function at a LOS "C" or better. As recommended under the 2025 Opening Year conditions, 2400 North should be extended from SR 36 to 400 West. Along the frontage of the Crestview Development, it is recommended the half width of 2400 North be constructed to meet the city requirements for the full build-out of this roadway.

Each proposed access to the development will function with acceptable levels of service with one egress lane and one ingress lane.

2.0 Introduction

2.1 DEVELOPMENT DESCRIPTION

The proposed Crestview Development is situated on over 75 acres of vacant land east of 400 West, west of the projected alignment of Berra Blvd, south of the proposed alignment of 2600 North and north of 2400 North. Refer to the Vicinity Map and Site Plan in Figures 1 and 2, respectively. The proposed site will consist of 116 single family homes and 202 townhomes. The Crestview Development is planned with six accesses. Three accesses onto 2400 North, one access onto 400 West and 2 accesses onto the proposed alignment of 2600 North. At full build-out of the Crestview Development, it is assumed 2400 North will extend from 400 West through SR 36. Full build-out of this development is anticipated by the end of 2025.

The 116 single family homes and 202 townhomes are anticipated to generate 2574 Average Daily Trips (ADT); with 179 AM peak hour trips and 228 PM peak hour trips.

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FIGURE 1 - VICINITY MAP

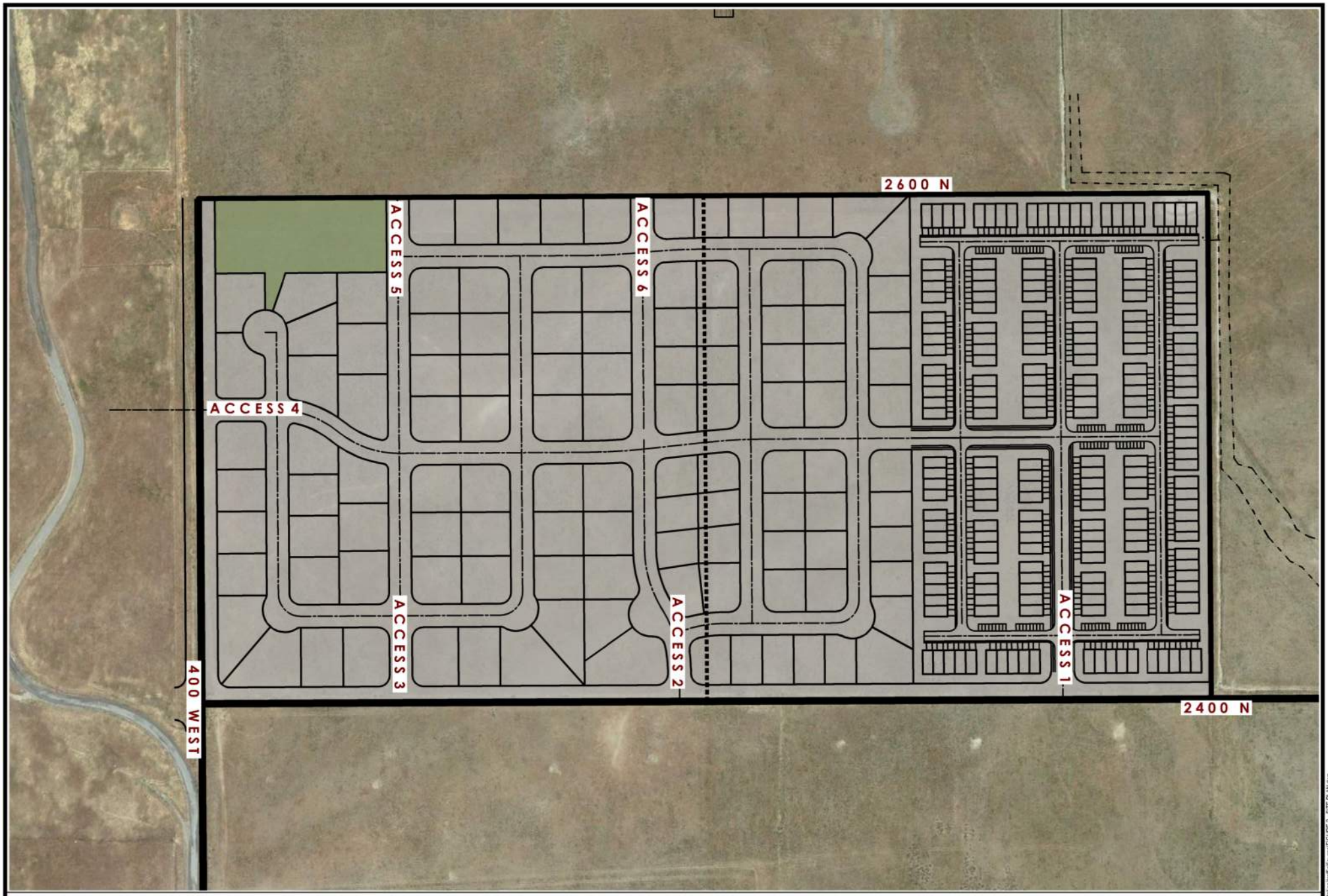

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FIGURE 2 - SITE PLAN

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3.0 Existing Conditions

3.1 ROADWAYS

2000 North: 2000 North is an 84-foot Limited Access Minor Road as determined by the City of Tooele Transportation Master Plan. Currently 2000 North consists of one lane in each direction, however the roadway is not striped to dedicate the lane configuration. 2000 N currently provides access to the businesses and residents located within this area. The ultimate roadway configuration of 2000 North would have 3 lanes in each direction with a center two-way left turn lane or a landscaped median. The posted speed limit is 35 mph.

2400 North: 2400 North is major roadway within the city limits. West of SR 36, 2400 North consist of two lanes in each direction with a center two-way left turn lane. This roadway provides access to businesses near SR 36 and as the road is currently under construction further west, it will provide access to residential developments within this area.

400 West: 400 West is a local roadway that provides access to residential developments and schools located within this area. 400 West runs north and south along the west side of the proposed Crestview Development. Currently 400 West ends at the projected alignment of 2400 North, but is planned to extend to the northern boundary of Crestview. 400 West consists of one lane in each direction with a center two-way left turn lane.

3.2 EXISTING TRAFFIC VOLUMES

From discussions held with Tooele City Engineering Staff, it was determined existing AM and PM peak hour traffic counts would be collected at the 2000 North and 400 West intersection and the 2400 North and SR 36 intersection. Existing AM and PM peak hour traffic volumes were collected on March 2, 2022 at the 2000 North and 400 West intersection during the peak hours of 7 AM to 9 AM and 4 PM to 6 PM. From the existing counts that were collected, it was determined the peak hours are from 7:30 AM to 8:30 AM and from 4:30 PM to 5:30 PM.

Using the UDOT traffic cameras and information available from the traffic data equipment located at the 2400 North and SR 36 intersection, existing AM and PM peak hour traffic volumes were extrapolated. It was determined the peak hours of this intersection are between 7:30 am to 8:30 am and the 4:00 pm to 5:00 pm. These volumes are illustrated in Figure 3.

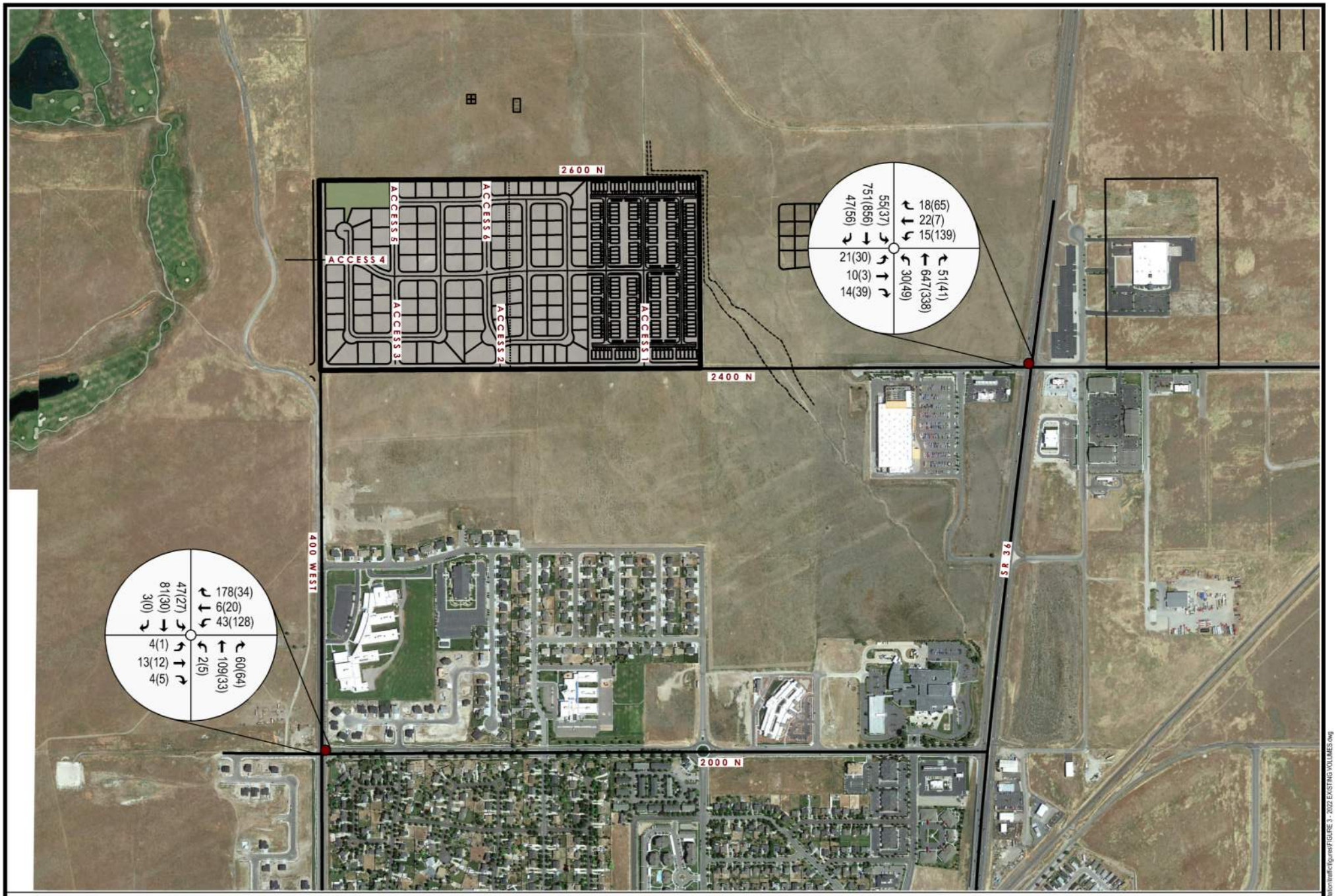

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FIGURE 3 - 2022 EXISTING TRAFFIC VOLUMES

XX(XX) = AM(PM) PEAK HOUR TRAFFIC VOLUMES

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4.0 Opening Year Conditions

Opening Year traffic, also known as Background traffic, is the traffic that is on the study area roadways within the study area regardless if the proposed development is constructed or not. These traffic volumes are a projection of growth within the study area based on current land available and opportunities for future development within this area. Most of this area within the city limits is undeveloped and is planned or will be planned for developments. Taking this into account, it is assumed this area will experience fairly aggressive growth over the next few years. It is assumed an average growth of 8% will occur through 2025. 2025 is the planned year for the completion of the Crestview Development. Applying this growth rate to the existing traffic volumes, the 2025 Opening Year traffic volumes are illustrated in Figure 4.

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FIGURE 4 - 2025 OPENING TRAFFIC VOLUMES

XX(XX) = AM(PM) PEAK HOUR TRAFFIC VOLUMES

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Z:_2020\20-0492 Parker Property\transportation\traffic\figures\FIGURE 4 - 2025 OPENING VOLUMES.dwg

5.0 Trip Generation and Trip Distribution

The full build-out of the proposed development will consist of 116 single-family homes and 202 townhomes. Using land use code 210 – Single-Family Detached Housing for the 116 single-family homes and land use 220 – Multifamily Housing (Low-Rise) for the 202 townhomes, trip generation rates were determined using the *10th Edition of the Trip Generation Manual*. This manual is an ITE information report, published by the *Institute of Transportation Engineers*. Trips generated by the proposed development which will occur during the peak hours of the proposed development were used for the analysis. The Peak Hour of Adjacent Street Traffic rates are used to generate the AM and PM peak hour volumes. The trips generated from the Crestview Development are presented in Table 1.

Table 1 - Trip Generation – Average Weekday Traffic Volumes

ITE Land Use Code	Land Use Description	Size	Daily (AADT)	Trip Generation (AM)		Trip Generation (PM)	
				Enter	Exit	Enter	Exit
210	Dwelling Units	116	1095	22	64	72	43
220	Dwelling Units	202	1479	21	72	71	42

5.1 PASS-BY TRIP REDUCTION

No trip reduction was applied for the Crestview Development as no other land uses are part of this development and would not cause for pass-by trip reduction.

5.2 SITE TRAFFIC DISTRIBUTION

Site ingress/egress traffic at the proposed site accesses were distributed based on the anticipated direction vehicles would be coming from or going to. Directional distribution was estimated based on current traffic patterns, ease of access to major roadways and freeways, and also current land uses within the proximity of the proposed development. Figure 5 illustrates the site traffic distribution percentages for the Crestview Development. Using the distribution percentages along with projected traffic volumes outlined in Table 1, Figure 6 illustrates the site traffic volumes anticipated for the Crestview Development.

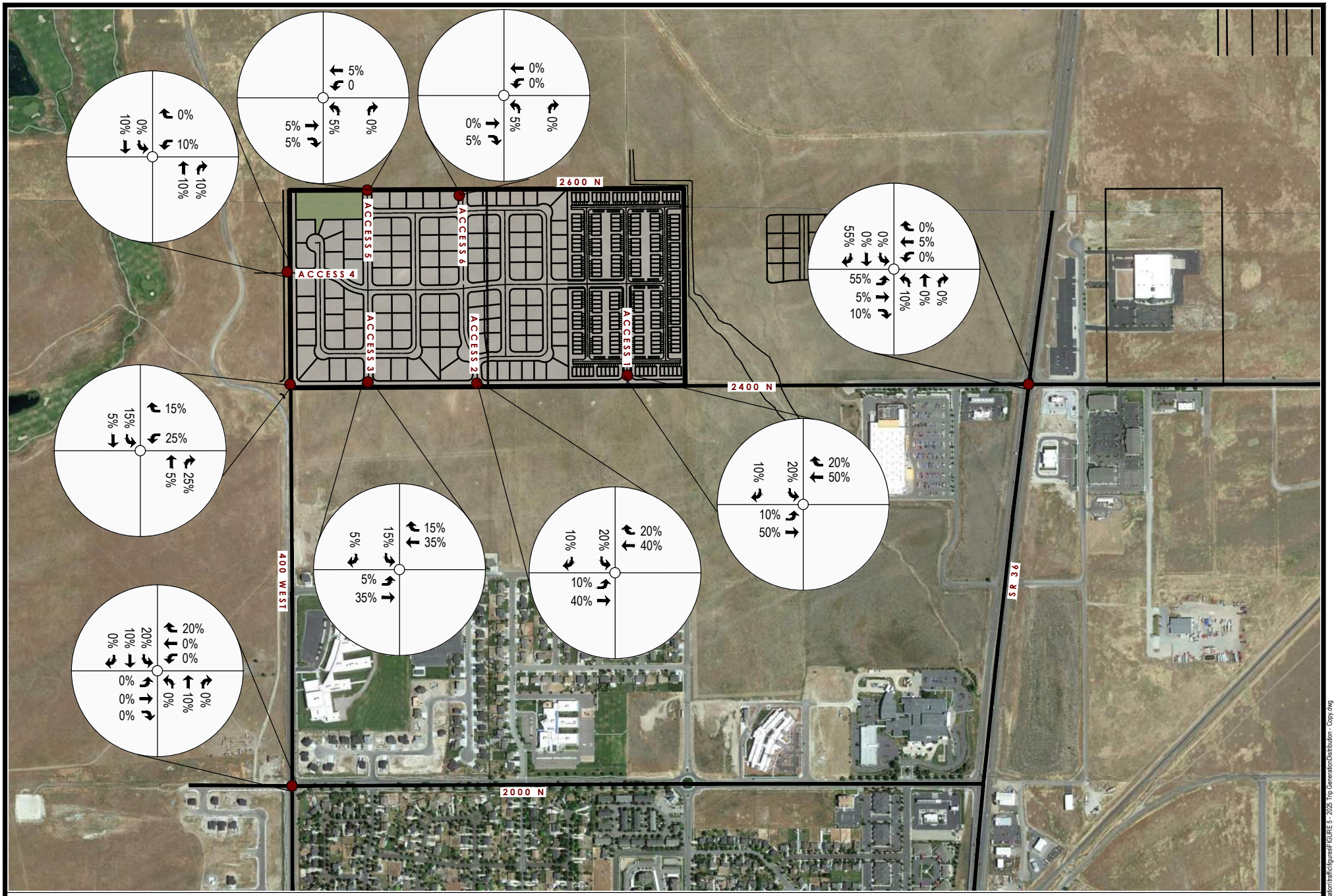

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FIGURE 5 - TRIP DISTRIBUTION PERCENTAGE

XX % = PROJECT DISTRIBUTION PERCENTAGE

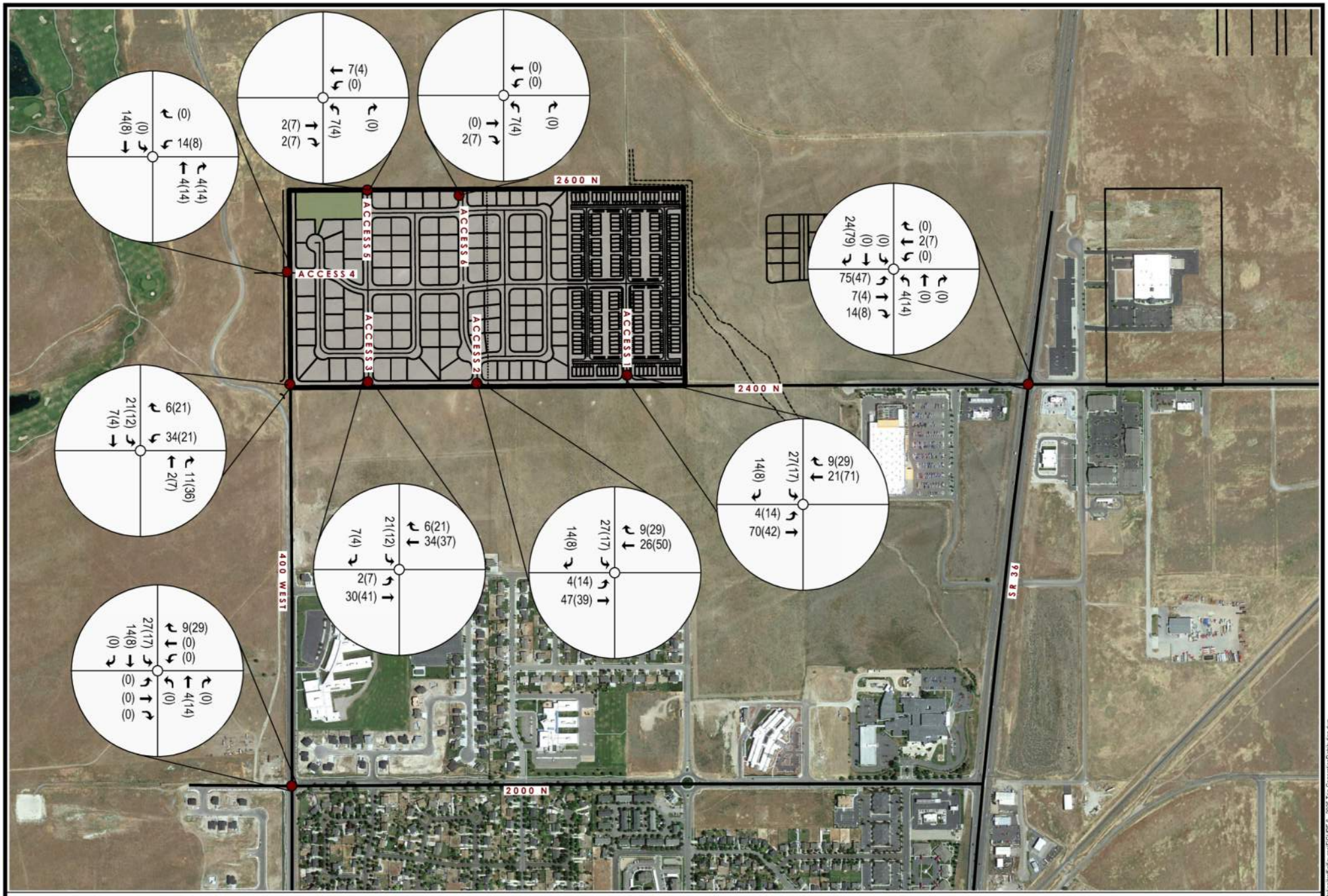

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FIGURE 6 - PROJECT GENERATED TRAFFIC VOLUMES

XX(XX) = AM(PM) PEAK HOUR TRAFFIC VOLUMES

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6.0 Opening Year with Project Traffic Conditions

The Opening Year with Project traffic volumes represent the traffic that will be added to the study area with the addition of the proposed Crestview Development. Using the projected traffic volumes from the 2025 Opening Year (Figure 4) scenario in addition to the site generated traffic volumes as illustrated in Figure 6, the 2025 Opening Year with Project traffic volumes are generated. Per the developer's schedule, it is anticipated that the proposed site will be built out by 2025. The 2025 Opening Year with Project traffic volumes, which illustrate the full build-out of the Crestview Development with the projected traffic, are illustrated in Figure 7.

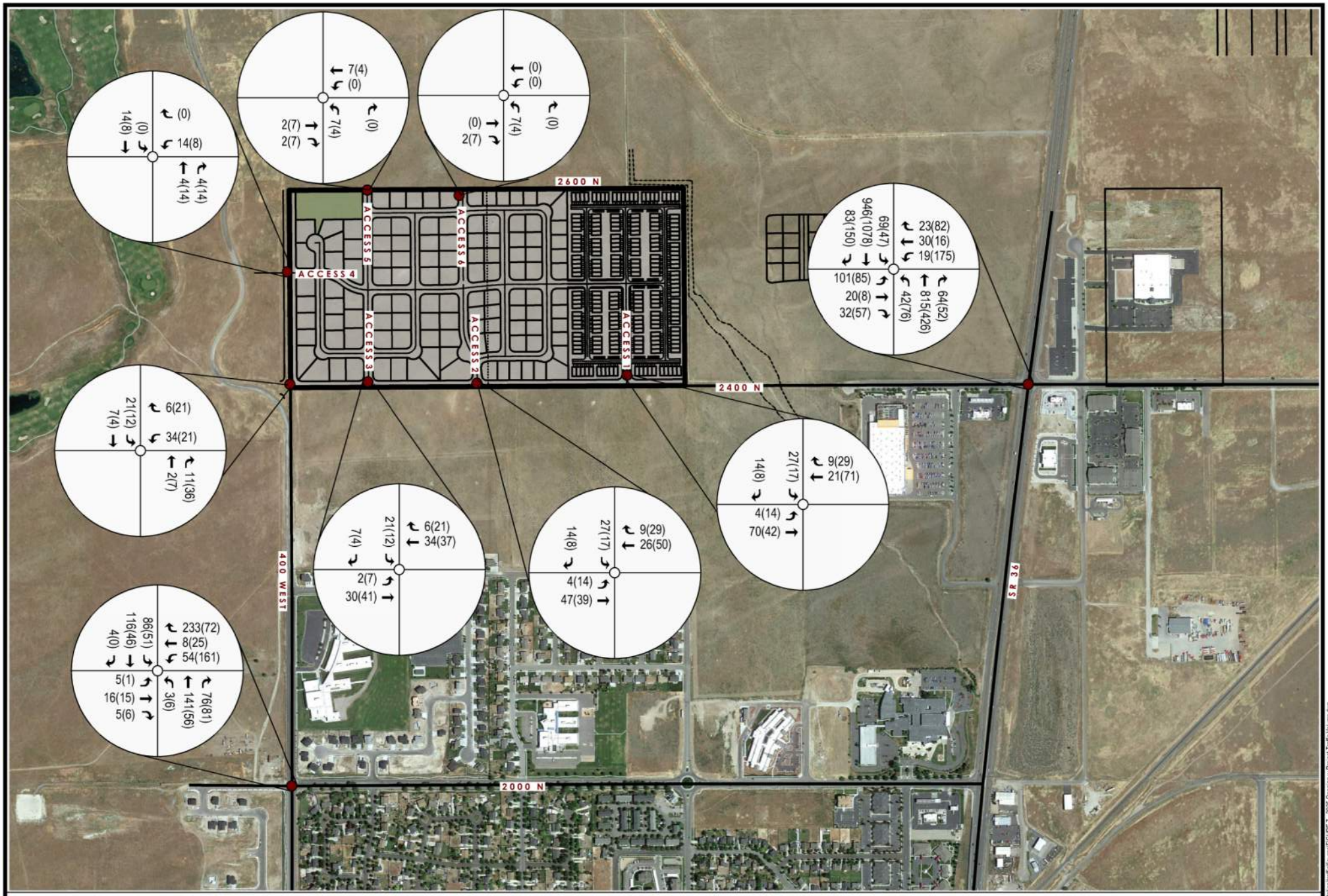

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FIGURE 7 -2025 OPENING W/ PROJECT TRAFFIC VOLUMES

XX(XX) = AM(PM) PEAK HOUR TRAFFIC VOLUMES

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Z:_2020\20-0492 Parker Property\transportation\traffic\figures\FIGURE 7 - 2025 Opening w Project Traffic Volume.dwg

7.0 Capacity Analysis

7.1 LEVEL OF SERVICE ANALYSIS

Intersection capacity analysis was performed at the study area intersections and the proposed accesses to the Crestview Development. Synchro© Version 11 was used to analyze the study intersections for the proposed conditions according to methods put forth by the Transportation Research Board's **Highway Capacity Manual** (**HCM 6th Edition**).

The Level of Service (LOS) of an intersection range from A to F where LOS A has a low vehicular delay indicating smooth free-flowing traffic. LOS F has a high vehicular delay and indicates the worst-case scenario with high congestion and a complete breakdown of traffic flow. Although LOS A through C are the desired levels, LOS D is considered acceptable in urban conditions. Traffic conditions with LOS of E or F are generally deemed unacceptable and represent significant travel delay, increased accident potential, and inefficient motor vehicle operation. Table 2 shows the relation between LOS and vehicular delay for signalized and unsignalized intersections.

Table 2 - Signalized and Unsignalized intersection LOS and Delay Parameters

Level of Service (LOS)	Vehicular Delay (seconds/vehicle)	
	Signalized Intersection	Stop Controlled Approach
A	0.0 ≤10.0	0.0 < 10.0
B	>10.0 ≤ 20.0	> 10.0 < 15.0
C	> 20.0 ≤ 35.0	> 15.0 < 25.0
D	> 35.0 ≤ 55.0	> 25.0 < 35.0
E	> 55.0 ≤ 80.0	> 35.0 < 50.0
F	> 80.0	> 50.0

7.2 2022 EXISTING CONDITIONS LOS ANALYSIS

The 2022 Existing traffic volumes at the study area intersections were analyzed using Synchro. As can be seen in Table 3, each of the movements at the study area intersections currently functions at acceptable levels of service under the existing conditions.

Table 3 – 2022 Existing Traffic LOS

Intersection	2022 Existing Traffic LOS(Delay)				
	Overall LOS	Northbound	Southbound	Eastbound	Westbound
1: SR 36 & 2400 North					
AM Peak Hour	**A(7.6)**	A(7.4)	A(7.1)	B(12.0)	B(12.0)
PM Peak Hour	**A(9.8)**	A(7.2)	A(9.5)	B(13.8)	B(15.2)
2: 400 West & 2000 North					
AM Peak Hour	-	A(0.1)	A(2.8)	B(14.0)	B(12.3)
PM Peak Hour	-	A(0.4)	A(3.5)	A(9.9)	B(10.5)

7.3 2023 OPENING YEAR BACKGROUND LOS ANALYSIS

With the growth anticipated to occur along 2400 North and within the study area, the projected traffic volumes as seen in Figure 4 were also analyzed. Table 4 illustrates that with this growth, the study area intersections will continue to function at acceptable levels of service.

Table 4 – 2025 Opening Year Traffic LOS

Intersection	2025 Opening Year Traffic LOS(Delay)				
	Overall LOS	Northbound	Southbound	Eastbound	Westbound
1: SR 36 & 2400 North					
AM Peak Hour	**A(4.7)**	A(4.1)	A(4.5)	B(10.7)	B(10.7)
PM Peak Hour	**A(6.9)**	A(5.3)	A(6.5)	A(10.0)	B(11.5)
2: 400 West & 2000 North					
AM Peak Hour	**-**	A(0.1)	A(2.9)	C(17.3)	B(14.9)
PM Peak Hour	**-**	A(0.3)	A(3.6)	B(10.3)	B(11.3)

7.4 2025 OPENING YEAR WITH PROJECT LOS ANALYSIS

With the addition of the Crestview Development to this study area, Table 5 illustrates the results of the Synchro analysis performed at each intersection. As can be seen, all study area intersections will continue to function at acceptable levels of service with the addition of the Crestview Development.

Table 5 – 2025 Opening Year Plus Project Traffic LOS

Intersection	2025 Opening w Project Traffic LOS(Delay)				
	Overall LOS	Northbound	Southbound	Eastbound	Westbound
1: 36 SR & 2400 North					
AM Peak Hour	**A(5.3)**	A(4.6)	A(4.9)	B(10.9)	B(10.1)
PM Peak Hour	**A(7.2)**	A(5.6)	A(6,4)	B(11.3)	B(12.2)
2: 400 West & 2000 North					
AM Peak Hour	-	A(0.1)	A(3.3)	B(14.4)	B(12.1)
PM Peak Hour	-	A(0.3)	A(3.6)	B(10.3)	B(11.3)
3: Access 1 & 2400 North					
AM Peak Hour	-	N/A	A(9.1)	A(0.4)	A(0.0)
PM Peak Hour	-	N/A	A(9.3)	A(1.9)	A(0.0)
4: Access 2 & 2400 North					
AM Peak Hour	-	N/A	A(9.1)	A(0.6)	A(0.0)
PM Peak Hour	-	N/A	A(9.2)	A(2.0)	A(0.0)
5: Access 3 & 2400 North					
AM Peak Hour	-	N/A	A(9.1)	A(0.5)	A(0.0)
PM Peak Hour	-	N/A	A(9.1)	A(1.1)	A(0.0)
6: 400 West & 2400 North					
AM Peak Hour	-	A(0.0)	A(5.5)	N/A	A(9.2)
PM Peak Hour	-	A)0.0)	A(5.5)	N/A	A(8.9)
7: 400 West & Access 4					
AM Peak Hour	-	A(0.0)	A(0.0)	N/A	A(9.0)
PM Peak Hour	-	A(0.0)	A(0.0)	N/A	A(9.0)
8: Access 5 & 2600 North					
AM Peak Hour	-	A(8.9)	N/A	A(0.0)	A(0.0)
PM Peak Hour	-	A(8.9)	N/A	A(0.0)	A(0.0)
9: Access 6 & 2600 North					
AM Peak Hour	-	A(8.9)	N/A	A(0.0)	A(0.0)
PM Peak Hour	-	A(8.9)	N/A	A(0.0)	A(0.0)

8.0 Conclusions and Recommendations

Based on the information presented in this report, it can be concluded with the addition of the 116 single family homes and 202 residential townhomes with the Crestview Development, traffic will continue to flow with very minimal delay or impact. Each movement at the study area intersections will continue to function at acceptable levels of service. The following recommendations are made to assist with the flow of traffic through the study area.

400 West and 2000 North

It is recommended the city stripe 2000 North to the ultimate lane configuration. This will help ease confusion to drivers and provide safe turning lanes at the intersection with 400 West.

SR 36 and 2400 North

This intersection will continue to function at acceptable levels of service with the addition of the Crestview Development. No improvements are needed at this intersection with the addition of the Crestview Development.

400 West and 2400 North

It is recommended this intersection be constructed with a left turn lane and a right turn lane in the eastbound direction. It is assumed 2400 North will terminate at 400 West and therefore, no through lane is needed int eh westbound direction. It is assumed 400 West will be constructed with one lane in each direction and a center two-way left turn lane along the west frontage of the Crestview Development.

2600 North

It is recommended the half-width of 2600 North be constructed along the north frontage of the Crestview Development to meet city standards. It is assumed full width of 2600 North will consist of one lane in each direction with a center two-way left turn lane.

At each project access, it is recommended a single egress lane and a single ingress lane be constructed to accommodate the traffic entering and exiting the Crestview Development. Along 2400 North, a two-way left turn lane will provide access for vehicles entering the development from the west.

9.0 Appendix

Existing Traffic Counts

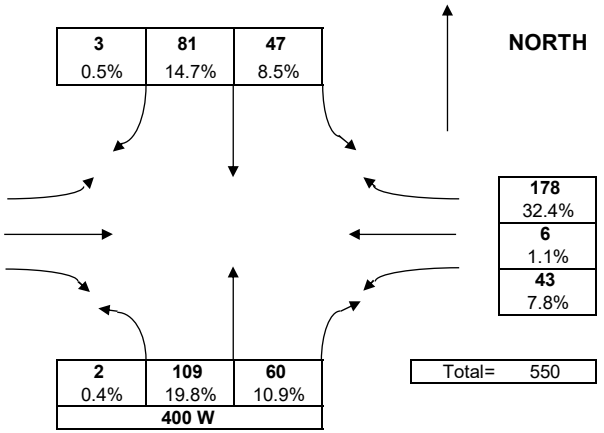
TURNING MOVEMENT COUNT SUMMARY

FOCUS ENGINEERING & SURVEYING, LLC

INTERSECTION:	**400 W and 2000 N**
N-S STREET:	**400 W**
E-W STREET:	**2000 N**
FOCUS PROJ. NO.:	**20-0492**
COUNT DATE:	**2-Mar-22**
NOTES:	
COUNT TIME:	
FROM:	**7:00 AM**
TO:	**9:00 AM**

PK HR VOLUME:	550
PHF:	0.66
PEAK HOUR:	
FROM:	TO:
7:15 AM	8:15 AM

AM PEAK HOUR VOLUMES



COUNT DATA INPUT:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
7:00 AM	7:15 AM	2	3	15	0	1	0	5	3	1	3	2	8	43
7:15 AM	7:30 AM	0	23	15	2	2	0	0	8	0	11	2	23	86
7:30 AM	7:45 AM	2	47	13	1	7	1	22	27	2	7	1	79	209
7:45 AM	8:00 AM	0	29	16	1	1	0	18	35	1	11	0	61	173
8:00 AM	8:15 AM	0	10	16	0	3	3	7	11	0	14	3	15	82
8:15 AM	8:30 AM	2	5	23	0	1	0	3	5	0	22	2	4	67
8:30 AM	8:45 AM	1	7	34	0	5	5	7	15	0	30	4	9	117
8:45 AM	9:00 AM	1	9	25	0	4	2	5	3	0	13	2	9	73

HOURLY TOTALS:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
7:00 AM	8:00 AM	4	102	59	4	11	1	45	73	4	32	5	171	511
7:15 AM	8:15 AM	2	109	60	4	13	4	47	81	3	43	6	178	550
7:30 AM	8:30 AM	4	91	68	2	12	4	50	78	3	54	6	159	531
7:45 AM	8:45 AM	3	51	89	1	10	8	35	66	1	77	9	89	439
8:00 AM	9:00 AM	4	31	98	0	13	10	22	34	0	79	11	37	339

NOTE PHF IS BASED ON 15 MIN. PEAK WITHIN THE PEAK HOUR.

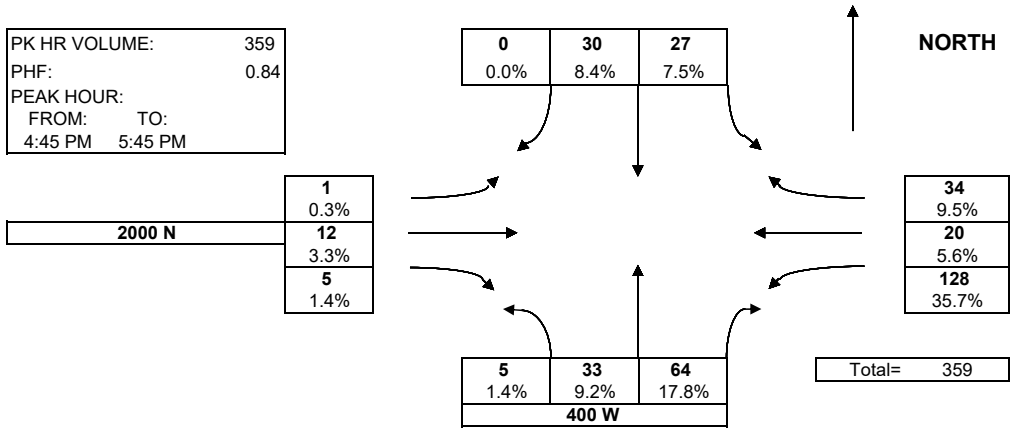
TURNING MOVEMENT COUNT SUMMARY

FOCUS ENGINEERING & SURVEYING, LLC

INTERSECTION:	**400 W and 2000 N**
N-S STREET:	**400 W**
E-W STREET:	**2000 N**
FOCUS PROJ. NO.:	**20-0492**
COUNT DATE:	**2-Mar-22**
NOTES:	
COUNT TIME:	
FROM:	**4:00 PM**
TO:	**6:00 PM**

PM PEAK HOUR VOLUMES

PK HR VOLUME:	359
PHF:	0.84
PEAK HOUR:	
FROM:	TO:
4:45 PM	5:45 PM



COUNT DATA INPUT:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
4:00 PM	4:15 PM	2	9	18	0	1	1	5	6	0	30	3	14	89
4:15 PM	4:30 PM	2	5	15	0	1	0	12	8	0	20	3	9	75
4:30 PM	4:45 PM	2	6	10	1	3	0	7	4	0	18	7	4	62
4:45 PM	5:00 PM	0	8	15	0	3	2	8	10	0	35	7	5	93
5:00 PM	5:15 PM	4	8	12	0	3	2	4	5	0	33	6	5	82
5:15 PM	5:30 PM	1	9	18	0	5	1	11	8	0	32	6	16	107
5:30 PM	5:45 PM	0	8	19	1	1	0	4	7	0	28	1	8	77
5:45 PM	6:00 PM	0	7	19	1	2	3	6	7	0	27	1	2	75

HOURLY TOTALS:

TIME PERIOD		NORTHBOUND			EASTBOUND			SOUTHBOUND			WESTBOUND			TOTAL
FROM:	TO:	L	T	R	L	T	R	L	T	R	L	T	R	VOLUMES
4:00 PM	5:00 PM	6	28	58	1	8	3	32	28	0	103	20	32	319
4:15 PM	5:15 PM	8	27	52	1	10	4	31	27	0	106	23	23	312
4:30 PM	5:30 PM	7	31	55	1	14	5	30	27	0	118	26	30	344
4:45 PM	5:45 PM	5	33	64	1	12	5	27	30	0	128	20	34	359
5:00 PM	6:00 PM	5	32	68	2	11	6	25	27	0	120	14	31	341

NOTE PHF IS BASED ON 15 MIN. PEAK WITHIN THE PEAK HOUR.

Trip Generation Report

Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: New Project

Open Date: 3/9/2022
Analysis Date: 3/9/2022

ITE	Land Use		Weekday Average Daily Trips *	Enter	Exit	Total	Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
210	SFHOUSE 1			548	547	1095		22	64	86		72	43	115
	116	Dwelling Units												
220	202_THs			740	739	1479		21	72	93		71	42	113
	202	Dwelling Units												
Unadjusted Volume				1288	1286	2574		43	136	179		143	85	228
Internal Capture Trips				0	0	0		0	0	0		0	0	0
Pass-By Trips				0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets				1288	1286	2574		43	136	179		143	85	228

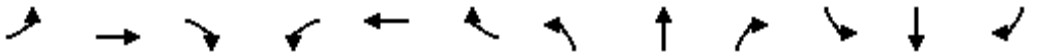
Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

Traffic Analysis Reports

2022 Existing Traffic Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	10	14	15	22	18	30	647	51	55	751	47
Future Volume (veh/h)	21	10	14	15	22	18	30	647	51	55	751	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	11	15	16	24	20	33	703	55	60	816	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	189	160	383	189	160	454	1288	575	514	1381	616
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.04	0.36	0.36	0.07	0.39	0.39
Sat Flow, veh/h	1362	1870	1585	1385	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	23	11	15	16	24	20	33	703	55	60	816	51
Grp Sat Flow(s),veh/h/ln	1362	1870	1585	1385	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.4	0.2	0.2	0.3	0.3	0.3	0.3	4.5	0.7	0.6	5.2	0.6
Cycle Q Clear(g_c), s	0.8	0.2	0.2	0.5	0.3	0.3	0.3	4.5	0.7	0.6	5.2	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	373	189	160	383	189	160	454	1288	575	514	1381	616
V/C Ratio(X)	0.06	0.06	0.09	0.04	0.13	0.12	0.07	0.55	0.10	0.12	0.59	0.08
Avail Cap(c_a), veh/h	1089	1172	993	1111	1172	993	692	2289	1021	706	2289	1021
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	11.7	11.7	11.9	11.8	11.7	5.6	7.3	6.0	5.2	7.0	5.5
Incr Delay (d2), s/veh	0.1	0.1	0.3	0.0	0.3	0.3	0.1	0.4	0.1	0.1	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.6	0.1	0.1	0.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	11.8	12.0	11.9	12.1	12.1	5.7	7.6	6.1	5.3	7.4	5.6
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		49			60			791			927	
Approach Delay, s/veh		12.0			12.0			7.4			7.1	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	14.9		7.4	5.7	15.7		7.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	18.5		18.0	5.0	18.5		18.0				
Max Q Clear Time (g_c+I1), s	2.6	6.5		2.8	2.3	7.2		2.5				
Green Ext Time (p_c), s	0.0	3.5		0.1	0.0	3.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		7.6	
HCM 6th LOS		A	

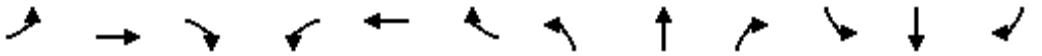
Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	13	4	43	6	178	2	109	60	47	81	3
Future Vol, veh/h	4	13	4	43	6	178	2	109	60	47	81	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	100	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	20	6	65	9	270	3	165	91	71	123	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	624	530	126	498	487	211	128	0	0	256	0	0
Stage 1	268	268	-	217	217	-	-	-	-	-	-	-
Stage 2	356	262	-	281	270	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	398	455	924	483	481	829	1458	-	-	1309	-	-
Stage 1	738	687	-	785	723	-	-	-	-	-	-	-
Stage 2	661	691	-	726	686	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	253	430	924	443	454	829	1458	-	-	1309	-	-
Mov Cap-2 Maneuver	253	430	-	443	454	-	-	-	-	-	-	-
Stage 1	737	650	-	783	722	-	-	-	-	-	-	-
Stage 2	439	690	-	661	649	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	12.3	0.1	2.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1458	-	-	253	492	443	807	1309	-	-
HCM Lane V/C Ratio	0.002	-	-	0.024	0.052	0.147	0.345	0.054	-	-
HCM Control Delay (s)	7.5	-	-	19.6	12.7	14.5	11.8	7.9	-	-
HCM Lane LOS	A	-	-	C	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.5	1.5	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	3	39	139	7	65	49	338	41	37	856	56
Future Volume (veh/h)	30	3	39	139	7	65	49	338	41	37	856	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	4	46	164	8	76	58	398	48	44	1007	66
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	412	330	280	422	330	280	389	1520	678	607	1480	660
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.06	0.43	0.43	0.05	0.42	0.42
Sat Flow, veh/h	1314	1870	1585	1355	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	35	4	46	164	8	76	58	398	48	44	1007	66
Grp Sat Flow(s),veh/h/ln	1314	1870	1585	1355	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.9	0.1	1.0	4.4	0.1	1.6	0.7	2.8	0.7	0.5	9.0	1.0
Cycle Q Clear(g_c), s	1.0	0.1	1.0	4.5	0.1	1.6	0.7	2.8	0.7	0.5	9.0	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	412	330	280	422	330	280	389	1520	678	607	1480	660
V/C Ratio(X)	0.08	0.01	0.16	0.39	0.02	0.27	0.15	0.26	0.07	0.07	0.68	0.10
Avail Cap(c_a), veh/h	788	865	733	809	865	733	512	2146	957	750	2146	957
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	13.2	13.6	15.1	13.2	13.9	6.7	7.2	6.6	5.8	9.2	6.9
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.6	0.0	0.5	0.2	0.1	0.0	0.1	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.3	1.2	0.1	0.5	0.1	0.5	0.1	0.1	1.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	13.2	13.9	15.7	13.3	14.4	6.9	7.3	6.6	5.8	9.8	7.0
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		85			248			504			1117	
Approach Delay, s/veh		13.8			15.2			7.2			9.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	21.1		11.4	6.8	20.7		11.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	5.0	23.5		18.0				
Max Q Clear Time (g_c+I1), s	2.5	4.8		3.0	2.7	11.0		6.5				
Green Ext Time (p_c), s	0.0	2.3		0.2	0.0	5.2		0.6				

Intersection Summary			
HCM 6th Ctrl Delay		9.8	
HCM 6th LOS		A	

Intersection	
Int Delay, s/veh	6.5

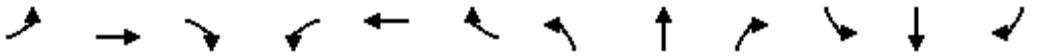
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	12	5	128	20	34	5	33	64	27	30	0
Future Vol, veh/h	1	12	5	128	20	34	5	33	64	27	30	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	100	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	13	5	139	22	37	5	36	70	29	33	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	202	207	33	181	172	71	33	0	0	106	0	0
Stage 1	91	91	-	81	81	-	-	-	-	-	-	-
Stage 2	111	116	-	100	91	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	756	690	1041	781	721	991	1579	-	-	1485	-	-
Stage 1	916	820	-	927	828	-	-	-	-	-	-	-
Stage 2	894	800	-	906	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	699	674	1041	752	704	991	1579	-	-	1485	-	-
Mov Cap-2 Maneuver	699	674	-	752	704	-	-	-	-	-	-	-
Stage 1	913	804	-	924	826	-	-	-	-	-	-	-
Stage 2	835	798	-	869	804	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.5	0.4	3.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1579	-	-	699	752	752	861	1485	-	-
HCM Lane V/C Ratio	0.003	-	-	0.002	0.025	0.185	0.068	0.02	-	-
HCM Control Delay (s)	7.3	-	-	10.2	9.9	10.9	9.5	7.5	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.7	0.2	0.1	-	-

2025 Opening Year Traffic Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	13	18	19	28	23	38	815	64	69	946	59
Future Volume (veh/h)	26	13	18	19	28	23	38	815	64	69	946	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	15	21	22	33	27	45	959	75	81	1113	69
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	234	198	431	234	198	425	1913	853	470	1913	853
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1343	1870	1585	1372	1870	1585	474	3554	1585	546	3554	1585
Grp Volume(v), veh/h	31	15	21	22	33	27	45	959	75	81	1113	69
Grp Sat Flow(s),veh/h/ln	1343	1870	1585	1372	1870	1585	474	1777	1585	546	1777	1585
Q Serve(g_s), s	0.6	0.2	0.3	0.4	0.4	0.4	1.9	4.6	0.6	2.9	5.6	0.6
Cycle Q Clear(g_c), s	1.0	0.2	0.3	0.6	0.4	0.4	7.5	4.6	0.6	7.5	5.6	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	234	198	431	234	198	425	1913	853	470	1913	853
V/C Ratio(X)	0.07	0.06	0.11	0.05	0.14	0.14	0.11	0.50	0.09	0.17	0.58	0.08
Avail Cap(c_a), veh/h	1152	1259	1067	1183	1259	1067	488	2391	1067	543	2391	1067
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.9	10.3	10.4	10.6	10.4	10.4	6.7	3.9	3.0	6.3	4.1	3.0
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.0	0.3	0.3	0.1	0.2	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.9	10.4	10.6	10.6	10.7	10.7	6.8	4.1	3.0	6.5	4.4	3.0
LnGrp LOS	B	B	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		67			82			1079			1263	
Approach Delay, s/veh		10.7			10.7			4.1			4.5	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.9		7.8		18.9		7.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		9.5		3.0		9.5		2.6				
Green Ext Time (p_c), s		4.2		0.1		4.9		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			4.7									
HCM 6th LOS			A									

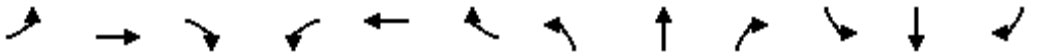
Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	16	5	54	8	224	3	137	76	59	102	4
Future Vol, veh/h	5	16	5	54	8	224	3	137	76	59	102	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	100	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	24	8	82	12	339	5	208	115	89	155	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	787	669	158	628	615	266	161	0	0	323	0	0
Stage 1	336	336	-	276	276	-	-	-	-	-	-	-
Stage 2	451	333	-	352	339	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	309	379	887	395	407	773	1418	-	-	1237	-	-
Stage 1	678	642	-	730	682	-	-	-	-	-	-	-
Stage 2	588	644	-	665	640	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	159	350	887	350	376	773	1418	-	-	1237	-	-
Mov Cap-2 Maneuver	159	350	-	350	376	-	-	-	-	-	-	-
Stage 1	675	596	-	727	679	-	-	-	-	-	-	-
Stage 2	323	641	-	587	594	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	14.9	0.1	2.9
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1418	-	-	159	409	350	746	1237	-	-
HCM Lane V/C Ratio	0.003	-	-	0.048	0.078	0.234	0.471	0.072	-	-
HCM Control Delay (s)	7.5	-	-	28.8	14.5	18.4	14.1	8.1	-	-
HCM Lane LOS	A	-	-	D	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0.9	2.5	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	13	18	175	9	82	62	426	52	47	1078	71
Future Volume (veh/h)	26	13	18	175	9	82	62	426	52	47	1078	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	14	20	194	10	91	69	473	58	52	1198	79
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	499	398	337	513	398	337	336	1780	794	599	1780	794
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	1294	1870	1585	1375	1870	1585	433	3554	1585	873	3554	1585
Grp Volume(v), veh/h	29	14	20	194	10	91	69	473	58	52	1198	79
Grp Sat Flow(s),veh/h/ln	1294	1870	1585	1375	1870	1585	433	1777	1585	873	1777	1585
Q Serve(g_s), s	0.6	0.2	0.3	4.1	0.1	1.5	4.5	2.4	0.6	1.1	8.0	0.8
Cycle Q Clear(g_c), s	0.7	0.2	0.3	4.3	0.1	1.5	12.5	2.4	0.6	3.6	8.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	499	398	337	513	398	337	336	1780	794	599	1780	794
V/C Ratio(X)	0.06	0.04	0.06	0.38	0.03	0.27	0.21	0.27	0.07	0.09	0.67	0.10
Avail Cap(c_a), veh/h	965	1071	908	1008	1071	908	367	2035	908	662	2035	908
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.1	9.8	9.9	11.5	9.8	10.3	10.6	4.5	4.1	5.5	5.9	4.1
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.5	0.0	0.4	0.3	0.1	0.0	0.1	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	1.0	0.0	0.4	0.3	0.2	0.0	0.1	0.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.1	9.8	9.9	12.0	9.8	10.8	10.9	4.6	4.1	5.6	6.6	4.2
LnGrp LOS	B	A	A	B	A	B	B	A	A	A	A	A
Approach Vol, veh/h		63			295			600			1329	
Approach Delay, s/veh		10.0			11.5			5.3			6.5	
Approach LOS		A			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		20.2		11.2		20.2		11.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		14.5		2.7		10.0		6.3				
Green Ext Time (p_c), s		1.3		0.1		4.8		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			6.9									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	15	6	161	25	43	6	42	81	34	38	0
Future Vol, veh/h	1	15	6	161	25	43	6	42	81	34	38	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	100	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	16	7	175	27	47	7	46	88	37	41	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	256	263	41	231	219	90	41	0	0	134	0	0
Stage 1	115	115	-	104	104	-	-	-	-	-	-	-
Stage 2	141	148	-	127	115	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	697	642	1030	724	679	968	1568	-	-	1451	-	-
Stage 1	890	800	-	902	809	-	-	-	-	-	-	-
Stage 2	862	775	-	877	800	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	628	623	1030	689	659	968	1568	-	-	1451	-	-
Mov Cap-2 Maneuver	628	623	-	689	659	-	-	-	-	-	-	-
Stage 1	886	780	-	898	806	-	-	-	-	-	-	-
Stage 2	789	772	-	831	780	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	11.3	0.3	3.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1568	-	-	628	702	689	826	1451	-	-
HCM Lane V/C Ratio	0.004	-	-	0.002	0.033	0.254	0.089	0.025	-	-
HCM Control Delay (s)	7.3	-	-	10.7	10.3	12	9.8	7.5	-	-
HCM Lane LOS	A	-	-	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	1	0.3	0.1	-	-

2025 Opening Year with Project Traffic Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	20	32	19	30	23	42	815	64	69	946	83
Future Volume (veh/h)	101	20	32	19	30	23	42	815	64	69	946	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	22	36	21	33	26	47	906	71	77	1051	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	453	291	247	460	291	247	417	1829	816	464	1829	816
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1344	1870	1585	1345	1870	1585	492	3554	1585	576	3554	1585
Grp Volume(v), veh/h	112	22	36	21	33	26	47	906	71	77	1051	92
Grp Sat Flow(s),veh/h/ln	1344	1870	1585	1345	1870	1585	492	1777	1585	576	1777	1585
Q Serve(g_s), s	2.1	0.3	0.5	0.4	0.4	0.4	2.0	4.5	0.6	2.7	5.6	0.8
Cycle Q Clear(g_c), s	2.5	0.3	0.5	0.6	0.4	0.4	7.6	4.5	0.6	7.3	5.6	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	453	291	247	460	291	247	417	1829	816	464	1829	816
V/C Ratio(X)	0.25	0.08	0.15	0.05	0.11	0.11	0.11	0.50	0.09	0.17	0.57	0.11
Avail Cap(c_a), veh/h	1130	1233	1045	1137	1233	1045	488	2344	1045	548	2344	1045
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.0	9.8	10.0	10.1	9.9	9.9	7.2	4.3	3.4	6.7	4.6	3.4
Incr Delay (d2), s/veh	0.3	0.1	0.3	0.0	0.2	0.2	0.1	0.2	0.0	0.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	10.0	10.2	10.2	10.1	10.1	7.3	4.5	3.4	6.9	4.9	3.5
LnGrp LOS	B	A	B	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		170			80			1024			1220	
Approach Delay, s/veh		10.9			10.1			4.6			4.9	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.5		8.7		18.5		8.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		9.6		4.5		9.3		2.6				
Green Ext Time (p_c), s		4.0		0.4		4.8		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			5.3									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	16	5	54	8	233	3	141	76	86	116	4
Future Vol, veh/h	5	16	5	54	8	233	3	141	76	86	116	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	100	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	17	5	59	9	253	3	153	83	93	126	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	646	556	128	526	517	195	130	0	0	236	0	0
Stage 1	314	314	-	201	201	-	-	-	-	-	-	-
Stage 2	332	242	-	325	316	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	385	439	922	462	462	846	1455	-	-	1331	-	-
Stage 1	697	656	-	801	735	-	-	-	-	-	-	-
Stage 2	681	705	-	687	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	251	407	922	420	429	846	1455	-	-	1331	-	-
Mov Cap-2 Maneuver	251	407	-	420	429	-	-	-	-	-	-	-
Stage 1	696	610	-	799	734	-	-	-	-	-	-	-
Stage 2	471	704	-	617	609	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	12.1	0.1	3.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1455	-	-	251	469	420	820	1331	-	-
HCM Lane V/C Ratio	0.002	-	-	0.022	0.049	0.14	0.319	0.07	-	-
HCM Control Delay (s)	7.5	-	-	19.7	13.1	15	11.4	7.9	-	-
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.5	1.4	0.2	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	70	21	9	27	14
Future Vol, veh/h	4	70	21	9	27	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	76	23	10	29	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	33	0	-	0	74	17
Stage 1	-	-	-	-	28	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1577	-	-	-	921	1058
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	971	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1577	-	-	-	918	1058
Mov Cap-2 Maneuver	-	-	-	-	865	-
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	971	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1577	-	-	-	922
HCM Lane V/C Ratio	0.003	-	-	-	0.048
HCM Control Delay (s)	7.3	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	47	26	9	27	14
Future Vol, veh/h	4	47	26	9	27	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	51	28	10	29	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	38	0	-	0	67	19
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1571	-	-	-	930	1055
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1571	-	-	-	927	1055
Mov Cap-2 Maneuver	-	-	-	-	872	-
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	984	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1571	-	-	-	927
HCM Lane V/C Ratio	0.003	-	-	-	0.048
HCM Control Delay (s)	7.3	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	30	34	6	21	7
Future Vol, veh/h	2	30	34	6	21	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	33	37	7	23	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	44	0	-	0	62	22
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	21	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1563	-	-	-	937	1050
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	999	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1563	-	-	-	936	1050
Mov Cap-2 Maneuver	-	-	-	-	876	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	999	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1563	-	-	-	914
HCM Lane V/C Ratio	0.001	-	-	-	0.033
HCM Control Delay (s)	7.3	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	6	2	11	21	7
Future Vol, veh/h	34	6	2	11	21	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	7	2	12	23	8

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	62	8	0	0	14	0
Stage 1	8	-	-	-	-	-
Stage 2	54	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	944	1074	-	-	1604	-
Stage 1	1015	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	931	1074	-	-	1604	-
Mov Cap-2 Maneuver	867	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	5.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	867	1074	1604	-
HCM Lane V/C Ratio	-	-	0.043	0.006	0.014	-
HCM Control Delay (s)	-	-	9.3	8.4	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	0	4	4	0	14
Future Vol, veh/h	14	0	4	4	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	0	4	4	0	15

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	21	6	0	0	8	0
Stage 1	6	-	-	-	-	-
Stage 2	15	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	996	1077	-	-	1612	-
Stage 1	1017	-	-	-	-	-
Stage 2	1008	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	996	1077	-	-	1612	-
Mov Cap-2 Maneuver	916	-	-	-	-	-
Stage 1	1017	-	-	-	-	-
Stage 2	1008	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	916	1612	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	2	0	7	7	0
Future Vol, veh/h	2	2	0	7	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	0	8	8	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	4	0	11	3
Stage 1	-	-	-	-	3	-
Stage 2	-	-	-	-	8	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1618	-	1009	1081
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1015	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1618	-	1009	1081
Mov Cap-2 Maneuver	-	-	-	-	925	-
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	1015	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	925	-	-	1618	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s)	8.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

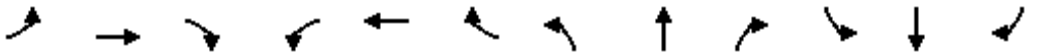
Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	2	0	0	7	0
Future Vol, veh/h	0	2	0	0	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	0	0	8	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1620	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1620	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	932	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	932	-	-	1620	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s)	8.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	8	57	175	16	82	76	426	52	47	1078	150
Future Volume (veh/h)	85	8	57	175	16	82	76	426	52	47	1078	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	9	63	194	18	91	84	473	58	52	1198	167
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	483	407	345	498	407	345	321	1832	817	599	1832	817
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1284	1870	1585	1328	1870	1585	398	3554	1585	873	3554	1585
Grp Volume(v), veh/h	94	9	63	194	18	91	84	473	58	52	1198	167
Grp Sat Flow(s),veh/h/ln	1284	1870	1585	1328	1870	1585	398	1777	1585	873	1777	1585
Q Serve(g_s), s	2.1	0.1	1.1	4.5	0.3	1.6	6.6	2.5	0.6	1.2	8.3	1.9
Cycle Q Clear(g_c), s	2.4	0.1	1.1	4.7	0.3	1.6	14.9	2.5	0.6	3.7	8.3	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	483	407	345	498	407	345	321	1832	817	599	1832	817
V/C Ratio(X)	0.19	0.02	0.18	0.39	0.04	0.26	0.26	0.26	0.07	0.09	0.65	0.20
Avail Cap(c_a), veh/h	890	999	847	918	999	847	328	1899	847	615	1899	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	10.4	10.7	12.2	10.4	10.9	11.4	4.6	4.1	5.6	6.0	4.4
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.5	0.0	0.4	0.4	0.1	0.0	0.1	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.3	1.1	0.1	0.5	0.4	0.2	0.1	0.1	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	10.4	11.0	12.7	10.5	11.3	11.8	4.6	4.1	5.7	6.7	4.5
LnGrp LOS	B	B	B	B	B	B	B	A	A	A	A	A
Approach Vol, veh/h		166			303			615			1417	
Approach Delay, s/veh		11.3			12.2			5.6			6.4	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		21.9		11.8		21.9		11.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		16.9		4.4		10.3		6.7				
Green Ext Time (p_c), s		0.5		0.4		4.7		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			7.2									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	15	6	161	25	43	6	42	81	34	38	0
Future Vol, veh/h	1	15	6	161	25	43	6	42	81	34	38	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	100	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	16	7	175	27	47	7	46	88	37	41	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	256	263	41	231	219	90	41	0	0	134	0	0
Stage 1	115	115	-	104	104	-	-	-	-	-	-	-
Stage 2	141	148	-	127	115	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	697	642	1030	724	679	968	1568	-	-	1451	-	-
Stage 1	890	800	-	902	809	-	-	-	-	-	-	-
Stage 2	862	775	-	877	800	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	628	623	1030	689	659	968	1568	-	-	1451	-	-
Mov Cap-2 Maneuver	628	623	-	689	659	-	-	-	-	-	-	-
Stage 1	886	780	-	898	806	-	-	-	-	-	-	-
Stage 2	789	772	-	831	780	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	11.3	0.3	3.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1568	-	-	628	702	689	826	1451	-	-
HCM Lane V/C Ratio	0.004	-	-	0.002	0.033	0.254	0.089	0.025	-	-
HCM Control Delay (s)	7.3	-	-	10.7	10.3	12	9.8	7.5	-	-
HCM Lane LOS	A	-	-	B	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	1	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	42	71	29	17	8
Future Vol, veh/h	14	42	71	29	17	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	46	77	32	18	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	109	0	-	0	146	55
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	53	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1479	-	-	-	832	1000
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	963	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1479	-	-	-	824	1000
Mov Cap-2 Maneuver	-	-	-	-	801	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	963	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1479	-	-	-	855
HCM Lane V/C Ratio	0.01	-	-	-	0.032
HCM Control Delay (s)	7.5	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	39	50	29	17	8
Future Vol, veh/h	14	39	50	29	17	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	42	54	32	18	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	86	0	-	0	121	43
Stage 1	-	-	-	-	70	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1508	-	-	-	862	1018
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	965	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1508	-	-	-	853	1018
Mov Cap-2 Maneuver	-	-	-	-	822	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	965	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1508	-	-	-	876
HCM Lane V/C Ratio	0.01	-	-	-	0.031
HCM Control Delay (s)	7.4	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	41	37	21	12	4
Future Vol, veh/h	7	41	37	21	12	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	45	40	23	13	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	63	0	-	0	91	32
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1538	-	-	-	899	1035
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	978	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1538	-	-	-	895	1035
Mov Cap-2 Maneuver	-	-	-	-	850	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	978	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1538	-	-	-	890
HCM Lane V/C Ratio	0.005	-	-	-	0.02
HCM Control Delay (s)	7.4	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	21	7	36	12	4
Future Vol, veh/h	21	21	7	36	12	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	23	8	39	13	4

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	58	28	0	0	47	0
Stage 1	28	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	949	1047	-	-	1560	-
Stage 1	995	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	941	1047	-	-	1560	-
Mov Cap-2 Maneuver	881	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	985	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	5.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	881	1047	1560	-
HCM Lane V/C Ratio	-	-	0.026	0.022	0.008	-
HCM Control Delay (s)	-	-	9.2	8.5	7.3	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	0	14	14	0	8
Future Vol, veh/h	8	0	14	14	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	0	15	15	0	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	32	23	0	0	30	0
Stage 1	23	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	982	1054	-	-	1583	-
Stage 1	1000	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	982	1054	-	-	1583	-
Mov Cap-2 Maneuver	907	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1014	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	907	1583	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	7	7	0	4	4	0
Future Vol, veh/h	7	7	0	4	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	8	0	4	4	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	16	0	16	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1602	-	1002	1069
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1019	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1602	-	1002	1069
Mov Cap-2 Maneuver	-	-	-	-	920	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1019	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	920	-	-	1602	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	8.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	0	4	0
Future Vol, veh/h	0	7	0	0	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	0	0	4	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	8	0	5	4
Stage 1	-	-	-	-	4	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1612	-	1017	1080
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1612	-	1017	1080
Mov Cap-2 Maneuver	-	-	-	-	930	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	930	-	-	1612	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	8.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Tooele City
Est. 1853

MEMORANDUM

To: City Council
CC: Planning Commission
From: Mayor Debra E. Winn, City Administration
Date: January 19, 2021
Re: Administrative Recommendation for Canyon Springs Annexation

On December 15, 2021, I provided to you my City Administration recommendation regarding the proposed Canyon Springs annexation. That recommendation is attached for your convenience. That Memorandum contained detailed recommendations in the following areas:

- Parks.
- Trails.
- Storm Water Detention.
- Zoning; Lot Size; Density.
- Park Strip Landscaping
- Architectural Design.

(Also attached are the Canyon Springs concept plan, and the September 2, 2021, letter from the City to the petitioner indicating the types of studies and information that would be required prior to annexation.)

In that Memorandum, I was not able to provide detailed recommendations regarding water, sewer, storm water, transportation, public safety, and fiscal considerations, because they had been inadequately studied by the petitioner, and contained no specific information to which my staff and I could respond.

The purpose of this Memorandum is to provide to the City Council my City Administration recommendation for the specific issues the petitioner should study and the specific information the petitioner should provide to the City Council to assist the Council in making the policy determination of whether the proposed Canyon Springs annexation is in the best interest of Tooele City.

Culinary Water

The information provided by the petitioner to date examines the water infrastructure impacts only on the Canyon Springs project site, and fails to study the impact of Canyon Springs upon the existing City infrastructure. We recommend that the petitioner retain the City's water infrastructure consultant, Hansen Allen & Luce, to model the impacts of Canyon Springs upon the City culinary water system. The analysis should include at least the following:

- Calculate the anticipated water demand from Canyon Springs.
- Calculate the remaining ERU capacity of the water system facilities impacted by the Canyon Springs demand.

- Determine the point at which new development impacts on these water system facilities (not just Canyon Springs impacts) would require additional pipeline capacity, i.e., through new parallel lines or upsize of existing lines.
- Determine the point at which new development impacts on these water system facilities (not just Canyon Springs impacts) would require additional culinary water sources, reservoirs, pump stations, transmission piping, distribution piping, and related facilities.
- Run the water model to calculate and demonstrate these impacts and capacities.
- Estimate the cost to construct and maintain any new off-site water infrastructure required due to Canyon Springs impacts.
- Estimate the degree to which Canyon Springs impacts will accelerate the need for new off-site water infrastructure in light of Canyon Springs capacity demands.

Sewer

The information provided by the petitioner to date examines the sewer infrastructure impacts only on the Canyon Springs project site, and fails to study the impact of Canyon Springs upon the existing City infrastructure. We recommend that the petitioner retain the City's sewer infrastructure consultant, Hansen Allen & Luce, to model the impacts of Canyon Springs upon the City sanitary sewer system. The analysis should include at least the following:

- Calculate the anticipated sewer demand from Canyon Springs.
- Calculate the remaining ERU capacity of the sewer collection system facilities impacted by the Canyon Springs demand.
- Calculate the remaining ERU capacity of the sewer treatment plant impacted by the Canyon Springs demand.
- Determine the point at which new development impacts on the sewer system (not just Canyon Springs impacts) would require additional collection capacity, i.e., through new parallel lines, upsize of existing lines, and new interceptors.
- Determine the point at which new development impacts on the sewer system (not just Canyon Springs impacts) would require additional sewer treatment capacity.
- Run the sewer model to calculate and demonstrate these impacts and capacities.
- Estimate the cost to construct and maintain any new off-site sewer infrastructure required due to Canyon Springs impacts.
- Estimate the degree to which Canyon Springs impacts will accelerate the need for new off-site sewer infrastructure in light of Canyon Springs capacity demands.

Storm Water

The information provided by the petitioner to date examines storm water infrastructure impacts only on the Canyon Springs project site, and fails to study the impact of Canyon Springs upon the existing City infrastructure. We recommend that the petitioner retain the City's sewer infrastructure consultant, Hansen Allen & Luce, to model the impacts of Canyon Springs upon the City storm water system. The analysis should include at least the following:

- Calculate the anticipated storm water generation from Canyon Springs.

- Examine the extent of historic storm water entering and flowing through or around the Canyon Springs property.
- Examine the manner in which historic storm water entering or flowing through or around the Canyon Springs property will be routed through the Canyon Springs development, including in light of the current concept plan.
- Evaluate the impacts of historic storm water flows and on-site detention runoff to downstream drainage channels and facilities, including those outside the City limits.
- Determine new on-site and off-site storm water infrastructure needed to route historic storm water through the Canyon Springs property, and the associated construction and maintenance costs.

Impact Fees

Tooele City water and sewer impact fees are determined by detailed analyses of the respective water and sewer systems, remaining capacities in those systems, the development potential of undeveloped land already located with the City, and the new capital facilities required by new growth. The impact fee capital facilities plans supporting the impact fee calculations are based on that in-city analysis. Annexing substantial acreage and development potential has the potential to significantly alter capital facilities modeling, capital facilities planning, capital facilities costs, and impact fee calculations. Infrastructure "system improvements" required by the Canyon Springs development are not included in the City's capital facilities planning or impact fee analyses. Additional capital facilities analyses will be required to accurately determine and assess impact fees the City will collect from Canyon Springs and use to pay for new system improvements required by Canyon Springs. Existing impact fee calculations and revenue balances may not be applicable to Canyon Springs. To resolve this concern, we recommend that the petitioner retain the City's infrastructure consultant, Hansen Allen & Luce, and the City's impact fee consultant, Lewis Young Robertson & Burningham, to perform additional capital facility, impact, and fee analyses in order to determine new system improvements required by Canyon Springs, existing system improvements impacted by Canyon Springs, and the correct impact fees assessable to Canyon Springs development. Specific public hearings are required by state statute.

Water Rights

Kennecott water rights credits are available only for use within the Tooele City limits. The remaining capacity in the Kennecott B Well, associated with Kennecott water rights credits, has been acquired by the petitioner for the Canyon Springs annexation. This acquisition has accelerated a water rights crisis under which approximately 200 acre-feet of Kennecott water rights credits, intended for in-city development, are no longer available for in-city development, but were acquired under the speculation that Tooele City would annex Canyon Springs. Annexation of Canyon Springs will directly affect the availability of Kennecott water rights credits to development already located within Tooele City but stranded for the lack of other available water rights on the market. Tied to the water impact studies referenced above, use of Kennecott water rights credits on new annexations may dramatically accelerate the need for Tooele City to

develop new water sources (wells) and construct additional storage and transmission capacity. Those costs, and the timing of those costs, should be studied thoroughly.

Transportation

The information provided by the petitioner to date provides anticipated traffic counts generated by Canyon Springs, but fails to study the impact of Canyon Springs upon the existing City and County road infrastructure. We recommend that the petitioner retain a qualified transportation engineer to analyze the impacts of Canyon Springs upon City and County transportation systems. The analysis should include at least the following:

- Impacts of Canyon Springs on Droubay Road, including, vehicle movement into and out of the development, required turning, acceleration, and deceleration lanes, striping, traffic movement rating (e.g. A through F), anticipated and posted speeds, existing traffic speeds, and signage.
- Impacts of Canyon Springs on nearby road intersections with, for example, Smelter Road and 1000 North, and whether traffic control devices should be altered or required.
- Impacts upon school walking routes, including crosswalks, school zones speeds, and school zone lighting and signage.

Parks and Recreation

In addition to the items mentioned in my December 15, 2021, Memorandum, we suggest that the following additional information should be studied and provided regarding the anticipated cost of parks and recreation maintenance in Canyon Springs, including the following:

- landscaped park areas
- storm water detention areas
- trail areas
- park strips
- turf (e.g., fertilizer, mowing)
- irrigation systems
- public trees
- winterizing and spring startup
- weed control
- trail and other public fencing
- trail and park lighting
- playground equipment, including inspection, repair, and year 15 replacement

In addition, if Canyon Springs will not contain its own park facility, the petitioner should be required to study the impacts of the Canyon Springs population upon other existing City park facilities.

Police and Fire.

The information provided by the petitioner to date does not examine public safety impacts. I recommend that the following be carefully studied:

- Required full time equivalent (FTE) police department staff attributable to Canyon Springs based on current per-capita staffing.
- Required vehicles, gear, and other equipment and supplies associated with required FTE.
- Anticipated increased dispatch calls and associated dispatch fees.
- Costs associated with the above.

Fiscal Analysis.

The information provided by the petitioner to date does not adequately examine fiscal impacts of Canyon Springs upon the City. Inaccurate assumptions and conclusions provided by the petitioner's consultants to date should be corrected. Cost of Community Services Studies should be considered. Cost impacts to City administrative departments should be examined, including FTE, benefits, equipment, vehicles, supplies, insurance, etc.

Conclusion.

The City Administration recommends that the petitioner be required to provide the requested information prior to annexation, and not be allowed to defer important studies until after annexation. The information is necessary for the City Council to determine the costs and benefits of the Canyon Springs annexation and development to Tooele City. The Council deserves a solid understanding of what the annexation will do to and for Tooele City, and whether the annexation will be a net positive for Tooele City. I suggest that the objective is not to tip the scale barely from the negative to the positive, but for the City Council to achieve the best positive it can for Tooele City. The information and analyses recommended above will help provide the tools and information the City Council deserves and needs in order to achieve the best result for Tooele.

If my Administration can provide any further information or assistance, we would be happy to do so.

Tooele City
Est. 1853

MEMORANDUM

To: City Council
CC: Planning Commission
From: Mayor Debra E. Winn, City Administration
Date: December 15, 2021
Re: Administrative Recommendation for Canyon Springs Annexation

On September 9, 2021, the City Council approved Resolution 2021-18, accepting the petition of Howard Schmidt ("Petitioner") for the Canyon Springs annexation ("Annexation"), for further consideration. The Resolution contemplated the City Administration submitting to the City Council and Planning Commission its zoning and other recommendations regarding the Annexation. This memorandum contains the City Administration (pronoun "we") recommendation regarding the Canyon Springs Annexation.

Recommendation #1. The City Administration opposes the Annexation, and all development-driven annexations, at this point in time in Tooele City's history. The City contains vast acreages of undeveloped land which should be developed first, under the tenets and objectives of the Tooele City General Plan, prior to any new annexations being approved. Also, the Petitioner proposes for the Canyon Springs development ("Canyon Springs") ubiquitous R1-7 zoning for single-family housing, and proposes no unique or special features or amenities beyond the bare minimum that would be required for land already within the City. Finally, the City's municipal resources—most notably water—are limited, and new annexations will stretch those already scarce resources, perhaps beyond prudent levels.

Recommendation #2. The City Administration recommends adherence to the fundamental principle that any annexation a) pay for itself, i.e., not result in a revenue loss to the City, b) provide benefits and amenities beyond the bare minimum required by the City Code, and c) enhance resident quality of life. We urge the City Council to answer this fundamental question: *What about Canyon Springs will make the Annexation serve the best interest of Tooele City and its taxpayers?* Corollary questions include: *What will the Annexation do FOR Tooele City?* and *What will the Annexation do TO Tooele City?* Should the City Council favor the Annexation, the City Administration recommends, at a minimum, inclusion of the following considerations into an annexation agreement prior to the Annexation's approval.

1. Parks. On September 9, 2021, the City Council asked the Petitioner to study the impact of Canyon Springs on Tooele City's parks and recreation (and other) systems. While the City received a letter dated November 15 purporting to contain the requested studies ("Studies"), no parks impact analysis was included. We recommend that the study be undertaken and provided. In the interim, we make some park- and trail-related recommendations, below.

2. Trails. The Petitioner has proposed conveying to the City a long, narrow strip of land ("Trail Land"), currently owned by a third party, for a trail ("Trail"), to be located along the southeast Canyon Springs boundary. The Trail Land is located outside the City limits, outside the approved Annexation Grown Plan expansion areas, outside the Canyon Springs annexation

plat, and outside Canyon Springs (the Canyon Springs concept plan is enclosed). The Trail in this location would be low-functioning because it is located outside Canyon Springs, leads to no connecting or proposed trails in the City or the County, and is isolated from public visibility, where it would tend to invite increased criminal conduct. Instead, the City Administration proposes that Canyon Springs incorporate a looped trail on the development interior, thus being more visible and accessible to the residents, and being looped rather than a dead end. The Trail should be maintained by an HOA. Additional benefits of the Trail in this location and configuration are discussed in #4, below. Should the City Council favor the Trail as depicted in the Canyon Springs concept plan, we recommend that the Trail Land first be included in expansion area K of the City's Annexation Growth Plan, be included in an amended annexation petition, be deeded to Tooele City, and be improved, as express conditions of the Annexation.

3. Storm Water. On September 9, 2021, the City Council asked the Petitioner to study the impact of Canyon Springs on Tooele City's storm water systems, including historic flows and on-site detention. The Studies contain general estimates, broad assumptions, and brief conclusory statements about Canyon Springs' storm water impacts. The Studies are not responsive to the Council's request. Instead, the Studies defer to detailed post-annexation analysis of storm water impacts. The City Administration strongly recommends that the storm water impacts of Canyon Springs be fully studied and understood prior to any decision on the Annexation. Comments specific to the storm water detention shown on the concept plan follow.

4. Storm Water Detention. We disfavor the three storm water detention areas on Droubay Road as depicted on the Canyon Springs concept plan. They are disconnected and fragmented, they would be ineffective at serving their intended purpose, and they appear to be strategically located to avoid the City's double-frontage lot right-of-way improvements. Similarly, we disfavor a single large detention area on Droubay Road at the northwest corner of Canyon Springs. Instead, we recommend that storm water detention be a series of detention facilities ("Facilities"), designed to accommodate the natural or built topography. The Facilities should be multi-functional, integrated into the internal looped Trail, and designed to be community amenities. The detention areas should include vertical recreational improvements (e.g., play equipment, exercise equipment, benches, pavilions) in order to maximize their multi-functional purpose. As part of the Trail, the Facilities should be maintained by an HOA.

5. Zoning; Lot Size; Density. We recognize that the above recommendations regarding the Trail and the Facilities may result in fewer residential lots than currently projected in Canyon Springs. However, we believe this decrease will be offset by the increased value of the resulting premium lots located near the Trail and Facilities open spaces throughout Canyon Springs. We recommend the R1-8 zoning designation for lots adjacent to Droubay Road (to the west, zoned R1-7) and to the Carr Fork subdivision (to the north, zoned R1-7), transitioning to R1-10 and/or R1-12 for the remaining portions of Canyon Springs. In addition, we recommend that the City Council and the Petitioner study and consider the viability and value of a Neighborhood Commercial component to Canyon Springs. This recommendation

is based on the fact that single-family residential development generates greater costs than revenues, on average nationally $1.16 in costs for every $1.00 in revenues, and about $1.25:$1.00 in Utah. (*See* "Cost of Community Services Studies," Farmland Information Center, 2016.)

6. Park Strip Landscaping. Grassed five-foot park strips are recognized as inefficient water uses. We suggest that Canyon Springs represent a change in City park strip landscaping standards away from turf grass and toward lower water usage. To that end, we recommend that Canyon Springs park strips be landscaped with drip-irrigated xeriscaping, of a professional design acceptable to the City, using specific approved tree species. In the alternative, we recommend a park strip width of eight (8) feet in order to increase irrigation efficiencies, increase snow storage capacity, and reduce conflicts between trees and concrete. All uniform park strip landscaping would be maintained by an HOA. The Droubay Road frontage should comply with the City's double-frontage lot standards, found in TCC Chapter 7-19, including a masonry wall, all HOA-maintained.

7. Architectural Design. We recommend that all single-family homes in Canyon Springs comply with the architectural design standards of TCC Chapter 7-11b. These standards are not merely "pretty codes," but contribute both to the long-term value and equity of the houses, and to the quality of life of the residents.

8. Water. On September 9, 2021, the City Council asked the Petitioner to study the impact of Canyon Springs on Tooele City's culinary water system. The Studies contain general estimates, broad assumptions, and conclusory statements about Canyon Springs' water impacts. The Studies are not responsive to the Council's request. Instead, the Studies defer to post-annexation modeling by the City. We recommend that the water impacts of Canyon Springs be fully studied and understood prior to any decision on the Annexation.

9. Water Rights. We recommend that water rights be provided consistent with City Code.

10. Sewer. On September 9, 2021, the City Council asked the Petitioner to study the impact of Canyon Springs on Tooele City's sanitary sewer system. The Studies contain general estimates, broad assumptions, and brief conclusory statements about Canyon Springs' sewer impacts. The Studies are not responsive to the Council's request. Instead, the Studies defer to post-annexation modeling by the City. We recommend that the sewer impacts of Canyon Springs be fully studied and understood prior to any decision on the Annexation.

11. Transportation. On September 9, 2021, the City Council asked the Petitioner to study the transportation impacts of Canyon Springs. The Studies contain general estimates, broad assumptions, and brief conclusory statements about Canyon Springs' transportation impacts. The Studies are not responsive to the Council's request. For example, a vehicle trip generation count alone is not an analysis. The study should examine the effect of the trip generation on traffic control devices, a traffic light, medians, acceleration and deceleration lanes, school routes, crosswalks, crossing guards, etc. Instead, the Studies defer to post-annexation studies of transportation impacts. We recommend that the transportation

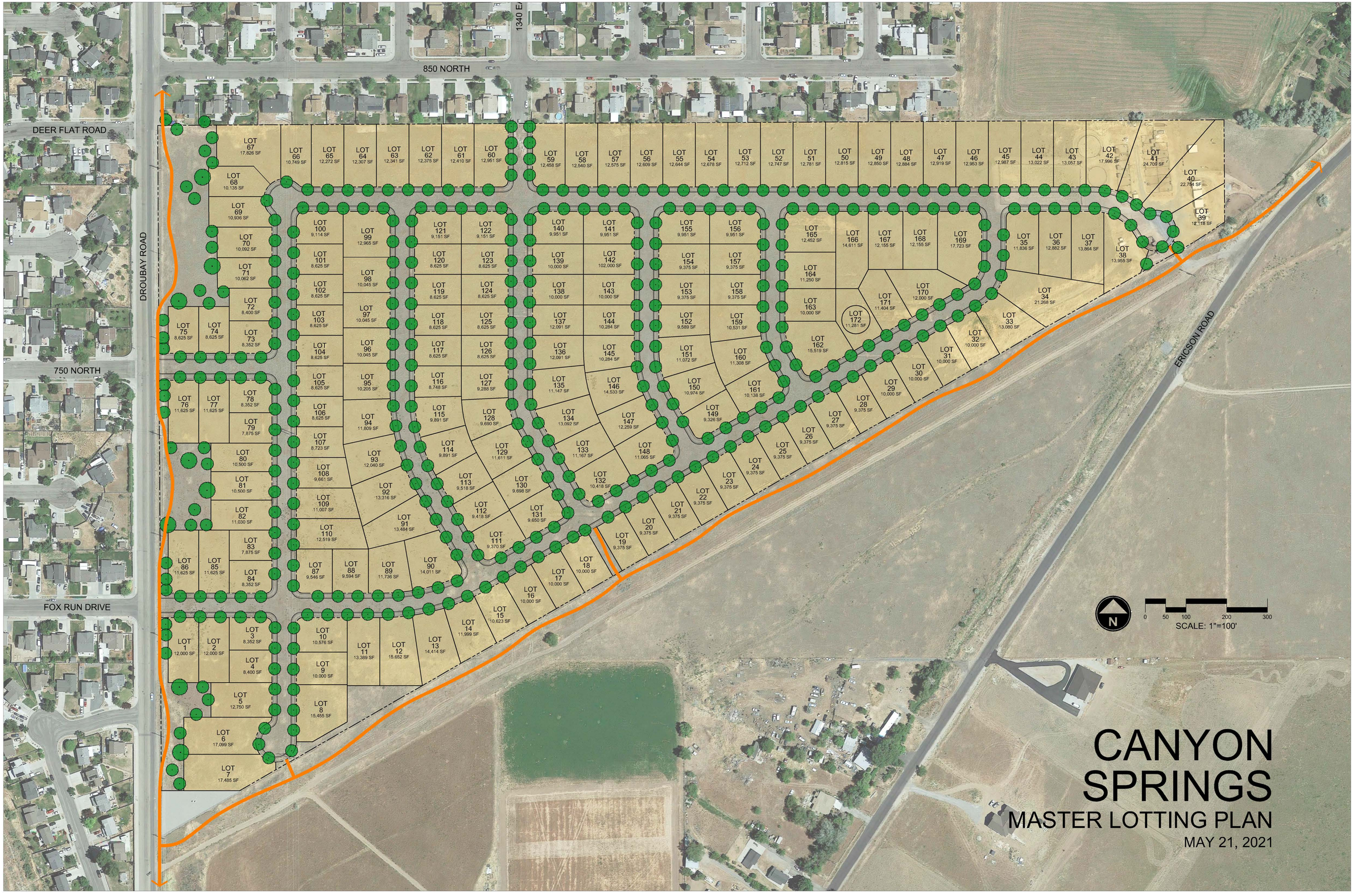
impacts of Canyon Springs be fully studied and understood prior to any decision on the Annexation.

12. Police and Fire. On September 9, 2021, the City Council asked the Petitioner to provide an analysis of the impacts Canyon Springs will have on police and fire service. The Studies contain brief conclusory statements about Canyon Springs' impacts. The Studies are not responsive to the Council's request. We recommend that the fiscal impacts of Canyon Springs be fully studied and understood prior to any decision on the Annexation.

13. Fiscal Analysis. On September 9, 2021, the City Council asked the Petitioner to provide a fiscal impact analysis for Canyon Springs. The Studies contain general estimates, broad and incorrect assumptions, and brief conclusory statements about Canyon Springs' fiscal impacts. The Studies are not responsive to the Council's request. For example, the assumptions of per-lot benefits to the City, applied city-wide, would result in a nearly $8 million general fund surplus annually. This is far from accurate. Also, the incorrect assumptions lead to a significant net positive cost-to-revenue outcome, when national and Utah data all indicate otherwise. (*See* "Cost of Community Services Studies.") The City Administration strongly recommends that the fiscal impacts of Canyon Springs be fully studied and understood prior to any decision on the Annexation.

The City Council has reasonably requested the Petitioner to provide the information necessary to determine the costs and benefits of the Annexation and Canyon Springs. It is not appropriate for the Petitioner to shift back to the City the burden of determining the costs and impacts of the Annexation. We have urged the City Council to answer the questions, *What will the Annexation do to and for Tooele City?* and *Will the Annexation be a net positive for Tooele City?* The Council cannot adequately answer these questions with the Studies provided to date. At this time, We recommend that the Annexation is not ready to be reviewed by the Planning Commission for its public hearing and recommendation. Once the full analyses have been provided and evaluated, we will prepare additional recommendations for you.

My Administration looks forward to discussing fully these issues with the Planning Commission and City Council, and appreciates the opportunity to provide these initial recommendations.



CANYON SPRINGS

MASTER LOTTING PLAN

MAY 21, 2021

September 2, 2021

Howard Schmidt
PO Box 95410
South Jordan, Utah 84095

FILE COPY

RE: Canyon Springs Annexation Petition Acceptance for Further Consideration

Dear Mr. Schmidt,

The purpose of this letter is to provide formal notice to you, as the applicant that on September 1, 2021, the Tooele City Council voted to approve Resolution 2021-18 to allow further consideration of your Canyon Springs Annexation petition. The approval of this resolution does not approve the annexation nor does it provide any assurances of future decision-making regarding this petition. As a statutory requirement of the Utah State Code, the approval of this resolution merely allows for the study and review of the petition for annexation to continue. As a result of this action by the City Council, Tooele City staff has begun the process of reviewing the petition for certification as required by law. As a part of their approval of the resolution, the City Council specified a series of studies to be conducted by you and the results provided to the City prior to continuation of the formal process of consideration. Those studies are as follows:

1. Water System Study to include at least the availability, sizing, and capacities for water rights, sources, storage, and transmission lines needed to service the demand impact generated by the annexation and anticipated development of the subject property;
2. Sewer System Study to include at least availability, sizing, and capacities for treatment, collection lines, and transmission lines needed to service the demand impact generated by the annexation and anticipated development of the subject property;
3. Storm Drain Study to include at least availability, sizing, and capacities for detention and retention facilities, regional storm water management, and storm water outfall needed to service the demand impact generated by the annexation and anticipated development of the subject property;
4. Transportation Study to include at least availability, sizing, and capacities for access and egress of the area, traffic loads, infrastructure design, and active transportation for pedestrian and non-motorized travel needed to service the demand impact generated by the annexation and anticipated development of the subject property;
5. Parks and Recreation Study to include at least impact on existing facilities, proposed features and facilities, and system improvements needed to service the demand impact generated by the annexation and anticipated development of the subject property;
6. Public Safety Study to include at least impact of expanding service area demands, coverage, equipment and apparatus, and levels of service needed to service the police, fire, other emergency services demand impact generated by the annexation and anticipated development of the subject property; and
7. General City Impacts to include at least levels of service of all City functions, staffing levels, and taxation implications needed to service the demand generated by the annexation and anticipated development of the subject property.

These studies should be conducted by professional engineers or other qualified design firms, with resulting reports. Should these firms need information from Tooele City, they should send their requests to me, and I will reach out to the appropriate departments. I will be your point of contact for receiving the completed study reports. In future correspondence and/or meetings, the City Administration will indicate to you what

additional considerations the City will require in an annexation agreement as conditions to any future annexation approval.

Sincerely,

Jim Bolser, *AICP*
Director, Community Development Department
Tooele City Corporation

Cc: Debra E. Winn, Mayor
Melodi Gochis, City Council Chair
Roger Baker, City Attorney
Michelle Pitt, City Recorder
File

Petition for Annexation

Community Development Department
90 North Main Street, Tooele, UT 84074
(435) 843-2132 Fax (435) 843-2139
www.tooelecity.org

Tooele City
Est. 1853

Notice: The applicant must submit copies of the pertinent plans and documents to be reviewed by the City in accordance with the terms of the Utah State Code and Tooele City Code. All submitted Petition for Annexation applications shall be reviewed in accordance with all applicable State and City ordinances and requirements, are subject to compliance reviews by various City departments, and may be returned to the applicant for revision if the plans are found to be inadequate or inconsistent with the requirements of the State Code and City Code. Application submission in no way guarantees placement of the application on any particular agenda of any City reviewing body. It is **strongly** advised that all checklist items be submitted well in advance of any anticipated deadlines.

Annexation Information

P20-1152

Date of Submission:	Total Acres:	Expansion Option Area:
11-16-20	61.16	

Project Name:

General Address: Droubay Road 800 North

Current Use of Property: Vacant grazing, Horses

Sponsor:	Address:		
Howard Schmidt	PO Box 95410		
Phone:	City:	State:	Zip:
801 562-1414	So Jordan	UT	84095
Primary Phone Number:	Cell Number:	Email:	
	801-859-9449	howard@bracmarco.com	

Signature of Sponsor: [signature] Date 11-16-20

*The application you are submitting will become a public record pursuant to the provisions of the Utah State Government Records Access and Management Act (GRAMA). You are asked to furnish the information on this form for the purpose of identification and to expedite the processing of your request. This information will be used only so far as necessary for completing the transaction. If you decide not to supply the requested information, you should be aware that your application may take a longer time or may be impossible to complete. If you are an "at-risk government employee" as defined in *Utah Code Ann.* § 63-2-302.5, please inform the city employee accepting this information. Tooele City does not currently share your private, controlled or protected information with any other person or government entity, except as required by GRAMA.

** By submitting this application form to the City, the applicant acknowledges that the above list is not exclusive and under no circumstances waives any responsibility or obligation of the Applicant and or his Agents from full compliance with Utah State Code and City Master Plans, Codes, Rules and or Regulations.

****** NOTE ******

According to Utah State Code Section 10-2-403(7), it is the sole responsibility of the *SPONSOR* of a Petition For Annexation to deliver to the County Clerk a complete copy of the same petition to annex property *on the same calendar day* the petition is filed with the City.

2201137

For Office Use Only

Fee:	Received By:	Date Received:	Receipt #:
2000.00 (213)	CA	11/16/20	00387443

Petition for Annexation Application Checklist

Incomplete applications will not be accepted or held.
All required items shall be submitted to the City Recorder.

Submission Requirements (see also Utah State Code Section 10-2-403)

____ Application Fee
✓ Completed Application Form
✓ Completed Record of Petitioned Properties. In order to constitute a complete and viable Petition, the Record of Petitioned Properties must contain the signatures of property owners that make up *at least*:
- 50% of the land area included in the Petition for Annexation
- 33% of the property value, according to the County Assessor's Office valuations, of all properties included in the Petition for Annexation

____ A Statement of Proposed Intent for the properties contained within the area petitioned for annexation
✓ An Accurate Legal Description for the Complete Boundary of the proposed Annexation prepared by a Licensed Surveyor
- It is *strongly* encouraged that the legal description be verified by the County Surveyor prior to submission to avoid unnecessary delays

✓ A paper copy of an accurate recordable map depicting the proposed area of annexation including at least the following:
- It is *strongly* encouraged that the plat be submitted in paper form to be verified and approved as to form *prior* to submitting the petition to avoid unnecessary delays
- A disk or thumb drive of all petition materials in digital format (original PDF) including AutoCAD format for the plat and all drawings
- Certification by Date, Signature and Seal by the Engineer or Surveyor preparing the plat
- Property Owner Certifications, including acknowledgement by a Notary Public for each
- Proper Signature Blocks for each of the following:
  - The Tooele City Planning Commission, including signature lines for each Planning Commissioner voting in favor of the annexation
  - The Tooele City Council, including signature lines for each Planning Commissioner voting in favor of the annexation and a signature line for the City Recorder to attest the signatures of the City Council members
  - The Tooele City Attorney
  - The Tooele City Recorder certifying:
    - the date and time the plat was filed
    - the Ordinance number by which the City Council approved the plat and proposed annexation
    - the date of approval and certification by the City Council
  - The Tooele City Engineer
  - The Tooele City Community Development Department
- County Recorder's Certification of Recording

____ Notice of annexation petition sent to affected entities including:
- A copy of the noticing sent to affected entities
- A complete list of affected entities to which the notice was sent
- Demonstration of the date on which the notices were sent to affected entities

******Note:*** According to Utah State Code Section 10-2-403(7) it is the sole responsibility of the *Sponsor* to submit a copy of the complete Petition for Annexation to the City and the County Clerk on the same calendar day.

Additional Information

With the City Council's adoption of a resolution accepting the Petition for Annexation for further consideration, as required by Utah State Code Section 10-2-405, the City Council may also require any of the following and/or any other information or study determined necessary for proper consideration of the Petition for Annexation for approval or denial.

____ Feasibility Study of Impact to the existing public systems for each of the following:
- Water, including water rights, sources, storage, transmission, phasing, and master planning
- Sewer, including collection systems, transmission, treatment capacity, phasing, and master planning
- Transportation, including upgrades to existing infrastructure, new infrastructure, traffic control, phasing, and master planning
- Parks and Recreation, including levels of service, facility needs, phasing, and master planning
- Public Safety, including service area, response times, staffing and personnel levels, and facility and equipment needs and levels of services for police and fire protection services
- Storm Drain, including collection systems, transmission, detention/retention, phasing, and master planning
- Tax and Revenue, including impact fees generation, cost of services for annexation area, property and sales tax revenues from the annexation area, and full-time equivalent employee calculations for each department to provide city services to the annexation area

____ Conceptual Development and Land Use Plans
____ Annexation Agreement

******Note:*** It is *strongly* recommended that applicants familiarize themselves with the procedures and requirements for consideration of a Petition for Annexation found in Utah State Code Section 10-2-400 et. seq. and Tooele City Code Chapter 7-24.

AFFIDAVIT

PROPERTY OWNER

STATE OF UTAH }
}ss
COUNTY OF TOOELE }

I/~~we~~, Howard Schmidt being duly sworn, depose and say that I/~~we~~ am/~~are~~ the owner(s) of the property identified in the attached application and that the statements herein contained and the information provided in the attached plans and other exhibits are in all respects true and correct to the best of my/~~our~~ knowledge. I/~~we~~ also acknowledge that I/~~we~~ have received written instructions regarding the application for which I/~~we~~ am/are applying and the Tooele City Community Development Department staff have indicated they are available to assist me in making this application.

(Property Owner)

(Property Owner)

Subscribed and sworn to me this 16 day of November, 2020

LAURA BANKHEAD
Notary Public - State of Utah
Comm. No. 691960
My Commission Expires on
Dec 20, 2020

Laura Bankhead
(Notary)
Residing in Tooele County, Utah
My commission expires: 12/20/2020

AGENT AUTHORIZATION

I/we, _____, the owner(s) of the real property described in the attached application, do authorize as my/our agent(s), _____, to represent me/us regarding the attached application and to appear on my/our behalf before any administrative or legislative body in the City considering this application and to act in all respects as our agent in matters pertaining to the attached application.

(Property Owner)

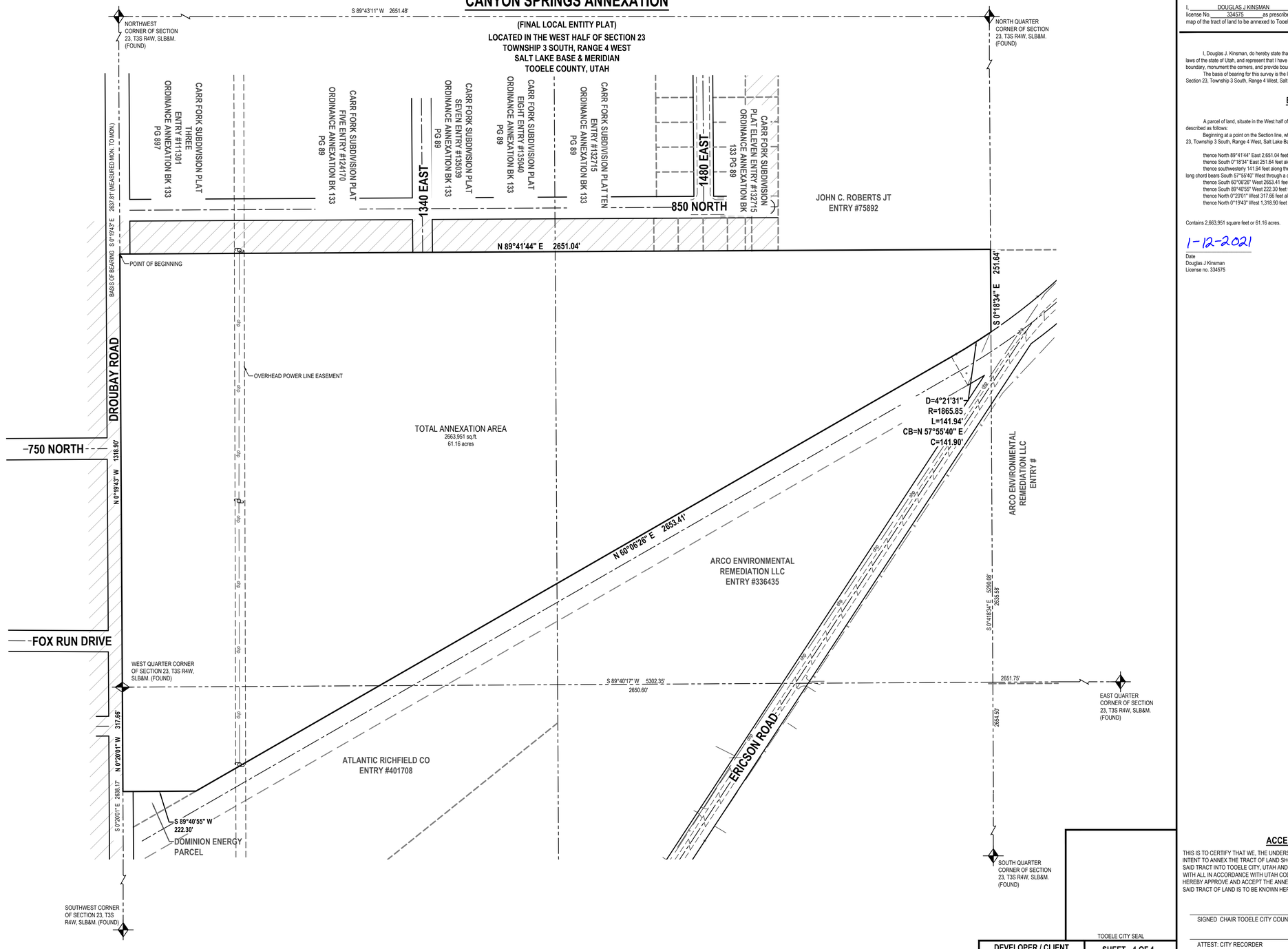
(Property Owner)

Dated this ___ day of _____, 20__, personally appeared before me _____, the signer(s) of the agent authorization who duly acknowledged to me that they executed the same.

(Notary)
Residing in _____ County, Utah
My commission expires: _____

CANYON SPRINGS ANNEXATION

(FINAL LOCAL ENTITY PLAT)
LOCATED IN THE WEST HALF OF SECTION 23
TOWNSHIP 3 SOUTH, RANGE 4 WEST
SALT LAKE BASE & MERIDIAN
TOOELE COUNTY, UTAH



LEGEND

- ANNEXATION BOUNDARY
- SECTION QUARTER LINE
- CENTER LINE
- EASEMENT
- ADJACENT PROPERTY LINE
- ASPHALT
- EXISTING FENCE
- TOOELE CITY LIMITS

NORTH

HORIZONTAL GRAPHIC SCALE

150 0 75 150 300
(IN FEET)
HORZ: 1 inch = 150 ft.

SURVEYOR'S CERTIFICATE

I, DOUGLAS J KINSMAN do hereby certify that I am a Professional Land Surveyor, and that I hold license No. 334575 as prescribed under laws of the State of Utah. I further certify that this is a true and accurate map of the tract of land to be annexed to Tooele City, Tooele County, Utah.

SURVEYORS NARRATIVE

I, Douglas J. Kinsman, do hereby state that I am a Professional Land Surveyor, and that I hold license no. 334575, as prescribed by the laws of the state of Utah, and represent that I have made a survey of the following described property. The purpose of this survey is to retrace the boundary, monument the corners, and provide boundary information to our client.

The basis of bearing for this survey is the line between the found monuments at the Northwest Corner and the West Quarter Corner of Section 23, Township 3 South, Range 4 West, Salt Lake Base and Meridian, which bears South 0°19'43" East 2637.81 feet.

BOUNDARY DESCRIPTION

A parcel of land, situate in the West half of Section 23, Township 3 South, Range 4 West, Salt Lake Base and Meridian, more particularly described as follows:

Beginning at a point on the Section line, which is located South 0°19'43" East 1318.90 feet from the found Northwest Corner of Section 23, Township 3 South, Range 4 West, Salt Lake Base and Meridian, and running:

thence North 89°41'44" East 2,651.04 feet to the Quarter Section line;
thence South 0°18'34" East 251.64 feet along said Section line;
thence southwesterly 141.94 feet along the arc of a 1865.85 foot radius curve to the right (center bears North 34°15'05" West and the long chord bears South 57°55'40" West through a central angle of 4°21'31");
thence South 60°06'26" West 2653.41 feet;
thence South 89°40'55" West 222.30 feet to a point on the Section line;
thence North 0°20'01" West 317.66 feet along said Section line to the West Quarter Corner of said Section;
thence North 0°19'43" West 1,318.90 feet along said Section line, to the Point of Beginning.

Contains 2,663,951 square feet or 61.16 acres.

1-12-2021
Date
Douglas J Kinsman
License no. 334575

PROFESSIONAL LAND SURVEYOR No. 334575 DOUGLAS J. KINSMAN STATE OF UTAH
1-12-21

ACKNOWLEDGMENT

STATE OF UTAH } S.S.
County of Tooele

On the _____ day of _____ A.D., 20_____ personally appeared before me, the undersigned Notary public, in and for said County of Tooele in said State of Utah, who after being duly sworn, acknowledged to me that He/She/They signed the foregoing Dedication, _____ in number, freely and voluntarily for the purposes therein mentioned.

MY COMMISSION EXPIRES: _____.

_____ RESIDING IN _____ COUNTY.
NOTARY PUBLIC

ENSIGN
TOOELE
169 North Main Street Unit 1
Tooele, Utah 84074
Phone:435.843.3590
Fax: 435.578.0108
WWW.ENSIGNUTAH.COM

SALT LAKE CITY
Phone: 801.255.0529
LAYTON
Phone: 801.547.1100
PLEASANT GROVE
Phone: 801.796.8145

OWNER'S WITNESS

In witness hereof we have here unto set our hands this the _____ day of _____ A.D., 20_____.

_____
Howard Schmidt

COUNTY SURVEYOR APPROVAL

APPROVED THIS _____ DAY OF _____, 20_____.
BY THE TOOELE COUNTY SURVEYOR .

_____
TOOELE COUNTY SURVEYOR

ACCEPTANCE BY LEGISLATIVE BODY

THIS IS TO CERTIFY THAT WE, THE UNDERSIGNED TOOELE CITY COUNCIL HAVE ADOPTED A RESOLUTION OF ITS INTENT TO ANNEX THE TRACT OF LAND SHOWN HEREIN AND SUBSEQUENTLY ADOPTED AN ORDINANCE ANNEXING SAID TRACT INTO TOOELE CITY, UTAH AND THAT A COPY OF THE ORDINANCE HAS BEEN PREPARED FOR FILING HERE WITH ALL IN ACCORDANCE WITH UTAH CODE SECTION 10-2-403 AS REVISED AND THAT WE HAVE EXAMINED AND DO HEREBY APPROVE AND ACCEPT THE ANNEXATION OF THE TRACT AS SHOWN AS A PART OF SAID CITY AND THAT SAID TRACT OF LAND IS TO BE KNOWN HEREAFTER AS THE **CANYON SPRINGS ANNEXATION**

_____
SIGNED CHAIR TOOELE CITY COUNCIL

_____ DATED THIS _____ DAY OF _____, 20____
ATTEST: CITY RECORDER

TOOELE CITY SEAL

DEVELOPER / CLIENT
LOVELL DEVELOPMENT GROUP
9463 SOUTH KIRKSIDE DR.
SOUTH JORDAN, UTAH
84009
CONTACT: BRETT LOVELL
PHONE: 801-706-4693

SHEET 1 OF 1

PROJECT NUMBER : 9602
MANAGER : D. KINSMAN
DRAWN BY : J. HOWLAND
CHECKED BY : D. KINSMAN
DATE : NOVEMBER 2020

CANYON SPRINGS ANNEXATION
(FINAL LOCAL ENTITY PLAT)

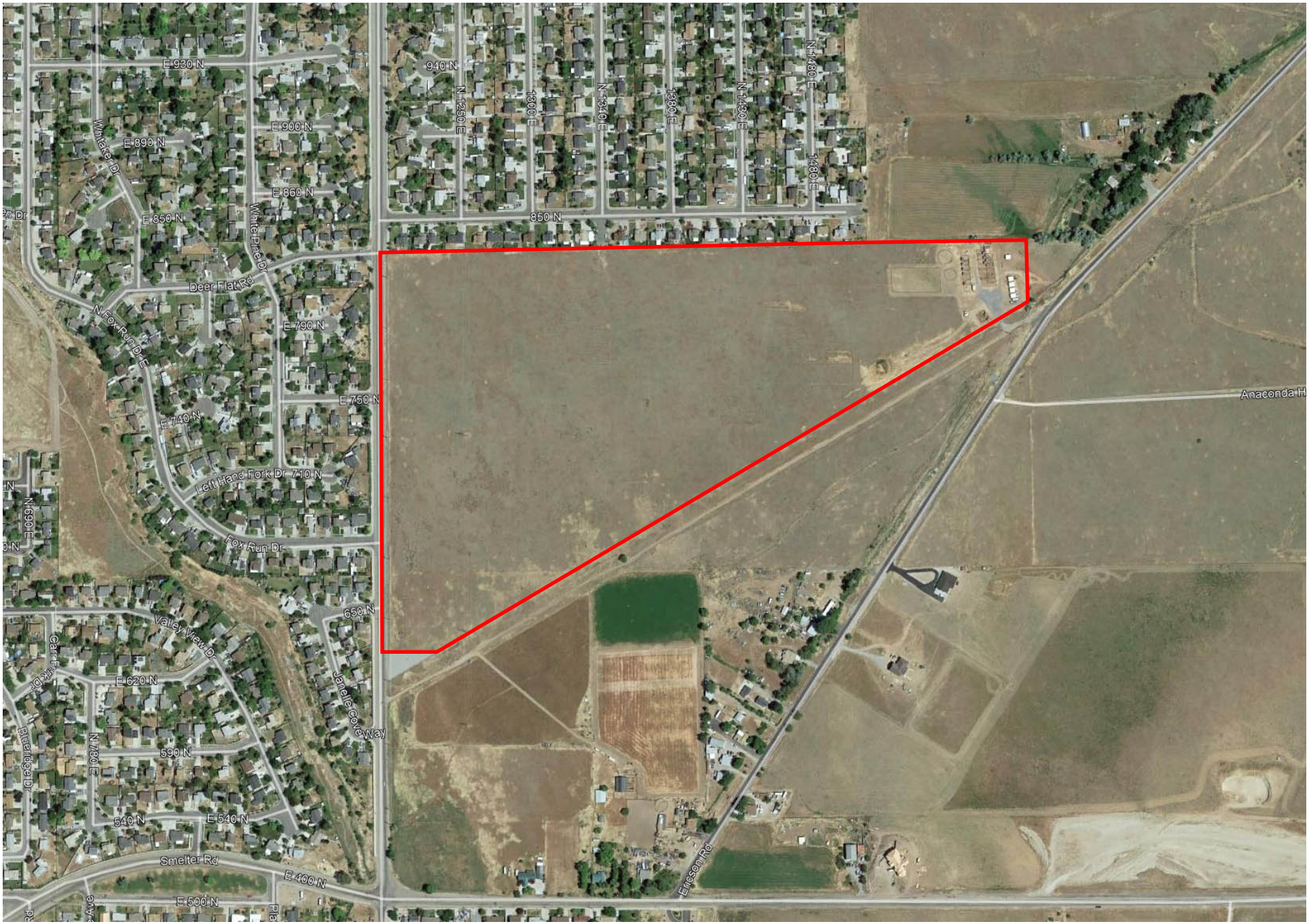
LOCATED IN THE WEST HALF OF SECTION 23
TOWNSHIP 3 SOUTH, RANGE 4 WEST
SALT LAKE BASE & MERIDIAN
TOOELE COUNTY, UTAH

TOOELE COUNTY RECORDER

RECORDED # _____ DATE: _____ TIME: _____
STATE OF UTAH, COUNTY OF TOOELE, RECORDED AND FILED AT THE
REQUEST OF : _____

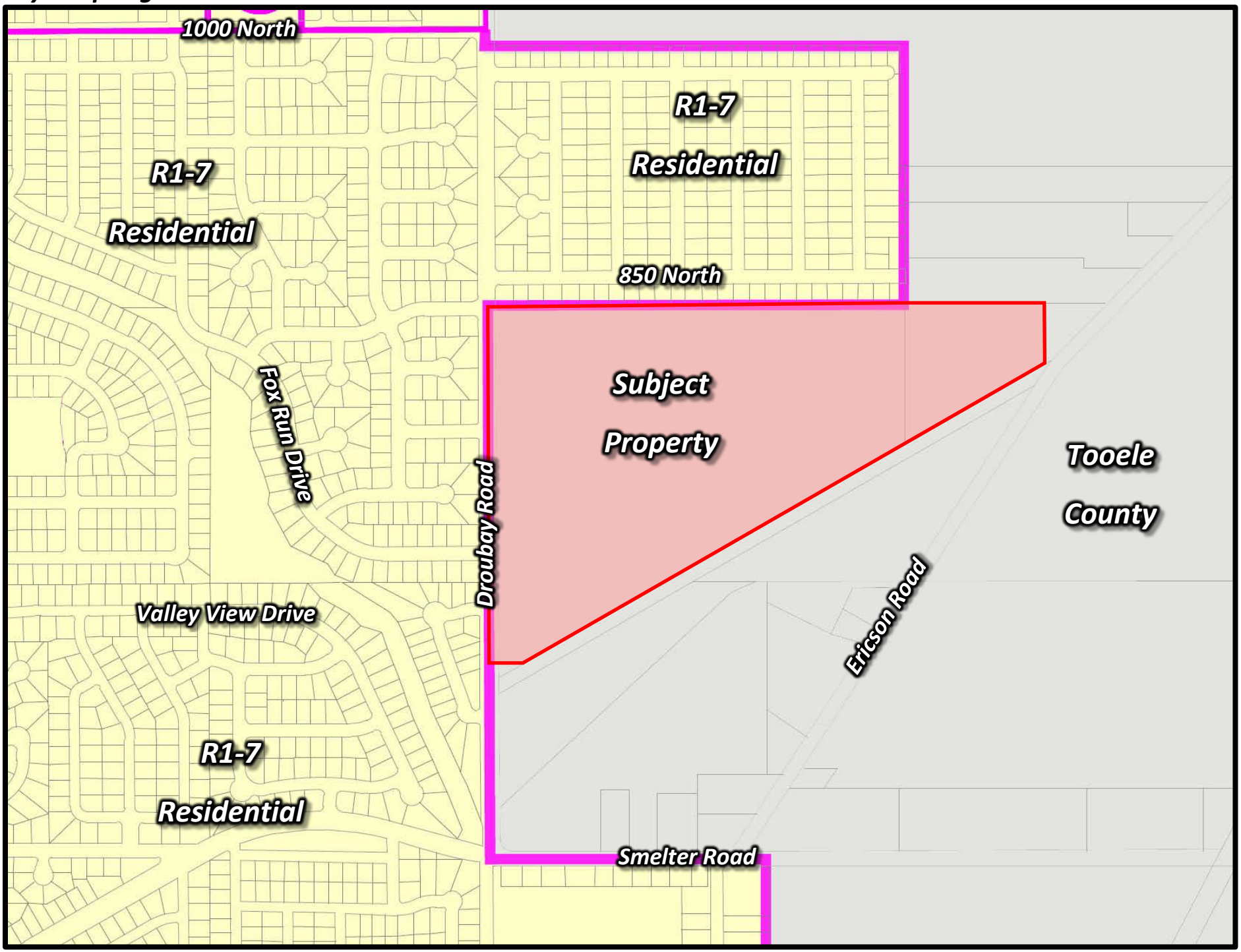
_____ _____
FEE$ TOOELE COUNTY RECORDER

Canyon Springs Annexation



Aerial Map

Canyon Springs Annexation



Zoning Map

MEMORANDUM

DATE: April 21, 2022

TO: Paul Hansen, P.E.
Tooele City Engineer
90 North Main
Tooele, Utah 84047

FROM: Katie Gibson Jacobsen, P.E.
Benjamin D. Miner, P.E.
Hansen, Allen & Luce, Inc. (HAL)
859 W. South Jordan Pkwy. Ste. 200
South Jordan, UT 84095

SUBJECT: Canyon Springs Annexation
Drinking Water System Review

PROJECT NO.: 149.08.148

INTRODUCTION

As requested, HAL has performed a review of the effects that the proposed Canyon Springs Annexation will have on the City's public water system. This includes a hydraulic modeling analysis of the proposed drinking water infrastructure for the development. The development is located at approximately 600 North to 840 North, east of Droubay Road in Tooele. The analysis assumes that the development density will be the same as a development layout provided to HAL by Tooele City. This analysis is based on the Utah Division of Drinking Water requirements and the criteria included in the Tooele City Drinking Water System Master Plan dated May 2021 (Master Plan).

This analysis includes a discussion of the effects of the proposed development on the existing system, as well as a discussion of the effects of adding this development to the future scenarios of the master plan.

DRINKING WATER SYSTEM

The Canyon Springs Annexation development is located between 600 North and 840 North east of Droubay Road in Tooele, Utah. The development includes 172 single family residential lots and covers approximately 60 acres. Figure 1 shows a schematic of the existing drinking water pipelines and our assumption of development pipelines. The development will likely propose constructing 8-inch diameter water lines along development streets.

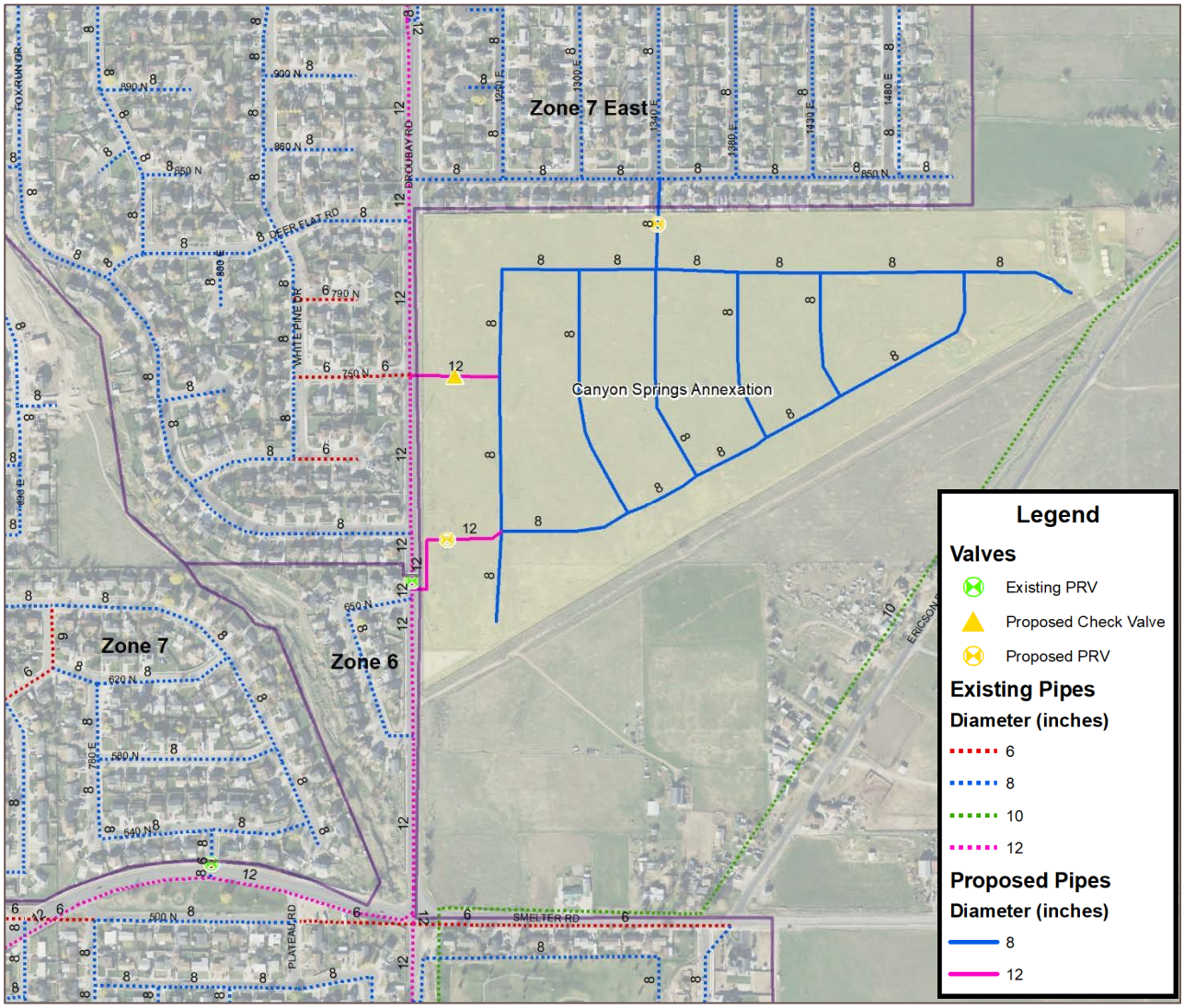


FIGURE 1: DEVELOPMENT LOCATION AND DRINKING WATER SYSTEM PIPE SIZE

Estimated Water Demand

Peak day water demand for the development was calculated using the Level of Service from the Master Plan and data currently available for the proposed development. Estimated indoor and outdoor irrigation demands are calculated as shown in Table 1.

TABLE 1: DRINKING WATER PEAK DAY DEMAND AND STORAGE VOLUME FOR DEVELOPMENT

Development	Units	ERCs	Source/Peak Day Demand[1] (gpm)	Storage[2] (gal)
Canyon Springs Annexation	172	172	153	93,300

1. Well Source Level of Service is 1,280 gpd per ERC (Tooele City Drinking Water Master Plan, 2021). A peaking factor of 1.75 was multiplied by the peak day demand to get the peak instantaneous demand.
2. The water storage Level of Service is 542 gallons per ERC (Tooele City Drinking Water Master Plan).

Source and Storage

The effects of the Canyon Springs annexation on source and storage were evaluated for the existing system and for the future scenario as described in the Master Plan. Demands for the Canyon Springs annexation area were not included in the Master Plan because they were outside the city boundary. This analysis includes adding these demands to the Master Plan scenarios.

Source and Storage – Existing System

Based on the City's source demand Level of Service of 1,280 gallons per day per ERC, the proposed development will require 153 gpm source capacity, as shown in Table 1. Currently, the City's total reliable source capacity is about 11,730 gpm. Existing demand for constructed development at the time of the 2020 Master Plan is estimated to be 11,600 gpm. With approved development included, the total City peak day demand is estimated to be 13,820 gpm, once all the approved development is constructed.

Based on the City's storage Level of Service of 542 gallons of storage per ERC, the proposed development will require 93,300 gallons of equalization storage, as shown in Table 1. Currently, the City's total storage capacity is 14.3 million gallons (MG). The required storage for existing development at the time of the 2020 Master Plan, including storage for fire flow and emergency, is estimated to be 8.9 MG. With approved development included, the required storage is estimated to be 10.3 MG.

A summary of the anticipated demands and storage requirements, including the proposed Canyon Springs Annexation development, is included in Table 2 below.

TABLE 2: CITY WATER SOURCE AND STORAGE SUMMARY

Description	ERCs		Source Demand (gpm)		Storage Required (MG)	
	This Item	Cumulative	This Item	Cumulative	This Item	Cumulative
2021 Master Plan	13,960	13,960	11,600	11,600	8.93	8.93
Approved Development	2,500	16,460	2,220	13,820	1.34	10.27
Canyon Springs Annexation	172	16,632	153	13,973	93,300 gal	10.36
Estimated City Capacity	-	-	-	11,730	-	14.27
Potential Excess (+) or Deficit (-)	-	-	-	-2,243[1] gpm	-	3.91 MG

Note 1 – This does not include the new wells under construction. See discussion below.

It may be observed in Table 2 that the predicted demand may exceed the available source capacity during peak demand periods if all approved development is constructed. The City anticipates completing production wells at Red Delpapa Park (Park well) and near 1500 North Berra Boulevard (Berra well) in the next few months. These wells are anticipated to produce at least 1,000 gpm and 1,500 gpm respectively, which would be enough to eliminate the estimated source deficit and provide a small reserve of about 250 gpm. The City can determine whether to allot this reserve to the Canyon Springs development or preserve it for development within the City. Additionally, the City may wish to preserve source capacity for redundancy in case any wells are out of service.

It is anticipated that adequate storage exists in the City's system for the proposed development.

Source and Storage – Master Plan Capital Facility Projects

The Master Plan indicates that after the Park well and Berra well are constructed, the next three wells are anticipated to provide at least 1,000 gpm each and need to be constructed as shown in Table 3.

TABLE 3: MASTER PLAN CAPITAL FACILITY PROJECTS – SOURCE

Project	Description	ERCs When Required
53-55	East A Well and 12-inch Transmission	15,081
56-57	East C Well and 12-inch Transmission	15,828
58-61	West A Well and 16-inch Transmission	16,950

As shown in Table 2 and Table 3 and based on the number of ERCs projected in the Master Plan the City should construct at least two additional wells beyond the Park Well and Berra Well as soon as possible. Transmission to bring water from these wells to the City is associated with each well, and also needs to be completed. As discussed previously, after adding the Park well and

Berra well to the system, there will be a remaining source capacity of approximately 250 gpm. The next well is needed because the 250 gpm remaining capacity provides very little redundancy or capacity for additional growth. Additionally, it will likely take several years to bring a well online.

The Master Plan indicates two wells are needed to provide full redundancy if the largest well is out of service. After construction of the Park and Berra wells, the Berra well is anticipated to be the largest well in the City system, providing 1,500 gpm. Without the Berra well available, reliable source capacity would be 12,730 gpm. As shown in Table 2, the source demand with the Canyon Springs annexation is 13,973 gpm. Assuming the largest well out of service, one additional well would likely increase the reliable capacity to approximately 13,730 gpm, and two wells would be required to provide the required source demand with a reasonable level of redundancy.

No storage projects are required by the Master Plan to accommodate the Canyon Springs annexation area in the near term.

Source and Storage – Additions to Master Plan System

The Canyon Springs annexation area was not included in the 2021 Master Plan. Adding the development will require additional source beyond what is shown in the Master Plan for the level of growth anticipated by 2060. The Master Plan identifies sources east of and south of Tooele City, potentially as far away as Vernon. Adding the annexation area will expedite the need for these sources, but will not require the identification of new sources.

The Master Plan identified a deficit of 0.1 MG storage at the level of growth anticipated by 2060. Adding the annexation area increases this deficit to 0.2 MG. This deficit will be remedied with the construction of the Berra well operational storage tank and other operational storage tanks discussed in the Master Plan.

Transmission

Tooele City maintains a water network computer model so that the system performance, including transmission capacity, can be evaluated. The proposed development was added to the model so that the effects of the development on the City system could be assessed.

Pressure Zone

The proposed Canyon Springs annexation would be served by the water line along Droubay Road. The pressure zone boundary between Zone 6 and Zone 7 is located at a pressure reducing valve (PRV) located at approximately 660 North Droubay Road. The southern point of the annexation area is adjacent to Zone 6 (higher pressure), and the remainder of the annexation area is adjacent to Zone 7 (lower pressure). Pressure zone boundaries are shown on Figure 1.

The model was used to evaluate which zone is most appropriate for the annexation area. If the development is included in Zone 7, pressures within the development will be insufficient to meet

City and Division of Drinking Water requirements. The development must be constructed as part of Zone 6. This requires constructing a 12-inch waterline to serve the development from upstream (south of) the 660 North Droubay Road PRV. A second PRV must be constructed exiting the development at the connection with the adjacent Carr Fork subdivision (1340 East 800 North). This will allow circulation through the proposed development. An additional 12-inch waterline connection must be constructed from the Zone 7 portion of Droubay Road into the development at 750 North. This connection will serve as a backup supply of water into the proposed development in the case of total loss of use of the primary 12-inch supply line. This waterline must include a check valve to prevent water from leaking through the development from the higher-pressure Zone 6 to Droubay Road. These features are shown on Figure 1.

Master Plan Capital Facility Projects

The master plan projects are shown in Figure 7-1 of the Master Plan. This figure is included in the appendix. The Master Plan indicates these projects should be constructed when the City reaches the number of ERCs shown in Table 4. Including all existing development, approved development, and the Canyon Springs annexation, the City is predicted to have a total of 16,632 ERCs.

TABLE 4: MASTER PLAN CAPITAL FACILITY PROJECTS – TRANSMISSION

Master Plan Project	Description	ERCs When Required
24	12-inch Tank 4 fill line from Canyon Rim line	14,706
25	Control valves on Tank 4 fill line	14,706
26	12-inch Outlet from Tank 4 to Skyline Drive, 980 LF	14,706
27	8-inch Waterline, 7th Street, Skyline Drive to Vine Street, 2970 LF	14,706
28	10-inch Waterline, 7th Street, Birch Street to Oquirrh Street, 130 LF	14,706
53-55	East A Well and 12-inch Transmission (~3 miles)	15,081
56-57	East C Well and 12-inch Transmission (~1 mile)	15,828
29	10-inch Waterline, Droubay Road, 280 North to 670 North, 3030 LF	16,575
30	8-inch Waterline, Parallel to Droubay Road, Valley View Drive to Fox Run Drive, 1500 LF	16,575
58-61	West A Well and 16-inch Transmission (~5 miles)	16,950

Master Plan Project 29 is shown as a 10-inch diameter waterline on Droubay Road from just south of Oquirrh Avenue to Fox Run Drive (670 North). This 10-inch waterline size is intended to be constructed in addition to the existing 12-inch waterline on Droubay Road. Rather than constructing parallel waterlines, a new 18-inch waterline would be constructed to replace the existing 12-inch waterline and planned 10-inch waterline. Master Plan Project 29 (18-inch waterline) should be constructed along the frontage of the proposed annexation area.

Master Plan Project 30 is an 8-inch waterline connecting portions of Zone 7 and is located adjacent to the proposed annexation area. A tee for this 8-inch waterline should be constructed as part of the work on Master Plan Project 29 in Droubay Road.

Master Plan Projects 24 through 28 are necessary to allow transmission of water from the City's tanks to Zone 6, Zone 7, and continuing northerly.

Master Plan Projects 53, 56, and 58 are three new wells with their associated transmission waterlines.

Model Results for the Proposed Development

Peak instantaneous minimum and maximum pressures within the development are shown in Table 5, Figure 2, and Figure 3. There is little expected pressure variation between the peak day and peak instantaneous conditions within the Canyon Springs development because the area is controlled by PRVs.

No fire suppression requirement was provided to HAL. The model predicts that the water system is capable of providing 2,400 gpm for fire suppression while maintaining a pressure of 20 psi throughout the system. To achieve this flowrate, several hydrants would be required.

TABLE 5: DRINKING WATER HYDRAULIC MODELING RESULTS WITHIN THE PROPOSED DEVELOPMENT

Condition	Pressure	
	Minimum	Maximum
Peak Day	72 psi	91 psi
Peak Instantaneous	72 psi	91 psi
Diurnal Pressure Variation	0 psi	
Fire Suppression Flow	2,400 gpm	

The proposed drinking water piping meets the criteria set by the Utah Division of Drinking Water and Tooele City for minimum pressures.

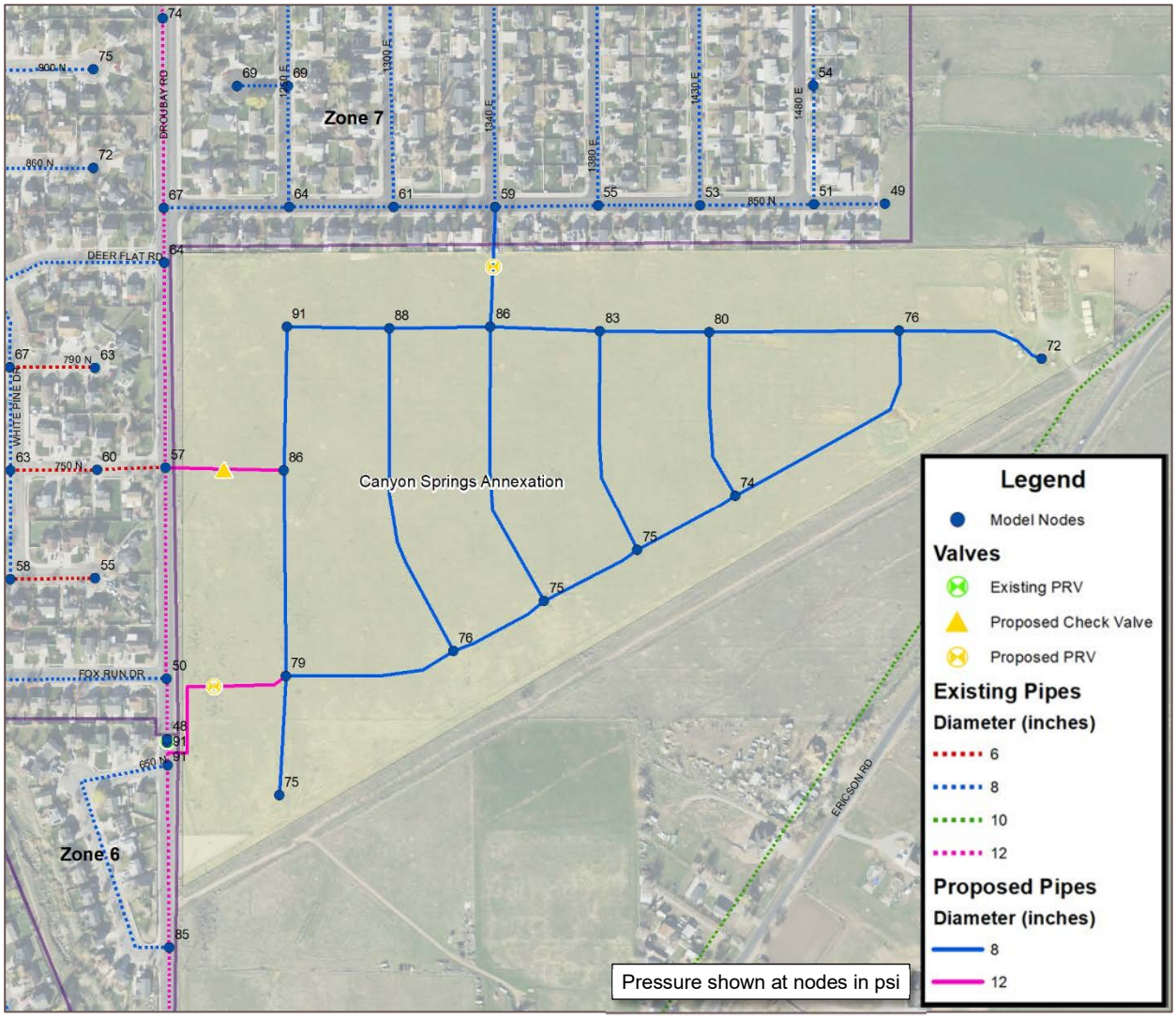


FIGURE 2: DRINKING WATER SYSTEM PEAK DAY PRESSURE

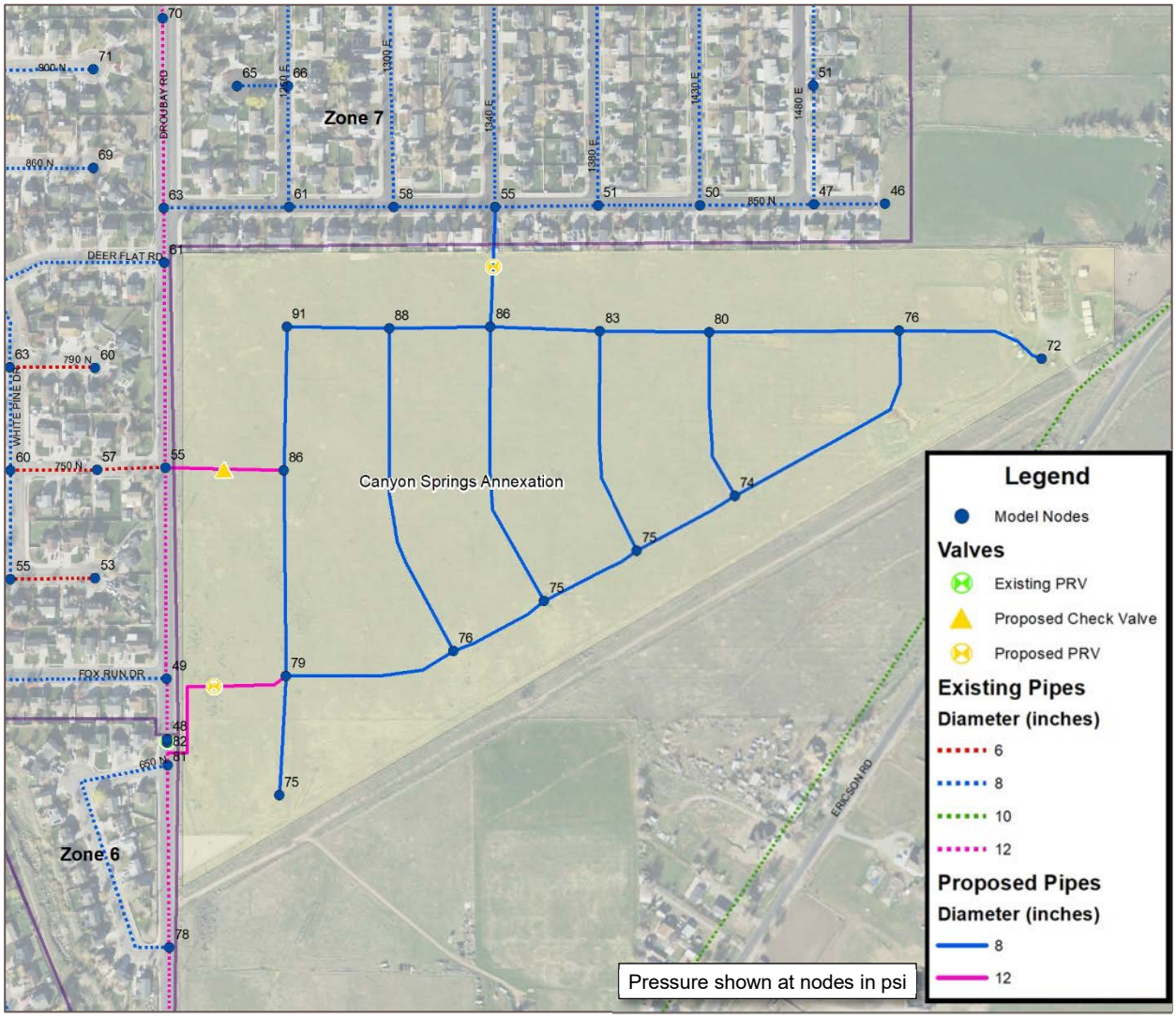


FIGURE 3: DRINKING WATER SYSTEM PEAK INSTANTANEOUS PRESSURE

EFFECTS OF THE PROPOSED DEVELOPMENT ON THE EXISTING SYSTEM

The drinking water model was used to evaluate effects on the existing system from the new development. Existing locations with modeled minimum pressures below 50 psi were evaluated to determine if construction of the new development will reduce pressure at these locations. The model predicts that adding the new development will cause decreases of 0-1 psi at these locations, and did not result in any service connection in the existing system not meeting the minimum pressures specified in UAC rule R309-105-9, including:

(a) 20 psi during conditions of fire flow and fire demand experienced during peak day demand;
(b) 30 psi during peak instantaneous demand; and
(c) 40 psi during peak day demand.

Existing locations with predicted available fire flow below 1,500 gpm were also evaluated. Available fire flow at these locations did not drop more than 0-5 gpm when the new development was added. The hydraulic analysis predicts that the proposed development will not adversely impact the existing system.

CONCLUSIONS AND RECOMMENDATIONS

- After the Park well and Berra well are completed and connected into the drinking water system, the City will have sufficient source capacity to provide peak day demand, but the remaining capacity is very small and does not provide full redundancy in the event a well is out of service. The City should continue efforts to pursue new sources of water immediately. If the proposed Canyon Springs annexation is approved, it will consume most of the available source capacity. This may prevent developments within the City boundaries from being approved in the near future.

- The development is expected to cause small reductions in pressure and available fire flow in the existing drinking water system; however, the system will continue to meet the criteria set by the Utah Division of Drinking Water and Tooele City. The model predicts that after completion of the Park well and Berra well, the system can supply 2,400 gpm for fire suppression within the Canyon Springs development.

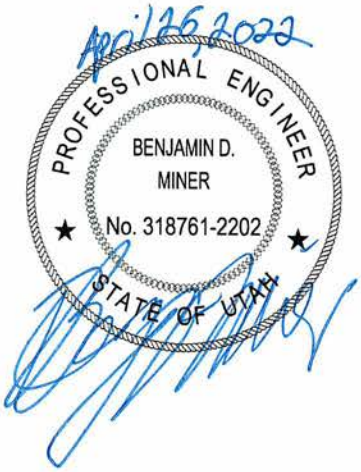
- The proposed Canyon Springs annexation area must be served from Pressure Zone 6 (higher pressure). This requires constructing a 12-inch waterline from upstream (south of) the 660 North Droubay Road PRV into the Canyon Springs development. A second PRV is required exiting the development at 1340 East 800 North. An additional backup 12-inch waterline connection must be constructed from Pressure Zone 7 (lower pressure) into the development at 750 North and must include a check valve.

- The analysis demonstrates there will be adequate storage available to support the Canyon Springs development.

HANSEN ALLEN & LUCE inc
ENGINEERS

MEMORANDUM

DATE: April 26, 2022



TO: Mr. Paul Hansen, P.E.
Tooele City Engineer
90 North Main
Tooele, Utah 84047

FROM: Benjamin D. Miner, P.E.
Jason Biesinger, Project Analyst
Hansen, Allen & Luce, Inc. (HAL)
859 W. South Jordan Pkwy. Ste. 200
South Jordan, UT 84095

SUBJECT: Canyon Springs Annexation - Wastewater Review

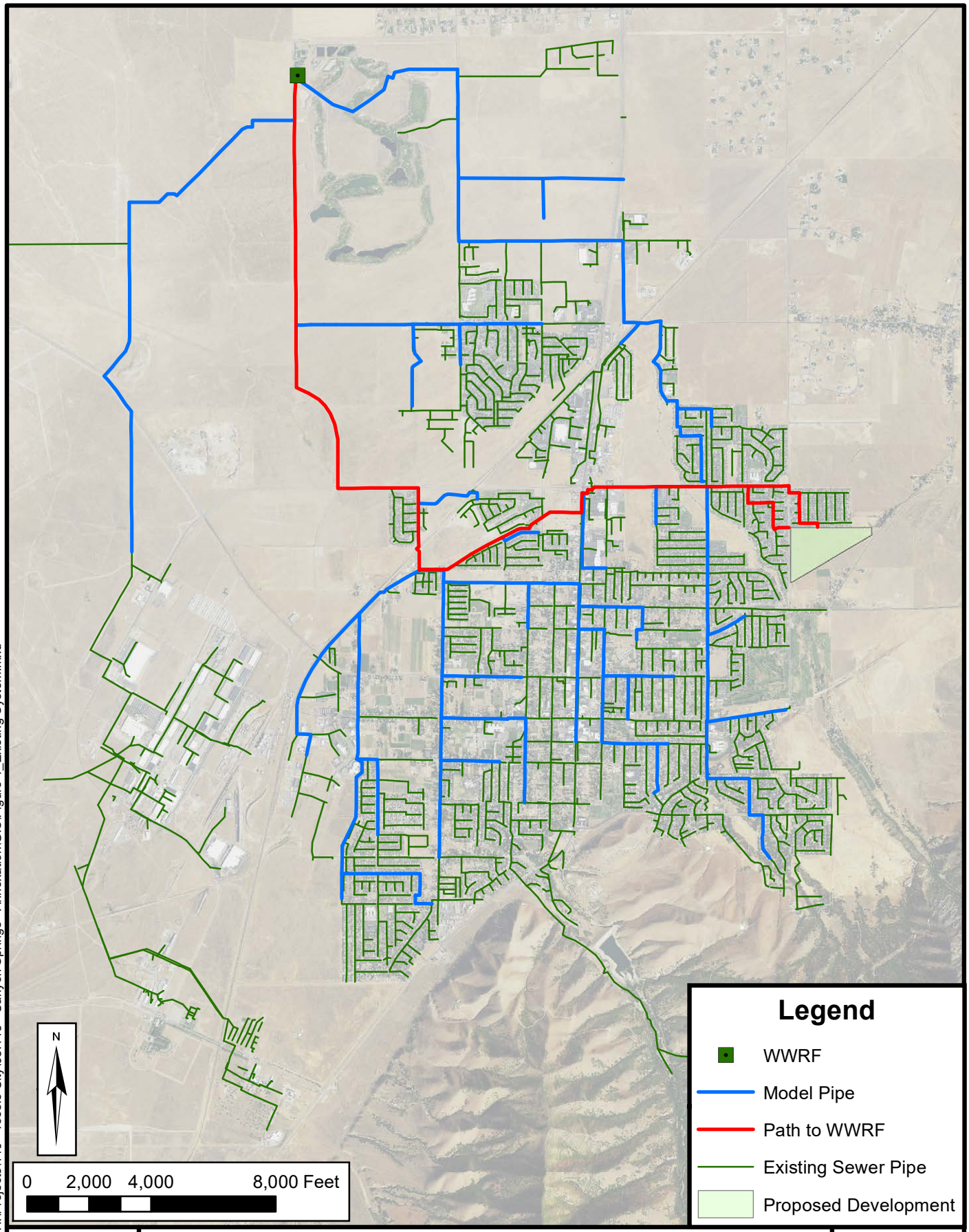
PROJECT NO.: 149.08.148

INTRODUCTION

As requested, HAL has performed a review of the effects of the proposed Canyon Springs Annexation on the City's public wastewater collection system. This includes a hydraulic modeling analysis of the proposed wastewater collection infrastructure for the development. The development is located at approximately 600 North to 840 North, east of Droubay Road in Tooele. The analysis assumes that the development density will be the same as a development layout provided to HAL by Tooele City. This analysis has considered the Utah Division of Water Quality (DWQ) requirements and predicted wastewater flow rates that have been identified as part of the on-going wastewater master plan study.

WASTEWATER SYSTEM

The Canyon Springs Annexation development is located at approximately 750 N and Droubay Road in Tooele, Utah, and will include 172 residential lots. Figure 1 shows a schematic map of the existing wastewater system in the vicinity of the proposed development. It is anticipated that the development will connect to existing 8-inch gravity lines on the northern and western boundaries of the proposed subdivision.



Date: 4/21/2022
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HANSEN ALLEN & LUCE inc
ENGINEERS

Tooele City - Canyon Springs Annexation
Existing Wastewater Collection System

FIGURE 1

ESTIMATED WASTEWATER GENERATION

Wastewater generation for the development was estimated based on data currently available for the proposed development. Estimates assume an average wastewater flow of 170 gpd/ERU for average daily flow. This value is peaked by 1.55 in the model analysis. Estimated wastewater production is provided in Table 1.

TABLE 1: EXISTIMATED WASTEWATER PRODUCTION FOR CANYON SPRINGS

Development	Units	ERUs	Daily Flow / ERU (gpd)	Average Daily Sewer Generation (gpd)	Average Daily Sewer Generation (gpm)
Canyon Springs Annexation	172	172	170	29,240	20.3

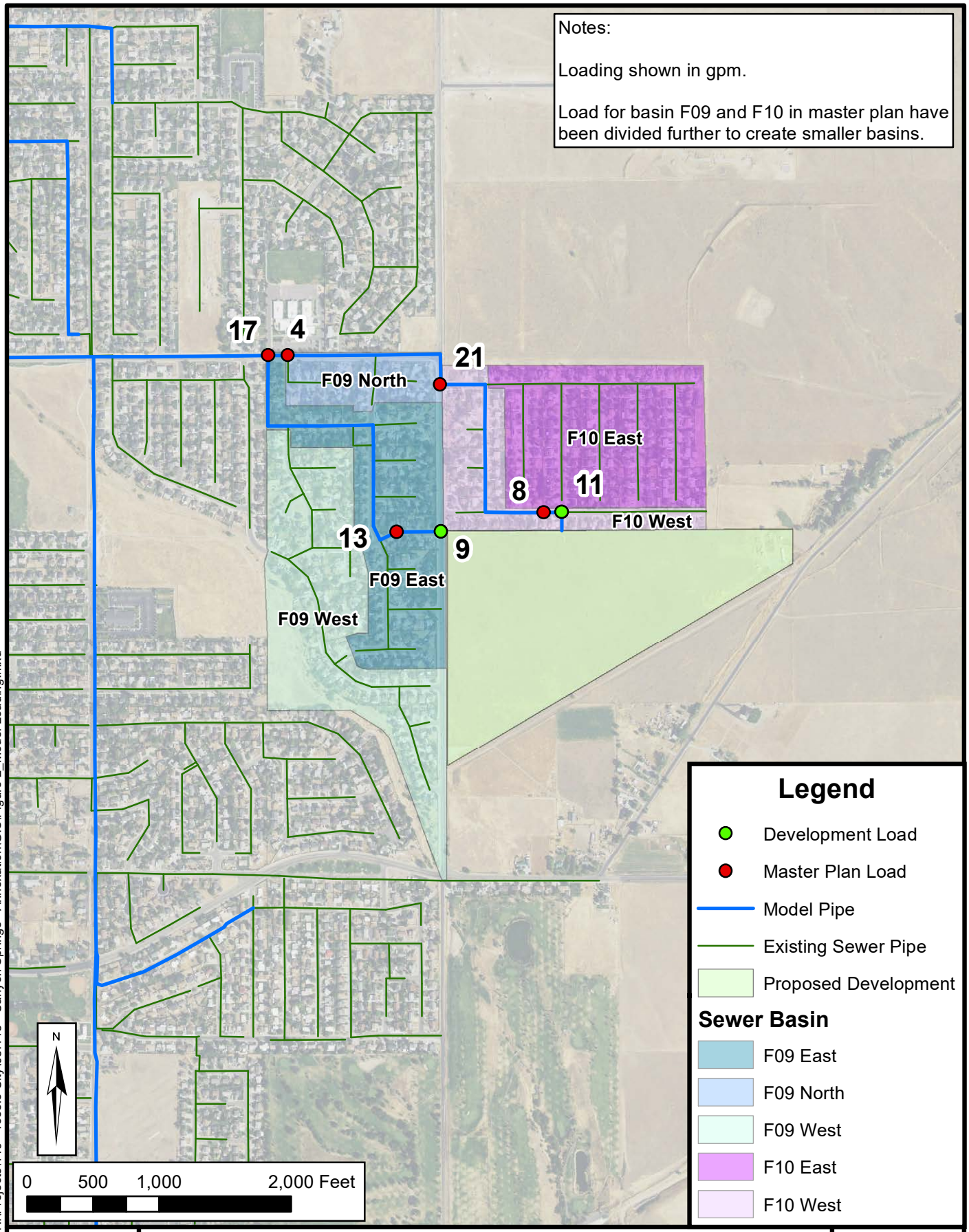
WASTEWATER COLLECTION SYSTEM MODELING

The capacity of the wastewater collection system was analyzed in comparison with the anticipated flows to predict whether the system has capacity to accommodate new flows from the Canyon Springs Development. The analysis was performed using the hydraulic computer model that has been prepared for the wastewater collection system master plan that is on-going. The Canyon Springs Development is located in an area of the City where the sewers were not included in the hydraulic model. The model was updated to include the Canyon Springs Development. This included collecting survey data for key manholes, which allowed flowline and rim elevations to be added to the model. Model flows from the master plan were adjusted to account for the new development. The model loading locations and values for Canyon Springs are provided on Figure 2.

Detailed sewer design information has not be provided for sewers within the development. Once the project moves forward, it is expected that the developer's design engineer will design the sewers with adequate capacity. It is expected that 8" diameter pipes will be adequate. This should be confirmed by the design engineer.

Criteria

The criteria used to determine when a sewer has reached capacity is based on recommendations and standards from the American Society of Civil Engineers (ASCE). These standards recommend that a sewer 12-inches in diameter or smaller has reached maximum capacity when the depth of wastewater divided by the pipe diameter (d/D) has exceeded 0.5, or is half full. For pipes with a larger diameter, the maximum capacity is defined as d/D in excess of 0.75, or is three-quarters full.



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HANSEN ALLEN & LUCE inc
ENGINEERS

Tooele City - Canyon Springs Annexation
Hydraulic Model Loading Locations

FIGURE 2

Calibration and Verification

The hydraulic model that was developed during the wastewater collection system master plan was calibrated with flow monitoring records available at the time. That model was updated to reflect the proposed development. No new specific calibration has been provided with this analysis. If further site-specific calibration is desired, additional flow monitoring can be provided upon request. That flow data could then be used to calibrate and verify model results.

IMPACTS TO EXISTING SYSTEM

The master plan identifies an existing deficiency downstream of the proposed development near the intersection of 1000 North and Main Street. This is shown in Figure 3. While the wastewater generated by the proposed development does not cause the deficiency, if improvements are not made to the sewer, the proposed development would further worsen the deficient flow condition. It is recommended that the City proceed with additional detailed study of the deficiency to confirm the results, and that the City proceed with improvements if needed.

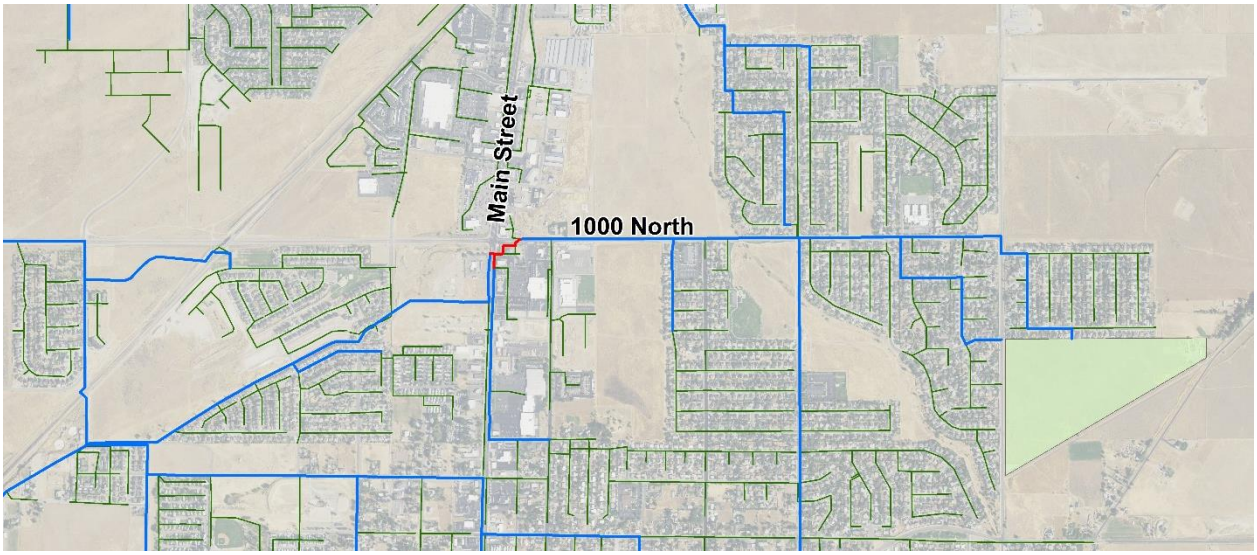

FIGURE 3: EXISTING RECOMMENDED IMPROVEMENTS

The proposed improvement for the deficient area shown in Figure 3 is to replace the existing 15-inch pipe with an 18-inch pipe, or that an equivalent system to constructred.

IMPACTS TO FUTURE SYSTEM

Hydraulic models for a 10-year and 40-year planning scenario from the master plan were also evaluated. This was done to see how the model results change with and without the proposed development. The model predicts that the proposed development does not cause any part of the collection system to become deficient for these scenarios.

CONCLUSIONS AND RECOMMENDATIONS

Besides the existing deficiency described previously, the rest of the existing sewers are adequate to contain the existing wastewater flows and the flows generated by the Canyon Springs Annexation development.

MEMORANDUM

DATE: April 21, 2022

TO: Paul Hansen, P.E.
Tooele City Engineer
90 North Main
Tooele, Utah 84074

FROM: Benjamin D. Miner, M.P.A., P.E.
Kayson Shurtz, P.E.
Hansen, Allen & Luce, Inc. (HAL)
859 West So. Jordan Pkwy – Suite 200
South Jordan, Utah 84095

SUBJECT: Canyon Springs - Drainage Review

PROJECT NO.: 149.08.148

INTRODUCTION

Canyon Springs is an area that has been proposed to be annexed into the City of Tooele. It is located just east of Droubay Road between about 840 North and 600 North. Hansen, Allen, and Luce has been asked to review the area to identify potential drainage issues that need to be addressed before this area can be annexed into the City.

HYDROLOGY

A hydrologic model was developed to determine anticipated flowrates and volumes for the 10-year and 100-year storm events. The design storm selected for this analysis is a three-hour duration storm which incorporates a Farmer-Fletcher 1-hour first quartile storm event as the middle hour of the three-hour design storm (Farmer et al., 1972). This storm distribution is used by many communities in Salt Lake County and would be applicable for Tooele as well. The rainfall depths for the 10-year and 100-year were 1.14 inches and 1.99 inches respectively and were obtained via NOAA Atlas 14 (NOAA, 2011). The runoff modeling was performed using the Soil Conservation Service (SCS) Curve Number (CN) approach as described *in Technical Release 55: Urban Hydrology for Small Watersheds* (NRCS, 1986), hereafter referred to as TR-55. The soil data used in the analysis was obtained from Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) (NRCS, 2022). The land cover for existing conditions was based on the 2016 National Landcover Dataset (NLCD) (Dewitz, 2019). The land cover and soil data were combined within the model to establish various combinations of land

cover and hydrologic soil type. Table 1 presents the assumed curve numbers that were applied to the model for all the potential combinations found in our study area.

TABLE 1. CURVE NUMBER TABLE

TR-55 Description	NLCD Description	NLCD ID #	A	B	C	D
Water	Open Water	11	98	98	98	98
Open Space (Good)	Developed, Open Space	21	39	61	74	80
Residential - 1/2 Acre	Developed, Low Intensity	22	54	70	80	85
Residential - 1/4 Acre	Developed, Medium Intensity	23	61	75	83	87
Residential - 1/8 Acre	Developed, High Intensity	24	77	85	90	92
Fallow-Bare Soil	Barren Land	31	77	86	91	94
Oak Aspen (Poor)	Deciduous Forest	41	66	66	74	79
Woods (Fair)	Evergreen Forest	42	36	60	73	79
Woods Grass Combination (Fair)	Mixed Forest	43	43	65	76	82
Brush (Fair)	Shrub/Scrub	52	35	56	70	77
Pasture Grassland (Fair)	Grassland/Herbaceous	71	49	69	79	84
Meadow	Pasture/Hay	81	30	58	71	78
Row Crops - SR (Good)	Cultivated Crops	82	67	78	85	89
Wetlands	Woody Wetlands	90	98	98	98	98
Wetlands	Emergent Herbaceous Wetlands	95	98	98	98	98

The modeling was performed using a rain on grid approach in HEC-RAS 2D. The drainage patterns above the proposed site are somewhat complex because of several interconnected ditches. The benefit of using the rain on grid approach is the model determines flow paths based on the terrain and hydraulic capacity of the conveyance channels via Manning's equation. The model allows for an estimate of existing flowrates for both onsite and offsite drainage that will need to be accounted for in the design of the proposed annexation area. The assumed roughness values for the NLCD cover types are shown in Table 2 (HEC, 2021).

TABLE 2. ASSUMED ROUGHNESS COEFFICIENTS

NLCD Description	NLCD ID #	Manning's n
Open Water	11	0.035
Developed, Open Space	21	0.035
Developed, Low Intensity	22	0.08
Developed, Medium Intensity	23	0.1
Developed, High Intensity	24	0.15
Barren Land	31	0.05
Deciduous Forest	41	0.1
Evergreen Forest	42	0.15
Mixed Forest	43	0.12
Shrub/Scrub	52	0.08

NLCD Description	NLCD ID #	Manning's n
Grassland/Herbaceous	71	0.06
Pasture/Hay	81	0.05
Cultivated Crops	82	0.05
Woody Wetlands	90	0.12
Emergent Herbaceous Wetlands	95	0.08

The approximate drainage area to calculate offsite flows was developed based on the available UGRC LiDAR data. As noted previously, the model calculates the movement of water through the drainage and therefore an approximate drainage area is sufficient because if additional area is included it will runoff at a different location and therefore not be included in the calculated offsite flows for our area of interest. The approximate drainage area used in the runoff calculations is shown in Figure 1. The grid generally utilizes 25 x 25-foot grid spacing. Breaklines were also utilized to properly align cell faces with high ground such that hydraulic controls are modeled appropriately.

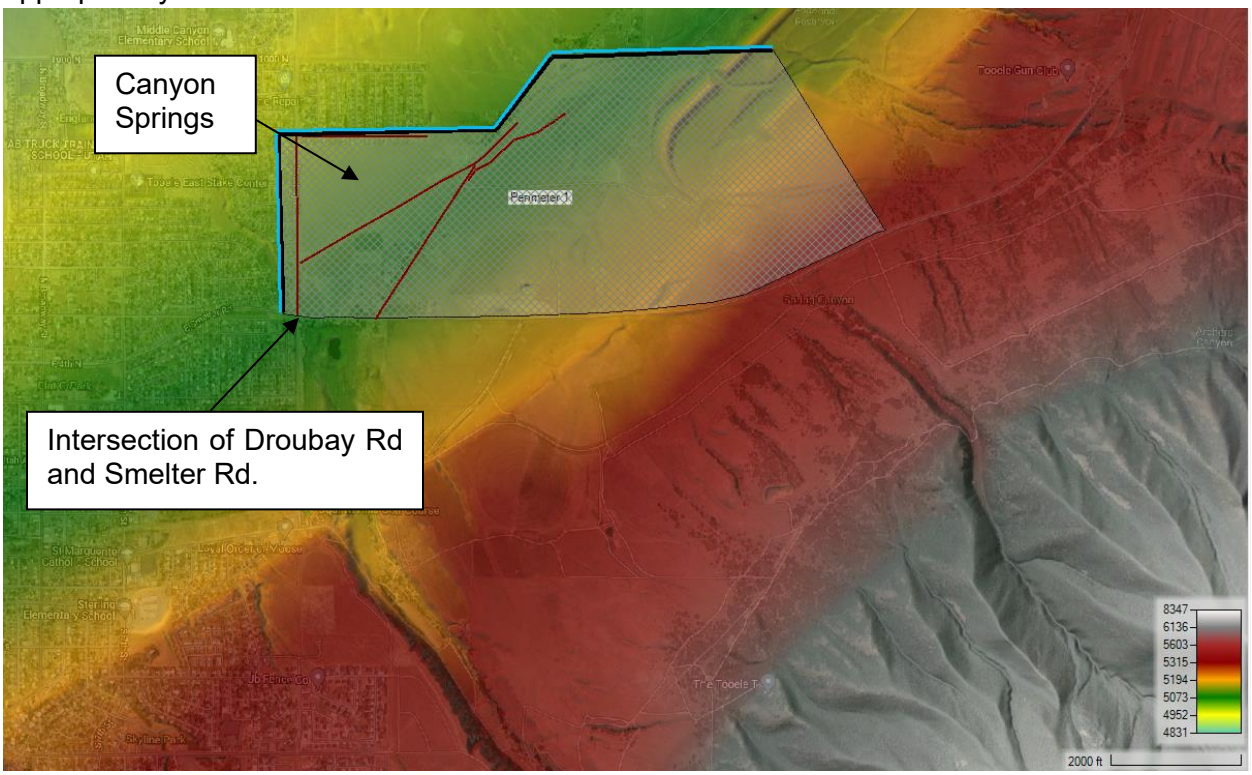

FIGURE 1. HEC-RAS RAIN ON GRID MODEL EXTENTS

EXISTING CONDITIONS MODELING

Existing 10-year flows were negligible and are therefore not reported here. The 100-year existing conditions flows from the proposed site were computed to be approximately 5.9 cfs. The offsite flows that come into the proposed developments for the 100-yr 3-hr event were computed to be approximately 9.5 cfs. Suggesting the drainage area above the proposed development is relatively small. However, these flows must be conveyed through the proposed development. The model shows water ponding on the south side of what looks like a dirt road in the aerial imagery

until it spills over to the proposed development at the general location shown in Figure 2.

The offsite flows must be handled as they come into the development. This could be accomplished by connecting a pipe (with at least 9.5 cfs capacity) from the ponded area shown on Figure 2 into the proposed development drainage system or by creating an open channel conveyance that can convey the 9.5 cfs between lots to the roads of the proposed development at the spill location shown on Figure 2.

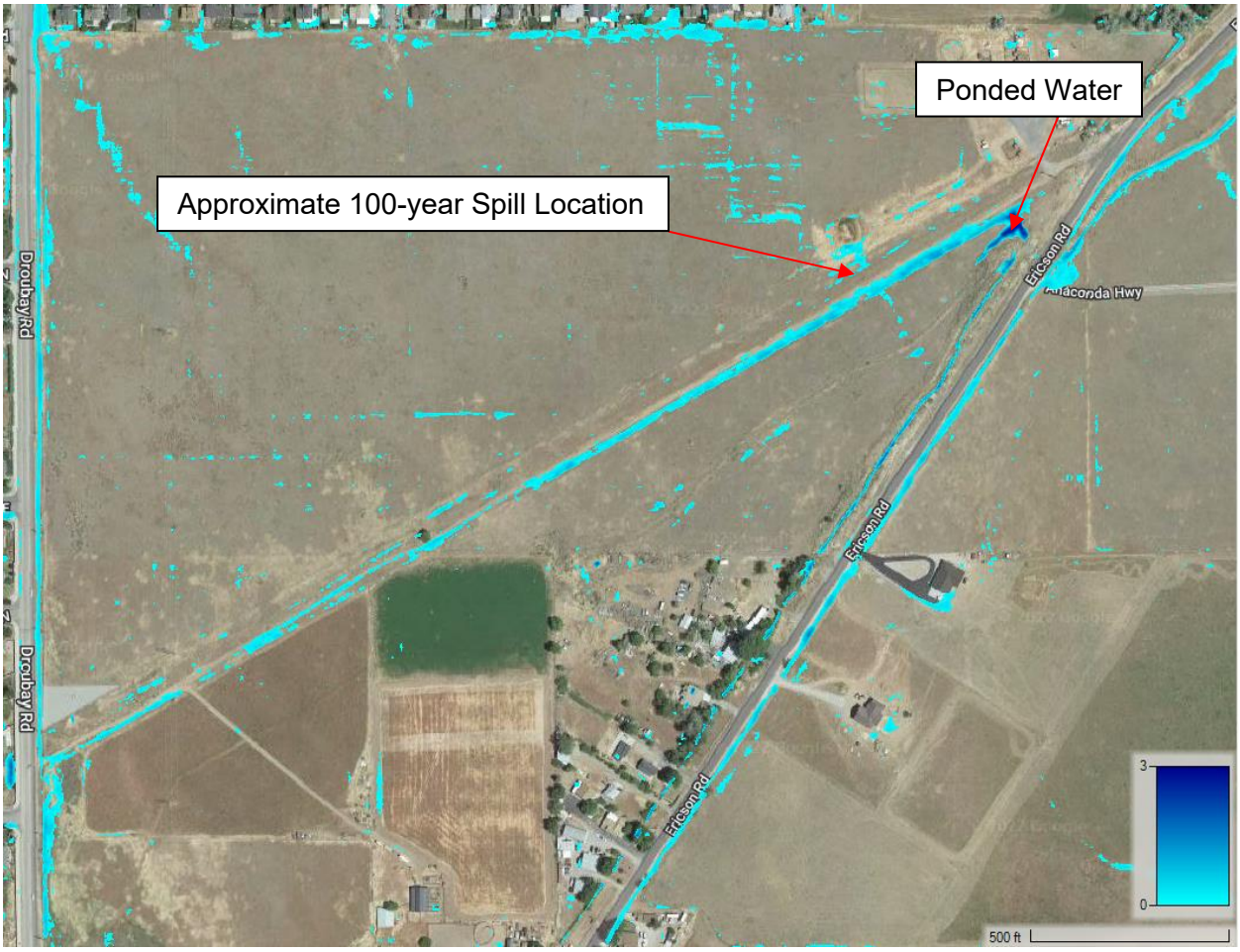

FIGURE 2. 100-YR OFFSITE FLOWS SPILL LOCATION

PROPOSED CONDITIONS MODELING

The site plan provided to HAL shows 172 lots over approximately 60 acres. The development will add additional impervious area in the form of roads, driveways, roofs, sidewalks, and additional hardscape. These impervious areas increase runoff and must be addressed to reduce flood risk to the future residents of the proposed development as well as others who are down gradient from them.

The proposed condition flows for both the 10-year and 100-year scenarios were developed by adjusting the landcover to reflect the roads and homes that are proposed. The site plan provided

was used a guide to estimate additional impervious area. Directly connected impervious area was assumed to have a CN of 98. All roads were assumed to be 100% directly connected while the remaining impervious area was assumed to be 3,000 square feet per lot with 50% of it being directly connected. These assumptions are based on the development looking similar to the existing development directly to the north. The impervious area not associated with roads was composited with the remaining pervious area that was assumed to be Open Space good cover resulting in a composite curve number of 70. Table 3 summarizes the impervious area assumptions.

TABLE 3. IMPERVIOUS AREA ASSUMPTIONS FOR CANYON SPRINGS DEVELOPMENT

Description	Acres	% Directly Connected
Roadway Impervious Area	11.73	100.0
Assumed Additional Impervious Area	11.84	50.0
Open Space Good Condition	37.08	0.0
Totals	60.65	29.1

The modeled peak 10-year flowrate for the entire proposed development was 18.5 cfs. Piping to convey these flows should have sufficient capacity to convey the estimated peak flow rate. The flow per unit acre is approximately 0.31 cfs/acre. This ratio can be used for pipe sizing in areas that only drain a portion of the total drainage area. We recommend a minimum storm drain pipe size of 15-inches.

The modeled peak 100-year flowrate for the entire proposed development was approximately 51.9 cfs. The flow per unit acre is approximately 0.87 cfs/acre. Conveyance and storage must be provided to protect homes from damage during a 100-year event. Conveyance beyond the 10-year event is often provided by the streets along with detention to limit flows downstream. It is recommended that this development provide grading plans for the roads along with calculations that show that the roads and underground conveyance network have sufficient capacity to convey the calculated 100-year flows to an appropriate detention facility. The ratio of peak flow per unit acre can be utilized in the road conveyance calculations based on tributary area. A detention facility will be required for the proposed development to reduce flows back to at least existing conditions (5.9 cfs) so that peak flows downstream are not increased as a result of development. Assuming a release rate of 5.9 cfs (approximately 0.1 cfs/acre) the required detention volume for the proposed development would be approximately 3 ac-ft.

A consideration for this annexation should also include where the detained flows will be discharged. While peak flows would not be increased under the detained scenario, runoff volumes would be spread out over time and reduce pressure on the system. Increased volume in the downstream system could result in increased flood risk due to downstream storage constraints. Discharging the detained flows to a large conveyance like Middle Canyon Creek is the best-case scenario to reduce the downstream flood risk. It appears that the development to the west may have existing storm drain infrastructure that likely discharges into Middle Canyon Creek. This option should be investigated further to determine whether it is feasible to tie into this existing

system to convey detained flows from the proposed annexation area. Otherwise, the City should consider installing new storm water piping from the new development to Middle Canyon Drainage.

SUMMARY

The onsite and offsite flow considerations have been presented in the memo for the proposed annexation property and proposed site plan. The drainage issues all appear to be manageable with most of which being handled utilizing standard engineering practices. Considerations for offsite flows onto the property and where detained releases from the proposed development will discharge must be addressed for annexation. Potential solutions have been presented in the body of this memo.

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HALES ENGINEERING
innovative transportation solutions

Canyon Springs

Traffic Impact Study

Tooele, Utah

November 19, 2021

UT21-2056

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EXECUTIVE SUMMARY

This study addresses the traffic impacts associated with the proposed Canyon Springs development located in Tooele, Utah. The Canyon Springs development is located east of Droubay Road, between 850 North and Smelter Road.

The purpose of this traffic impact study is to analyze traffic operations at key intersections for existing (2021) and future (2026) conditions with and without the proposed project and to recommend mitigation measures as needed. The evening peak hour level of service (LOS) results are shown in Table ES-1.

Table ES-1: Evening Peak Hour Level of Service Results

	Intersection	Level of Service			
		Existing (2021)		Future (2026)	
		BG	PP	BG	PP
1	Droubay Road / 1000 North	a	a	b	b
2	850 North / Droubay Road	a	a	a	a
3	750 North / Droubay Road	a	a	a	a
4	Fox Run Drive / Droubay Road	a	a	a	a
5	Droubay Road / Smelter Road	a	a	a	a

1. Intersection LOS values represent the overall intersection average for roundabout, signalized, and all-way stop-controlled (AWSC) intersections (uppercase letter) and the worst movement for all other unsignalized intersections (lowercase letter)
2. BG = Background (without project traffic), PP = Plus Project (with project traffic)

Source: Hales Engineering, November 2021

SUMMARY OF KEY FINDINGS & RECOMMENDATIONS

Project Conditions

- The development will consist of 172 detached single-family units
- The project is anticipated to generate approximately 1,662 weekday daily trips, including 124 trips in the morning peak hour, and 166 trips in the evening peak hour
- No recommendations are made to improve multimodal connectivity. Multi-use paths are planned along the edges of the development and sidewalks are planned on all streets within the development.

2021	Background	Plus Project
Assumptions	• Droubay Road wide enough for vehicles to leave the travel lane for left and right turns	• None
Findings	• Acceptable LOS	• Acceptable LOS
2026	**Background**	**Plus Project**
Assumptions	• **Droubay Road:** o Widened to three-lane cross section	• None
Findings	• Acceptable LOS	• Acceptable LOS

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I. INTRODUCTION

A. Purpose

This study addresses the traffic impacts associated with the proposed Canyon Springs development located in Tooele, Utah. The proposed project is located east of Droubay Road, between 850 North and Smelter Road. 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 (2021) and future (2026) conditions with and without the proposed project and to recommend mitigation measures as needed.

Figure 1: Vicinity map showing the project location in Tooele, 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:

- Droubay Road / 1000 North
- 850 North / Droubay Road
- 750 North / Droubay Road
- Fox Run Drive / Droubay Road
- Droubay Road / Smelter 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), 6th Edition, 2016 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 B. Hales Engineering also calculated the 95th percentile queue lengths for the study intersections using SimTraffic. The detailed queue length reports are provided in Appendix D.

D. Level of Service Standards

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

Table 1: Level of Service Description

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

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

II. EXISTING (2021) 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:

Droubay Road – is a city-maintained roadway which is classified by the Tooele City Transportation Master Plan (February 2021) as a "minor collector." The roadway has one travel lane in each direction. The posted speed limit is 35 mph in the study area.

850 North – is a city-maintained roadway which is classified by the Tooele City Transportation Master Plan (February 2021) as a "local street." The roadway has one travel lane in each direction. The posted speed limit is 25 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:

- Droubay Road / 1000 North
- 850 North / Droubay Road
- 750 North / Droubay Road
- Fox Run Drive / Droubay Road
- Droubay Road / Smelter Road

The counts were performed on Tuesday, November 9, 2021. 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 4:00 and 5:00 p.m. The evening peak hour volumes were approximately 22% 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.

Hales Engineering considered seasonal adjustments to the observed traffic volumes. However, no monthly traffic volume data were available from any UDOT automatic traffic recorders (ATR). The observed traffic volumes were therefore left unadjusted to remain conservative in this analysis.

The traffic counts were collected during the COVID-19 pandemic when traffic volumes may have been slightly reduced due to social distancing measures. According to the UDOT Automatic Traffic Signal Performance Measures (ATSPM) website for nearby signals in downtown Tooele, the traffic volumes on November 5, 2019 (pre-social distancing) were lower than those on November 9, 2021. Therefore, no adjustment was made to the collected data.

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

D. Level of Service Analysis

Hales Engineering determined that all study intersections are currently operating at acceptable levels of service during the evening peak hour, as shown in Table 2. These results serve as a baseline condition for the impact analysis of the proposed development during existing (2021) conditions.

Table 2: Existing (2021) Background Evening Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Droubay Road / 1000 North	EB Stop	EBL	8.1	a
850 North / Droubay Road	WB Stop	WBL	6.4	a
750 North / Droubay Road	EB Stop	EBL	7.2	a
Fox Run Drive / Droubay Road	EB Stop	NBL	4.6	a
Droubay Road / Smelter Road	NB/SB Stop	SBT	8.2	a

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.

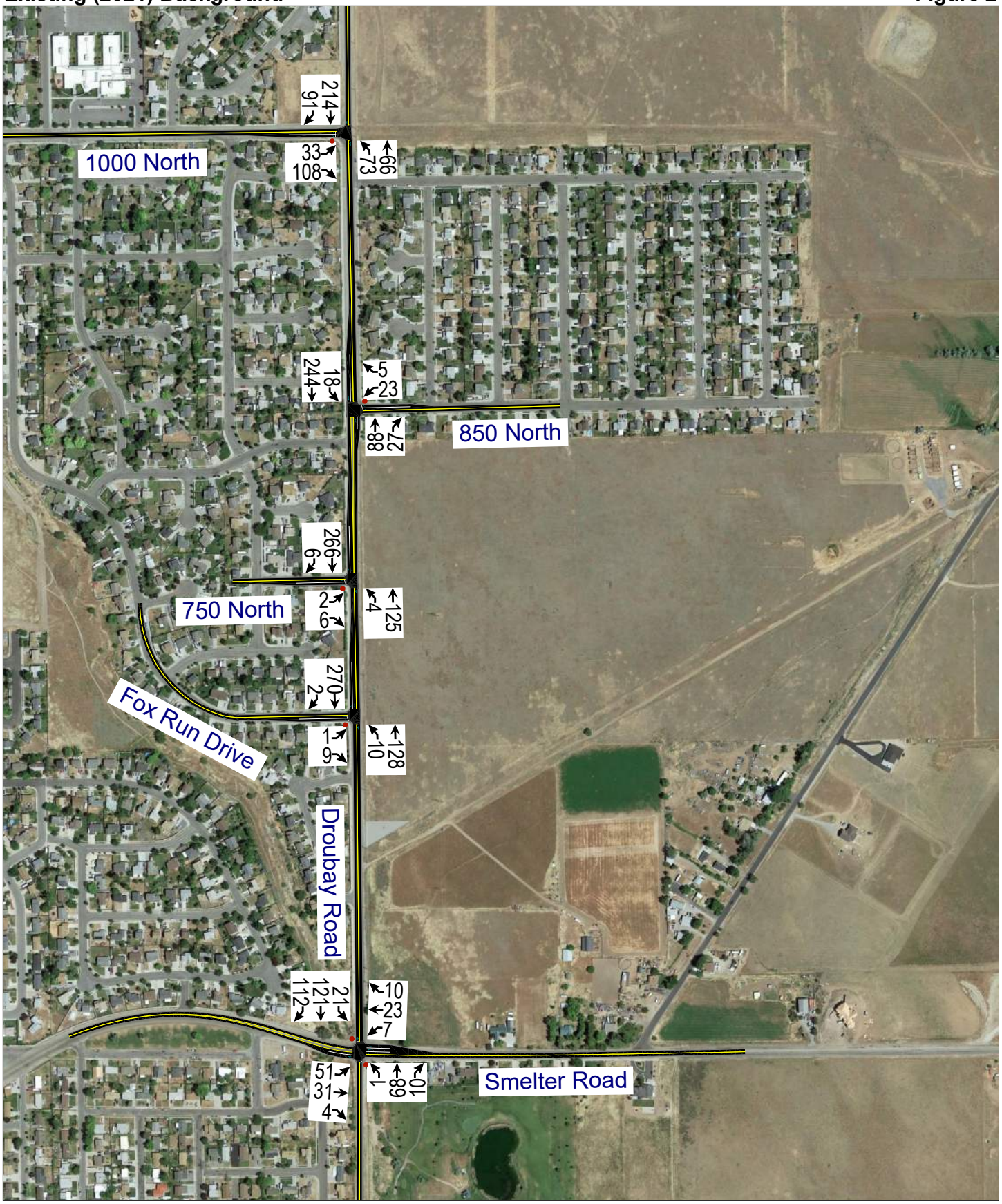
Source: Hales Engineering, November 2021

E. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing was observed during the evening peak hour.

F. Mitigation Measures

No mitigation measures are recommended.


1000 North
850 North
750 North
Fox Run Drive
Droubay Road
Smelter Road
214
91
33
108
66
73
18
244
5
23
27
88
266
6
2
6
125
4
270
2
1
9
128
10
21
121
112
10
23
7
51
31
4
1
89
10

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 Canyon Springs development is located east of Droubay Road, between 850 North and Smelter Road. The development will consist of detached residential single-family units. A concept plan for the proposed development is provided in Appendix C. Sidewalks and multi-use pathways will be provided within and along the edge of the development that connect to all adjacent roadways. No recommendations are made to improve multimodal connectivity.

C. Trip Generation

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

The total trip generation for the development is as follows:

- Daily Trips: 1,662
- Morning Peak Hour Trips: 124
- Evening Peak Hour Trips: 166

Table 3: Trip Generation

Trip Generation Tooele - Canyon Springs								
Land Use[1]	# of Units	Unit Type	Trip Generation			New Trips		
			Total	% In	% Out	In	Out	Total
Weekday Daily								
Single-Family Detached Housing (210)	172	DU	1,662	50%	50%	831	831	1,662
TOTAL			**1,662**			**831**	**831**	**1,662**
AM Peak Hour								
Single-Family Detached Housing (210)	172	DU	124	26%	74%	32	92	124
TOTAL			**124**			**32**	**92**	**124**
PM Peak Hour								
Single-Family Detached Housing (210)	172	DU	166	63%	37%	105	61	166
TOTAL			**166**			**105**	**61**	**166**

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

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 evening peak hour is shown in Table 4.

Table 4: Trip Distribution

Direction	% To/From Project
North	35%
South	20%
West	45%

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 3.

E. Access

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

850 North:

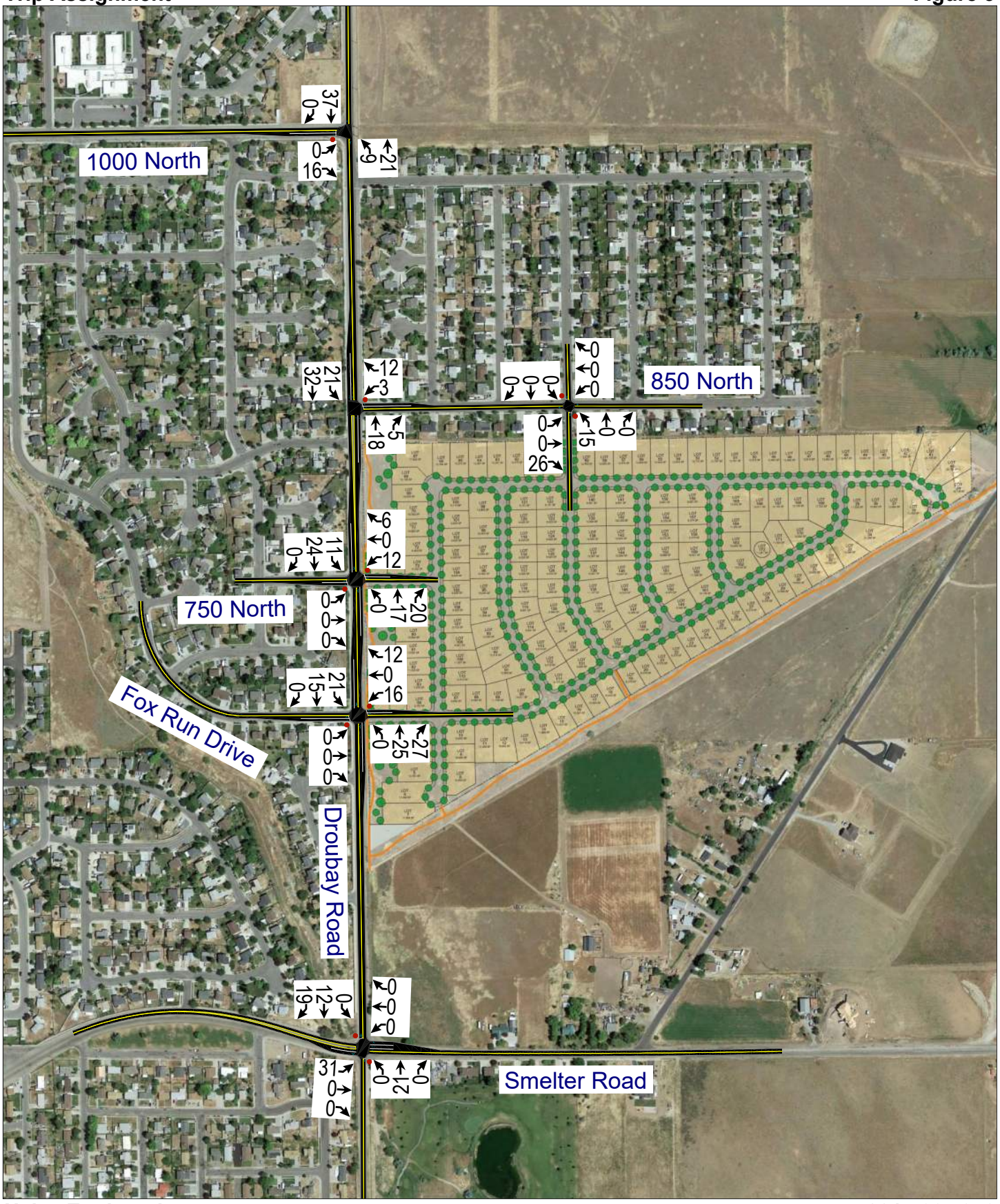
- Access 1 will be via 1340 East. The edge of the development is approximately 125 feet south of the 1340 East / 850 North intersection. It is anticipated that the access will be stop-controlled on the north- and southbound approaches.

Droubay Road:

- Access 2 will be located opposite of the existing 750 North, which is approximately 550 feet south of the Deer Flat Road / Droubay Road intersection and 550 feet north of the Fox Run Drive / Droubay Road intersection. It will access the project on the east side of Droubay Road. It is anticipated that the access will be stop-controlled.
- Access 3 will be located opposite of Fox Run Drive, which is approximately 550 feet south of the 750 North / Droubay Road intersection and approximately 225 feet north of the 650 North / Droubay Road intersection. It will access the project on the east side of Droubay Road. It is anticipated that the access will be stop-controlled.

Tooele Canyon Springs TIS
Trip Assignment

Evening Peak Hour
Figure 3



IV. EXISTING (2021) PLUS PROJECT CONDITIONS

A. Purpose

The purpose of the existing (2021) 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 (2021) background traffic volumes to predict turning movement volumes for existing (2021) plus project conditions. Existing (2021) plus project evening peak hour turning movement volumes are shown in Figure 4.

C. Level of Service Analysis

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

Table 5: Existing (2021) Plus Project Evening Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Droubay Road / 1000 North	EB Stop	EBL	9.7	a
850 North / Droubay Road	WB Stop	WBL	6.3	a
750 North / Droubay Road	EB/WB Stop	EBL	7.2	a
Fox Run Drive / Droubay Road	EB/WB Stop	WBL	6.5	a
Droubay Road / Smelter Road	NB/SB Stop	SBT	8.4	a

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.

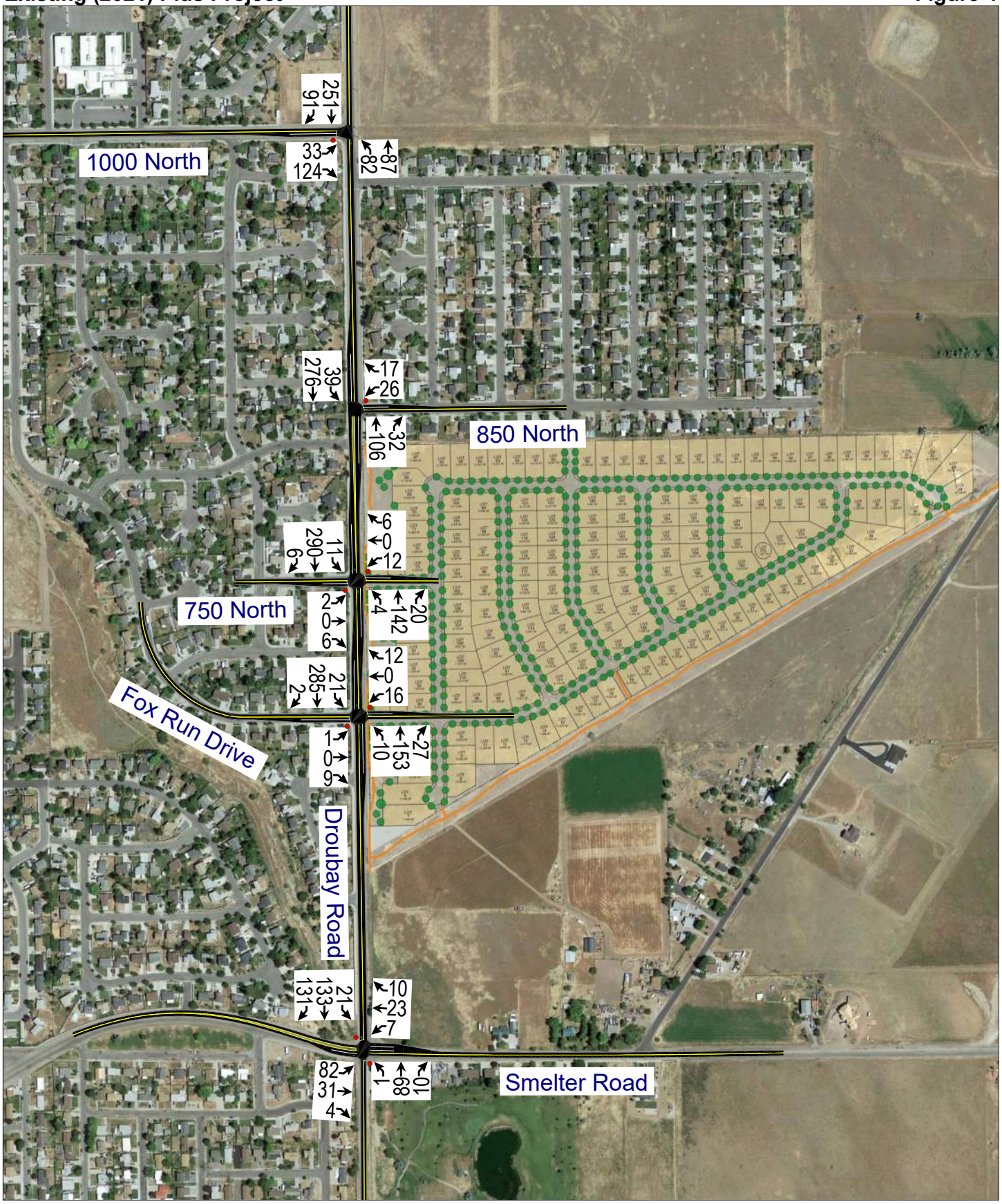
Source: Hales Engineering, November 2021

D. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing is anticipated during the evening peak hour.

E. Mitigation Measures

No mitigation measures are recommended.


1000 North
850 North
750 North
Fox Run Drive
Droubay Road
Smelter Road
251
91
33
124
82
87
39
276
17
26
32
106
11
290
6
6
12
2
6
20
4
142
21
285
2
12
16
1
9
27
10
153
21
133
131
10
23
7
82
31
4
1
68
10

V. FUTURE (2026) BACKGROUND CONDITIONS

A. Purpose

The purpose of the future (2026) 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 Tooele City Transportation Master Plan, there are projects planned before 2040 in the study area. However, the only change that was assumed to be completed for the future (2026) analysis was to widen Droubay Road to a three-lane cross section with on-street parking.

C. Traffic Volumes

Hales Engineering obtained future (2026) forecasted volumes from the Tooele City Transportation Master Plan (2019). Historical growth patterns in Tooele City show that the city has grown at an average rate of 3.7 percent. This trend was forecasted to the 2026 horizon year for all turning movements. Future (2026) evening peak hour turning movement volumes are shown in Figure 5.

D. Level of Service Analysis

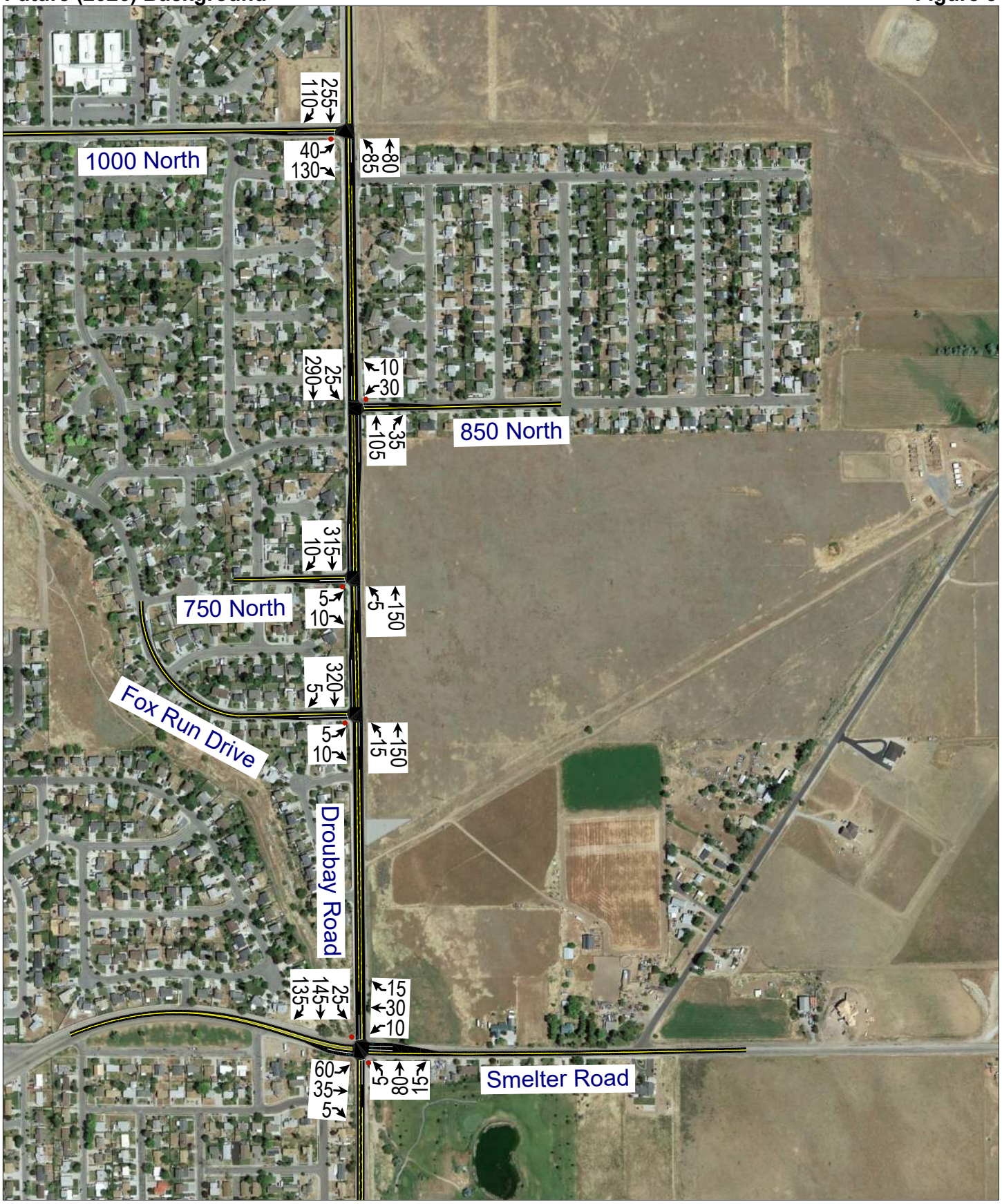
Hales Engineering determined that all study intersections are anticipated to operate at acceptable levels of service during the evening peak hour in future (2026) background conditions, as shown in Table 6. These results serve as a baseline condition for the impact analysis of the proposed development for future (2026) conditions.

E. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing is anticipated during the evening peak hour.

F. Mitigation Measures

No mitigation measures are recommended.


1000 North
850 North
750 North
Fox Run Drive
Droubay Road
Smelter Road
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110
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105
315
10
5
10
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150
320
5
5
10
15
150
25
145
135
15
30
10
60
35
5
5
80
15

Table 6: Future (2026) Background Evening Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Droubay Road / 1000 North	EB Stop	EBL	11.6	b
850 North / Droubay Road	WB Stop	WBL	6.5	a
750 North / Droubay Road	EB Stop	EBL	6.0	a
Fox Run Drive / Droubay Road	EB Stop	EBL	6.6	a
Droubay Road / Smelter Road	NB/SB Stop	SBT	8.6	a

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 2021

VI. FUTURE (2026) PLUS PROJECT CONDITIONS

A. Purpose

The purpose of the future (2026) 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 (2026) background traffic volumes to predict turning movement volumes for future (2026) plus project conditions. Future (2026) plus project evening peak hour turning movement volumes are shown in Figure 6.

C. Level of Service Analysis

Hales Engineering determined that all intersections are anticipated to operate at acceptable levels of service during the evening peak hour in future (2026) plus project conditions, as shown in Table 7.

Table 7: Future (2026) Plus Project Evening Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Droubay Road / 1000 North	EB Stop	EBL	12.8	b
850 North / Droubay Road	WB Stop	WBL	6.8	a
750 North / Droubay Road	EB/WB Stop	WBL	8.2	a
Fox Run Drive / Droubay Road	EB/WB Stop	EBL	7.5	a
Droubay Road / Smelter Road	NB/SB Stop	SBT	9.0	a

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.

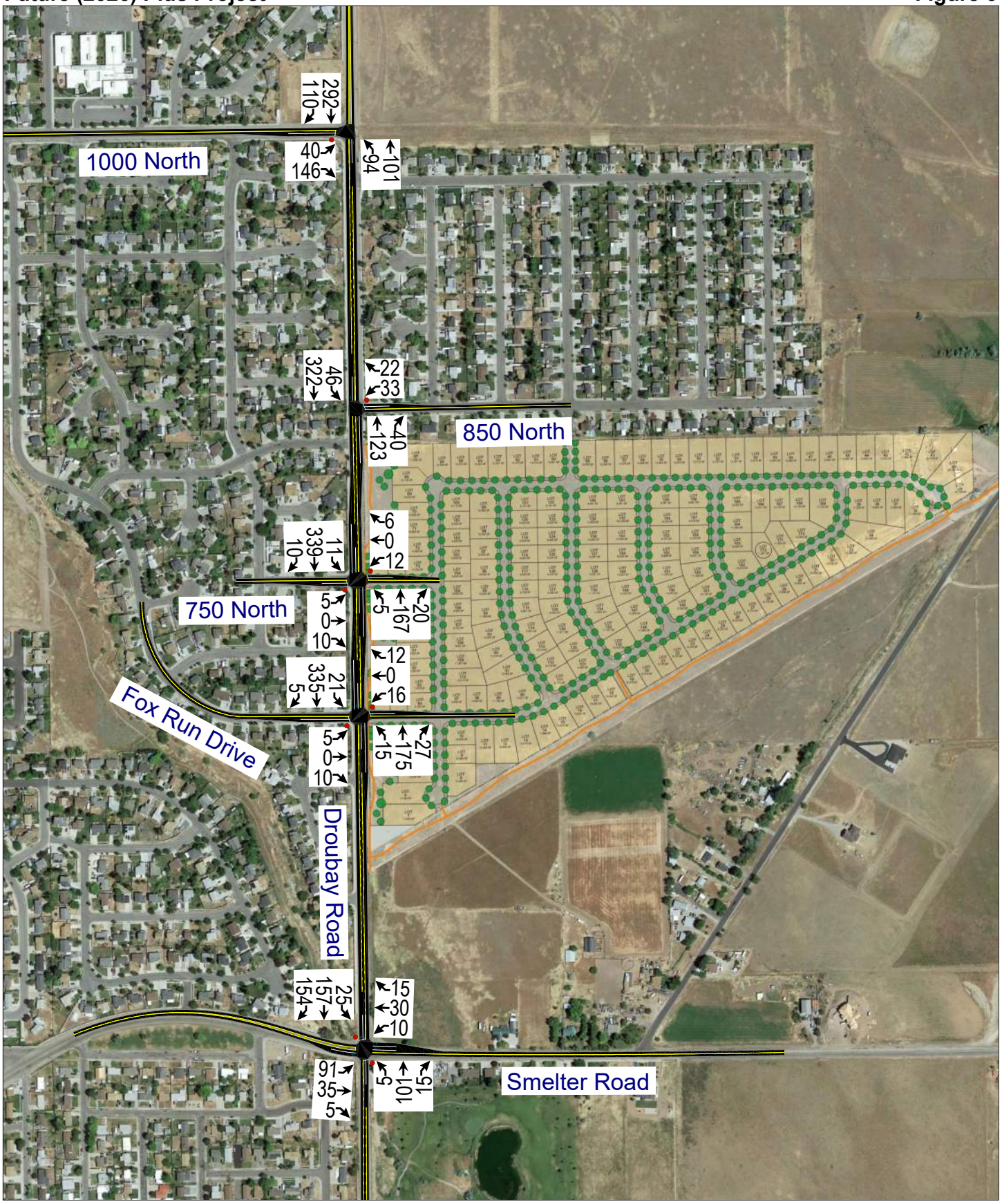
Source: Hales Engineering, November 2021

D. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. No significant queueing is anticipated during the evening peak hour.

E. Mitigation Measures

No mitigation measures are recommended.


1000 North
850 North
750 North
Fox Run Drive
Droubay Road
Smelter Road
292
110
40
146
101
94
46
322
22
33
40
123
6
0
12
11
339
10
5
0
10
20
167
5
12
0
16
21
335
5
5
0
10
27
175
15
25
157
154
15
30
10
91
35
5
15
101
5

APPENDIX A

Turning Movement Counts

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

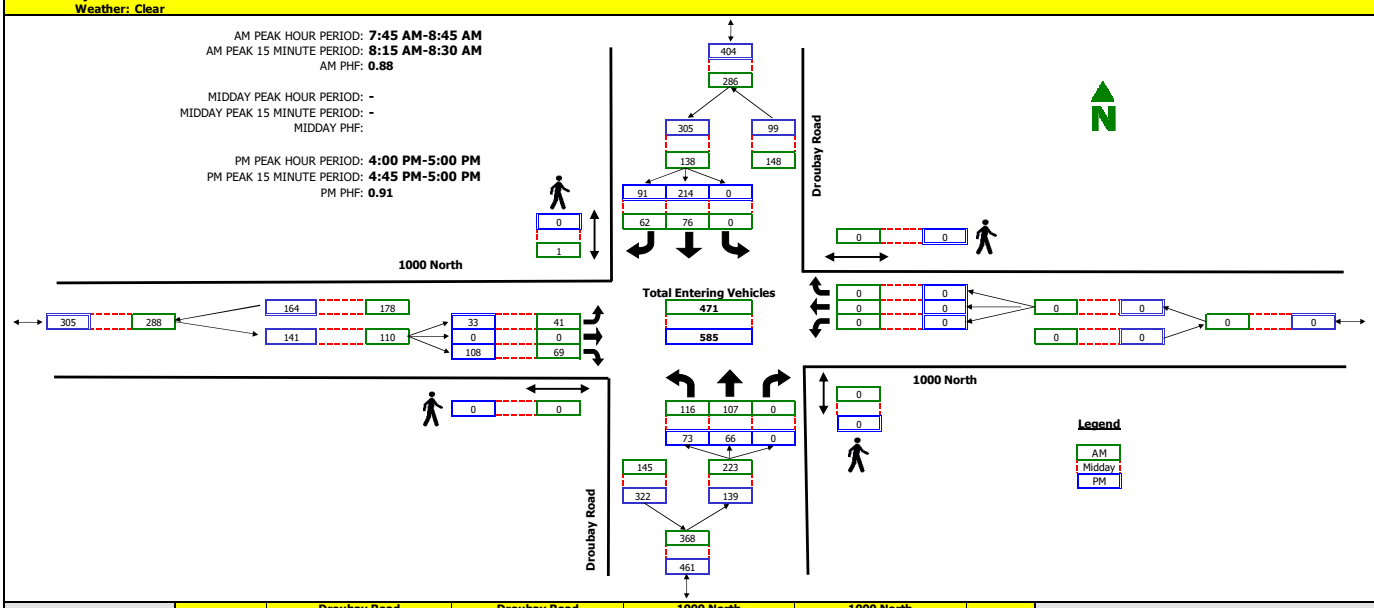
Intersection: Droubay Road / 1000 North
North/South: Droubay Road
East/West: 1000 North
Jurisdiction: Tooele
Project Title: Canyon Springs TIS
Project No: UT21-2056
Weather: Clear

Date: 11-9-21, Tue
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: **7:45 AM-8:45 AM**
AM PEAK 15 MINUTE PERIOD: **8:15 AM-8:30 AM**
AM PHF: **0.88**

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

PM PEAK HOUR PERIOD: **4:00 PM-5:00 PM**
PM PEAK 15 MINUTE PERIOD: **4:45 PM-5:00 PM**
PM PHF: **0.91**



RAW COUNT SUMMARIES	Droubay Road Northbound				Droubay Road Southbound				1000 North Eastbound				1000 North Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	

AM PEAK PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00 - 7:15	15	26	0	0	0	9	11	1	6	0	7	0	0	0	0	0	74
7:15 - 7:30	16	29	0	0	0	5	11	0	5	0	5	0	0	0	0	0	71
7:30 - 7:45	23	28	0	0	0	13	16	0	12	0	6	0	0	0	0	0	98
7:45 - 8:00	21	26	0	0	0	21	10	0	9	0	13	0	0	0	0	0	100
8:00 - 8:15	26	24	0	0	0	33	19	0	9	0	13	0	0	0	0	0	124
8:15 - 8:30	42	28	0	0	0	15	16	1	7	0	26	0	0	0	0	0	134
8:30 - 8:45	27	29	0	0	0	7	17	0	16	0	17	0	0	0	0	0	113
8:45 - 9:00	16	15	0	0	0	11	16	0	1	2	7	0	0	0	0	0	68

MIDDAY PERIOD COUNTS

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

PM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00 - 16:15	27	18	0	0	0	47	11	0	8	0	26	0	0	0	0	0	137
16:15 - 16:30	13	16	0	0	0	55	31	0	10	0	32	0	0	0	0	0	157
16:30 - 16:45	15	11	0	0	0	45	24	0	6	0	29	0	0	0	0	0	130
16:45 - 17:00	18	21	0	0	0	67	25	0	9	0	21	0	0	0	0	0	161
17:00 - 17:15	17	14	0	0	0	48	21	0	7	0	28	0	0	0	0	0	135
17:15 - 17:30	21	18	0	0	0	42	17	0	10	0	18	0	0	0	0	0	126
17:30 - 17:45	18	13	0	0	0	53	17	0	11	0	16	0	0	0	0	0	128
17:45 - 18:00	15	10	0	0	0	24	8	0	4	5	25	0	0	0	0	0	91

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

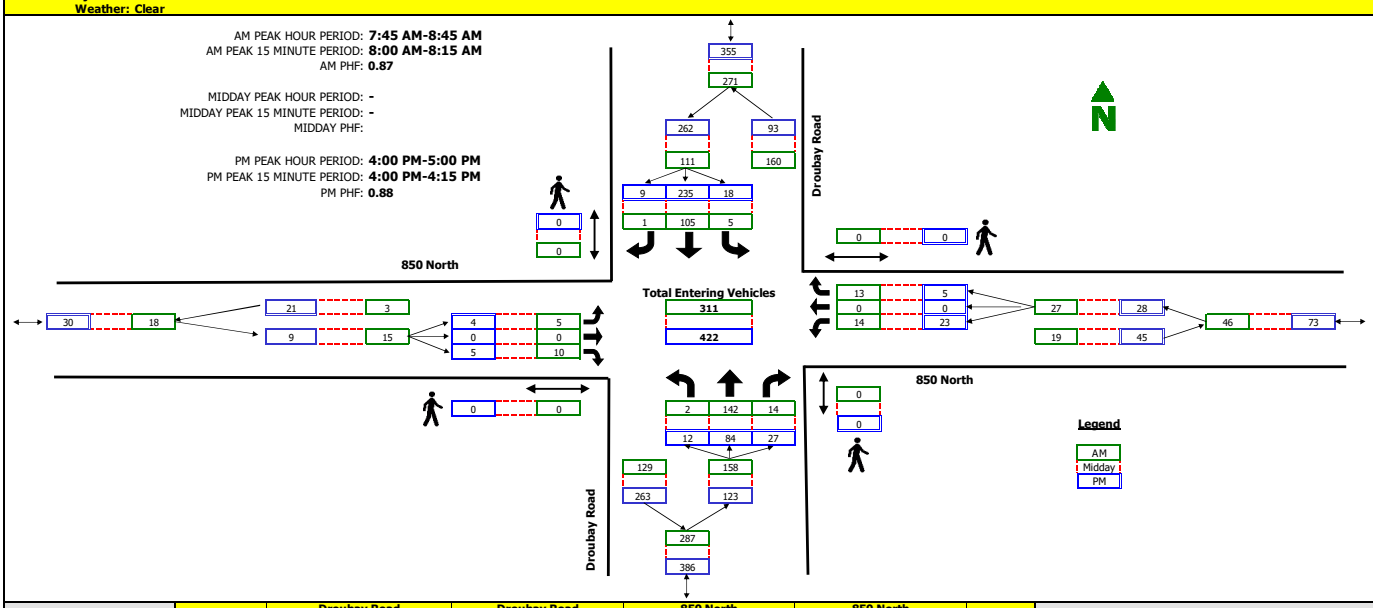
Intersection: Droubay Road / 850 North
North/South: Droubay Road
East/West: 850 North
Jurisdiction: Tooele
Project Title: Canyon Springs TIS
Project No: UT21-2056
Weather: Clear

Date: 11-9-21, Tue
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: **7:45 AM-8:45 AM**
AM PEAK 15 MINUTE PERIOD: **8:00 AM-8:15 AM**
AM PHF: **0.87**

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

PM PEAK HOUR PERIOD: **4:00 PM-5:00 PM**
PM PEAK 15 MINUTE PERIOD: **4:00 PM-4:15 PM**
PM PHF: **0.88**



RAW COUNT SUMMARIES	Droubay Road Northbound				Droubay Road Southbound				850 North Eastbound				850 North Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	

AM PEAK PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00 - 7:15	0	29	1	0	0	10	0	0	0	0	0	1	4	0	2	0	46
7:15 - 7:30	2	24	4	0	1	6	0	0	0	0	6	0	7	0	1	0	51
7:30 - 7:45	1	33	4	0	0	10	0	0	1	0	5	0	6	0	2	0	62
7:45 - 8:00	0	35	3	0	1	20	0	0	1	0	2	0	5	0	1	0	68
8:00 - 8:15	1	41	5	0	0	33	1	0	0	0	2	0	5	0	1	0	89
8:15 - 8:30	1	32	3	0	1	29	0	0	1	0	2	0	3	0	5	0	77
8:30 - 8:45	0	34	3	0	3	23	0	0	3	0	4	0	1	0	6	0	77
8:45 - 9:00	0	29	1	0	2	15	0	0	0	0	3	0	1	0	3	0	54

MIDDAY PERIOD COUNTS

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

PM PEAK PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00 - 16:15	4	22	5	0	4	74	4	0	1	0	0	0	5	0	1	0	120
16:15 - 16:30	3	24	6	0	5	50	2	0	0	0	2	0	6	0	2	0	100
16:30 - 16:45	4	21	8	0	5	57	2	0	0	0	1	0	9	0	1	0	108
16:45 - 17:00	1	17	8	0	4	54	1	0	3	0	2	0	3	0	1	0	94
17:00 - 17:15	2	28	8	0	2	63	5	0	0	0	3	0	1	0	1	0	113
17:15 - 17:30	1	22	8	0	2	46	0	0	0	0	0	0	4	0	3	0	86
17:30 - 17:45	2	29	5	0	1	44	2	0	2	0	3	0	4	0	2	0	94
17:45 - 18:00	2	24	5	0	1	51	2	0	0	0	2	0	8	0	4	0	99

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

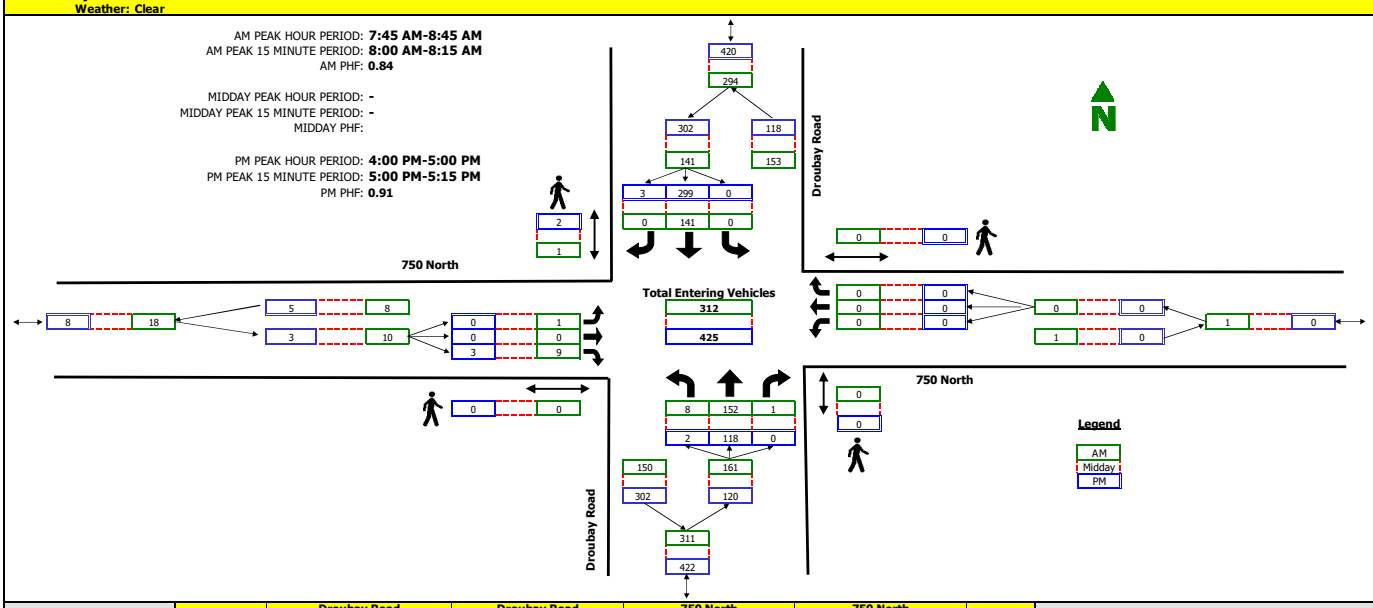
Intersection: Droubay Road / 750 North
North/South: Droubay Road
East/West: 750 North
Jurisdiction: Tooele
Project Title: Canyon Springs TIS
Project No: UT21-2056
Weather: Clear

Date: 11-9-21, Tue
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: **7:45 AM-8:45 AM**
AM PEAK 15 MINUTE PERIOD: **8:00 AM-8:15 AM**
AM PHF: **0.84**

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

PM PEAK HOUR PERIOD: **4:00 PM-5:00 PM**
PM PEAK 15 MINUTE PERIOD: **5:00 PM-5:15 PM**
PM PHF: **0.91**



RAW COUNT SUMMARIES	Droubay Road Northbound				Droubay Road Southbound				750 North Eastbound				750 North Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	

AM PEAK PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00 - 7:15	0	31	0	0	0	16	0	0	0	0	2	0	0	0	0	1	49
7:15 - 7:30	0	28	0	0	0	18	0	0	1	0	0	0	0	0	0	0	47
7:30 - 7:45	0	40	0	0	0	24	0	0	0	0	1	0	0	0	0	0	65
7:45 - 8:00	1	33	0	0	0	27	0	0	1	0	2	0	0	0	0	0	64
8:00 - 8:15	3	46	0	0	0	42	0	0	0	0	2	0	0	0	0	0	93
8:15 - 8:30	3	36	1	0	0	38	0	0	0	0	5	0	0	0	0	0	83
8:30 - 8:45	1	37	0	0	0	34	0	1	0	0	0	0	0	0	0	0	72
8:45 - 9:00	0	31	0	0	0	21	0	0	0	0	1	0	0	0	0	0	53

MIDDAY PERIOD COUNTS

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

PM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00 - 16:15	0	22	0	0	0	88	0	1	0	0	0	0	0	0	0	0	110
16:15 - 16:30	1	41	0	0	0	66	0	0	0	0	1	0	0	0	0	0	109
16:30 - 16:45	1	25	0	0	0	71	1	1	0	0	1	0	0	0	0	0	99
16:45 - 17:00	0	30	0	0	0	74	2	0	0	0	1	0	0	0	0	0	107
17:00 - 17:15	2	42	0	0	0	65	3	0	2	0	3	0	0	0	0	0	117
17:15 - 17:30	1	28	0	0	0	62	0	1	0	0	1	0	0	0	0	0	92
17:30 - 17:45	0	33	0	0	0	49	1	0	0	0	0	0	0	0	0	0	83
17:45 - 18:00	0	30	0	0	0	52	4	0	0	0	0	0	0	0	0	0	86

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

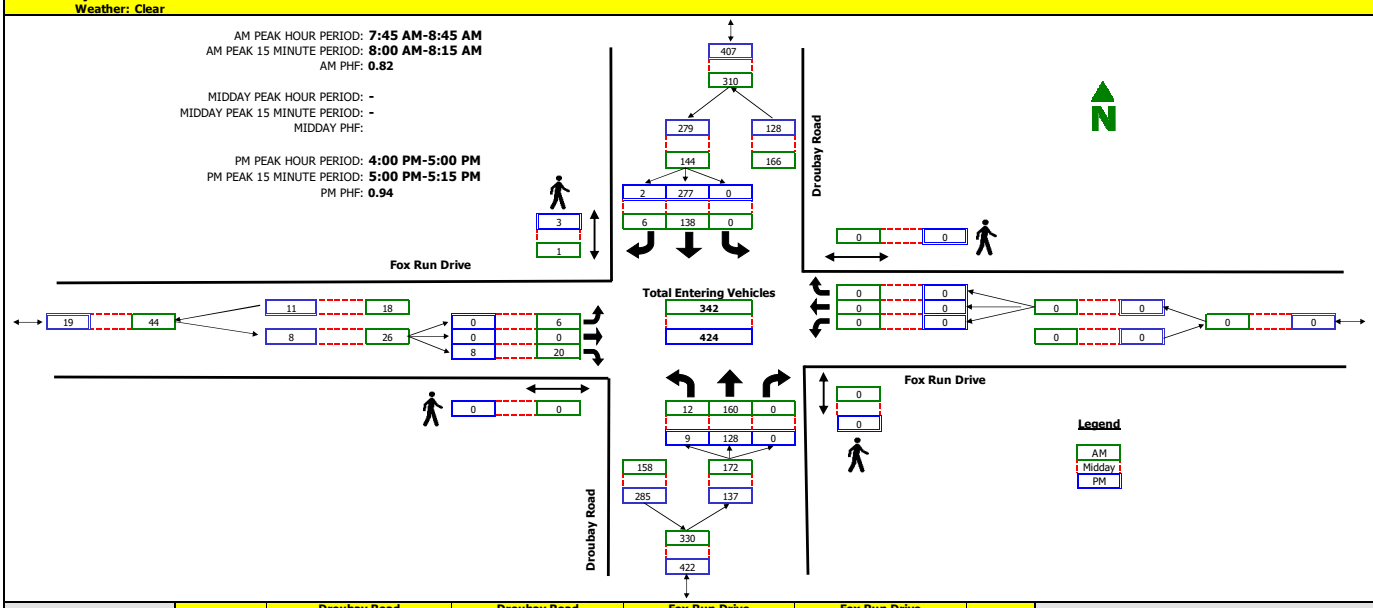
Intersection: Droubay Road / Fox Run Drive
North/South: Droubay Road
East/West: Fox Run Drive
Jurisdiction: Tooele
Project Title: Canyon Springs TIS
Project No: UT21-2056
Weather: Clear

Date: 11-9-21, Tue
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: **7:45 AM-8:45 AM**
AM PEAK 15 MINUTE PERIOD: **8:00 AM-8:15 AM**
AM PHF: **0.82**

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

PM PEAK HOUR PERIOD: **4:00 PM-5:00 PM**
PM PEAK 15 MINUTE PERIOD: **5:00 PM-5:15 PM**
PM PHF: **0.94**



RAW COUNT SUMMARIES	Droubay Road Northbound				Droubay Road Southbound				Fox Run Drive Eastbound				Fox Run Drive Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	

AM PEAK PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00 - 7:15	1	33	0	0	0	16	0	1	0	0	2	0	0	0	0	0	52
7:15 - 7:30	0	31	0	0	0	18	0	0	0	0	6	0	0	0	0	0	55
7:30 - 7:45	2	39	0	0	0	20	0	1	0	0	6	0	0	0	0	0	67
7:45 - 8:00	1	33	0	0	0	26	1	0	1	0	5	0	0	0	0	0	67
8:00 - 8:15	6	47	0	0	0	42	2	0	1	0	6	0	0	0	0	0	104
8:15 - 8:30	2	40	0	0	0	38	0	0	3	0	5	0	0	0	0	0	88
8:30 - 8:45	3	40	0	0	0	32	3	1	1	0	4	0	0	0	0	0	83
8:45 - 9:00	2	31	0	0	0	17	0	0	0	0	5	0	0	0	0	0	55

MIDDAY PERIOD COUNTS

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

PM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00 - 16:15	3	24	0	0	0	76	1	1	0	0	2	0	0	0	0	0	106
16:15 - 16:30	2	43	0	0	0	64	1	0	0	0	2	0	0	0	0	0	112
16:30 - 16:45	4	30	0	0	0	62	0	2	0	0	3	0	0	0	0	0	99
16:45 - 17:00	0	31	0	0	0	75	0	0	0	0	1	0	0	0	0	0	107
17:00 - 17:15	4	43	0	0	0	62	0	0	1	0	3	0	0	0	0	0	113
17:15 - 17:30	6	32	0	0	0	56	1	0	2	0	2	0	0	0	0	0	99
17:30 - 17:45	1	30	0	0	0	44	1	0	0	0	4	0	0	0	0	0	80
17:45 - 18:00	1	27	0	0	0	57	0	0	0	0	1	0	0	0	0	0	86

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

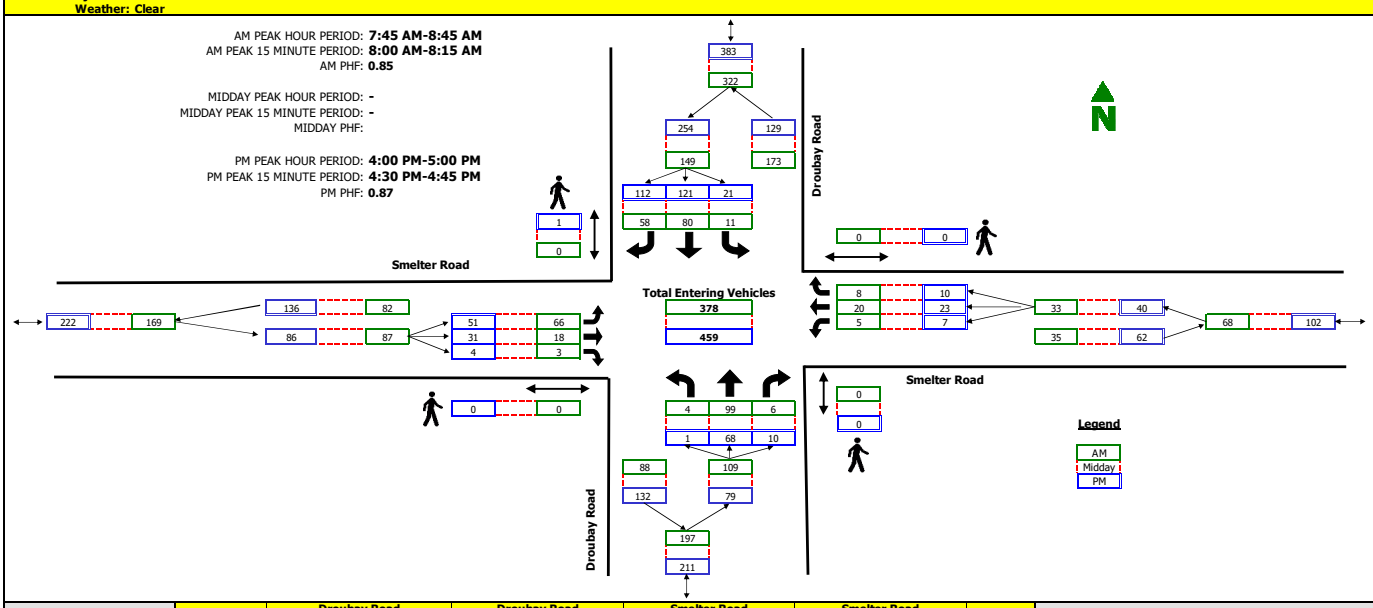
Intersection: Droubay Road / Smelter Road
North/South: Droubay Road
East/West: Smelter Road
Jurisdiction: Tooele
Project Title: Canyon Springs TIS
Project No: UT21-2056
Weather: Clear

Date: 11-9-21, Tue
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: **7:45 AM-8:45 AM**
AM PEAK 15 MINUTE PERIOD: **8:00 AM-8:15 AM**
AM PHF: **0.85**

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

PM PEAK HOUR PERIOD: **4:00 PM-5:00 PM**
PM PEAK 15 MINUTE PERIOD: **4:30 PM-4:45 PM**
PM PHF: **0.87**



RAW COUNT SUMMARIES	Droubay Road Northbound				Droubay Road Southbound				Smelter Road Eastbound				Smelter Road Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	

AM PEAK PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
7:00 - 7:15	0	15	1	0	1	10	9	0	19	1	0	1	1	1	0	0	58
7:15 - 7:30	0	17	0	0	0	14	16	0	10	2	0	0	0	2	1	0	62
7:30 - 7:45	1	27	0	0	0	13	16	0	11	4	1	0	4	4	4	0	85
7:45 - 8:00	0	24	1	0	1	17	12	0	11	3	0	0	2	2	0	0	73
8:00 - 8:15	2	31	2	0	5	28	16	0	19	2	0	0	0	2	4	0	111
8:15 - 8:30	2	26	0	0	3	18	18	0	15	4	1	0	1	7	1	0	96
8:30 - 8:45	0	18	3	0	2	17	12	0	21	9	2	0	2	9	3	0	98
8:45 - 9:00	2	12	2	1	3	10	14	0	14	7	2	1	2	8	6	0	82

MIDDAY PERIOD COUNTS

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

PM PERIOD COUNTS

Period	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	TOTAL
16:00 - 16:15	0	16	3	0	4	32	42	0	10	8	1	0	1	5	3	0	125
16:15 - 16:30	0	23	1	0	5	32	22	0	19	7	2	0	2	7	4	0	124
16:30 - 16:45	1	16	4	0	6	37	30	0	15	10	1	0	4	7	1	0	132
16:45 - 17:00	0	13	2	0	6	20	18	1	7	6	0	0	0	4	2	0	78
17:00 - 17:15	1	5	1	0	1	9	5	0	9	2	0	0	0	0	1	0	34
17:15 - 17:30	2	17	1	0	5	19	25	0	15	12	1	0	2	15	1	0	115
17:30 - 17:45	0	20	1	0	5	14	25	0	17	8	1	0	1	11	3	0	106
17:45 - 18:00	2	13	4	0	0	36	20	0	13	11	0	0	2	10	1	0	112

APPENDIX B

LOS Results

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Existing (2021) Background*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & 1000 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	73	68	93	4.8	*A*
	T	66	66	100	2.0	*A*
	Subtotal	139	134	96	3.4	*A*
SB	T	214	213	100	1.8	*A*
	R	91	93	102	0.7	*A*
	Subtotal	305	306	100	1.5	*A*
EB	***L***	***33***	***33***	***99***	***8.1***	***A***
	R	108	111	103	4.0	*A*
	Subtotal	141	144	102	4.9	*A*
Total		586	584	100	2.8	*A*

Intersection: Droubay Road & 850 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	100	97	97	0.3	*A*
	R	27	28	104	0.3	*A*
	Subtotal	127	125	98	0.3	*A*
SB	L	18	16	90	2.7	*A*
	T	304	308	101	0.8	*A*
	Subtotal	322	324	101	0.9	*A*
WB	***L***	***23***	***22***	***96***	***6.4***	***A***
	R	5	7	133	2.6	*A*
	Subtotal	28	29	104	5.5	*A*
Total		477	478	100	1.0	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Existing (2021) Background*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & 750 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	4	3	75	2.0	*A*
	T	125	124	99	0.2	*A*
	Subtotal	129	127	98	0.2	*A*
SB	T	266	269	101	0.4	*A*
	R	6	8	128	0.2	*A*
	Subtotal	272	277	102	0.4	*A*
EB	***L***	***2***	***1***	***50***	***7.2***	***A***
	R	6	6	96	3.2	*A*
	Subtotal	8	7	88	3.8	*A*
Total		409	411	100	0.4	*A*

Intersection: Droubay Road & Fox Run Drive
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	***L***	***10***	***9***	***88***	***4.6***	***A***
	T	128	126	99	1.9	*A*
	Subtotal	138	135	98	2.1	*A*
SB	T	270	273	101	0.4	*A*
	R	2	2	100	0.3	*A*
	Subtotal	272	275	101	0.4	*A*
EB	L	1	1	100	4.3	*A*
	R	9	8	86	2.9	*A*
	Subtotal	10	9	90	3.1	*A*
Total		420	419	100	1.0	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Existing (2021) Background*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & Smelter Road
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	1	1	100	4.2	*A*
	T	68	66	97	7.6	*A*
	R	10	13	127	2.8	*A*
	Subtotal	79	80	101	6.8	*A*
SB	L	21	21	101	7.1	*A*
	T	***146***	***148***	***101***	***8.2***	***A***
	R	112	112	100	4.5	*A*
	Subtotal	279	281	101	6.6	*A*
EB	L	51	50	98	1.9	*A*
	T	31	31	100	0.3	*A*
	R	4	6	150	0.2	*A*
	Subtotal	86	87	101	1.2	*A*
WB	L	7	8	110	1.9	*A*
	T	23	21	91	0.2	*A*
	R	10	11	107	0.2	*A*
	Subtotal	40	40	100	0.5	*A*
Total		485	488	101	5.2	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Existing (2021) Plus Project*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & 1000 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	82	84	102	5.4	*A*
	T	87	87	100	2.1	*A*
	Subtotal	169	171	101	3.7	*A*
SB	T	251	237	94	1.8	*A*
	R	91	91	100	0.8	*A*
	Subtotal	342	328	96	1.5	*A*
EB	***L***	***33***	***30***	***90***	***9.7***	***A***
	R	124	121	98	4.7	*A*
	Subtotal	157	151	96	5.7	*A*
Total		669	650	97	3.1	*A*

Intersection: Droubay Road & 850 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	118	122	103	0.3	*A*
	R	32	33	102	0.3	*A*
	Subtotal	150	155	103	0.3	*A*
SB	L	39	36	92	2.7	*A*
	T	336	322	96	0.9	*A*
	Subtotal	375	358	95	1.1	*A*
WB	***L***	***26***	***26***	***100***	***6.3***	***A***
	R	17	16	96	2.6	*A*
	Subtotal	43	42	98	4.9	*A*
Total		568	555	98	1.1	*A*

SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Existing (2021) Plus Project*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & 750 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	4	3	75	2.6	*A*
	T	142	149	105	0.3	*A*
	R	20	22	111	0.2	*A*
	Subtotal	166	174	105	0.3	*A*
SB	L	11	8	71	2.5	*A*
	T	290	282	97	0.5	*A*
	R	6	6	96	0.4	*A*
	Subtotal	307	296	96	0.6	*A*
EB	***L***	***2***	***1***	***50***	***7.2***	***A***
	R	6	7	112	3.3	*A*
	Subtotal	8	8	100	3.8	*A*
WB	L	12	10	82	6.4	*A*
	R	6	6	96	2.2	*A*
	Subtotal	18	16	89	4.8	*A*
Total		500	494	99	0.7	*A*

Intersection: Droubay Road & Fox Run Drive
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	10	10	98	4.1	*A*
	T	153	158	103	2.0	*A*
	R	27	29	107	1.7	*A*
	Subtotal	190	197	104	2.1	*A*
SB	L	21	20	96	2.1	*A*
	T	286	276	97	0.7	*A*
	R	2	1	50	0.3	*A*
	Subtotal	309	297	96	0.8	*A*
EB	L	1	1	100	3.0	*A*
	R	9	10	108	3.1	*A*
	Subtotal	10	11	110	3.1	*A*
WB	***L***	***16***	***15***	***95***	***6.5***	***A***
	R	12	15	122	2.7	*A*
	Subtotal	28	30	107	4.6	*A*
Total		536	535	100	1.5	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Tooele Canyon Springs TIS**
Analysis Period: ***Existing (2021) Plus Project***
Time Period: ***Evening Peak Hour*** **Project #:** ***UT21-2056***

Intersection: **Droubay Road & Smelter Road**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	1	0	0		
	T	89	94	105	8.0	*A*
	R	10	12	117	2.9	*A*
	Subtotal	100	106	106	7.4	*A*
SB	L	21	18	87	8.0	*A*
	T	***158***	***157***	***99***	***8.4***	***A***
	R	131	124	95	5.0	*A*
	Subtotal	310	299	96	7.0	*A*
EB	L	82	85	104	2.1	*A*
	T	31	30	97	0.4	*A*
	R	4	5	125	0.7	*A*
	Subtotal	117	120	103	1.6	*A*
WB	L	7	6	83	1.8	*A*
	T	23	23	100	0.5	*A*
	R	10	11	107	0.3	*A*
	Subtotal	40	40	100	0.6	*A*
Total		568	565	100	5.5	*A*

HALES ENGINEERING
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SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Future (2026) Background*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & 1000 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	85	82	96	5.3	*A*
	T	80	79	99	0.5	*A*
	Subtotal	165	161	98	2.9	*A*
SB	T	255	250	98	2.1	*A*
	R	110	111	101	1.0	*A*
	Subtotal	365	361	99	1.8	*A*
EB	***L***	***40***	***43***	***107***	***11.6***	***B***
	R	130	128	99	4.8	*A*
	Subtotal	170	171	101	6.5	*A*
Total		700	693	99	3.2	*A*

Intersection: Droubay Road & 850 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	120	119	99	0.3	*A*
	R	35	35	99	0.3	*A*
	Subtotal	155	154	99	0.3	*A*
SB	L	25	23	92	3.0	*A*
	T	360	355	99	1.0	*A*
	Subtotal	385	378	98	1.1	*A*
WB	***L***	***30***	***33***	***110***	***6.5***	***A***
	R	10	11	107	2.6	*A*
	Subtotal	40	44	110	5.5	*A*
Total		580	576	99	1.2	*A*

SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Future (2026) Background*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & 750 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	5	5	95	2.9	*A*
	T	150	150	100	0.2	*A*
	Subtotal	155	155	100	0.3	*A*
SB	T	315	317	101	0.5	*A*
	R	10	10	98	0.3	*A*
	Subtotal	325	327	101	0.5	*A*
EB	***L***	***5***	***4***	***76***	***6.0***	***A***
	R	10	10	98	3.4	*A*
	Subtotal	15	14	93	4.1	*A*
Total		496	496	100	0.5	*A*

Intersection: Droubay Road & Fox Run Drive
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	15	13	88	4.3	*A*
	T	150	152	102	1.7	*A*
	Subtotal	165	165	100	1.9	*A*
SB	T	321	323	101	0.4	*A*
	R	5	5	95	0.1	*A*
	Subtotal	326	328	101	0.4	*A*
EB	***L***	***5***	***4***	***76***	***6.6***	***A***
	R	10	10	98	3.6	*A*
	Subtotal	15	14	93	4.5	*A*
Total		506	507	100	1.0	*A*

HALES ENGINEERING
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SimTraffic LOS Report

Project: **Tooele Canyon Springs TIS**
Analysis Period: ***Future (2026) Background***
Time Period: ***Evening Peak Hour*** **Project #:** ***UT21-2056***

Intersection: **Droubay Road & Smelter Road**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	5	4	76	5.7	*A*
	T	80	79	99	7.8	*A*
	R	15	16	108	2.8	*A*
	Subtotal	100	99	99	6.9	*A*
SB	L	25	25	100	7.2	*A*
	T	***170***	***168***	***99***	***8.6***	***A***
	R	135	137	101	5.2	*A*
	Subtotal	330	330	100	7.1	*A*
EB	L	60	61	101	2.1	*A*
	T	35	33	94	0.5	*A*
	R	5	5	95	0.3	*A*
	Subtotal	100	99	99	1.5	*A*
WB	L	10	9	88	2.0	*A*
	T	30	32	107	0.5	*A*
	R	15	15	102	0.4	*A*
	Subtotal	55	56	102	0.7	*A*
Total		586	584	100	5.5	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Future (2026) Plus Project*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & 1000 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	94	90	95	6.0	*A*
	T	101	102	101	0.6	*A*
	Subtotal	195	192	98	3.1	*A*
SB	T	292	295	101	2.2	*A*
	R	110	110	100	1.1	*A*
	Subtotal	402	405	101	1.9	*A*
EB	***L***	***40***	***40***	***99***	***12.8***	***B***
	R	146	150	103	5.4	*A*
	Subtotal	186	190	102	7.0	*A*
Total		783	787	100	3.4	*A*

Intersection: Droubay Road & 850 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	138	136	98	0.3	*A*
	R	40	40	99	0.3	*A*
	Subtotal	178	176	99	0.3	*A*
SB	L	46	45	98	3.3	*A*
	T	392	399	102	1.1	*A*
	Subtotal	438	444	101	1.3	*A*
WB	***L***	***33***	***33***	***99***	***6.8***	***A***
	R	22	22	101	2.7	*A*
	Subtotal	55	55	100	5.2	*A*
Total		672	675	100	1.4	*A*

HALES ENGINEERING
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SimTraffic LOS Report

Project: Tooele Canyon Springs TIS
Analysis Period: *Future (2026) Plus Project*
Time Period: *Evening Peak Hour* **Project #:** *UT21-2056*

Intersection: Droubay Road & 750 North
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	5	4	76	3.0	*A*
	T	168	169	100	0.3	*A*
	R	20	18	91	0.2	*A*
	Subtotal	193	191	99	0.3	*A*
SB	L	11	11	98	2.2	*A*
	T	339	344	102	0.6	*A*
	R	10	10	98	0.4	*A*
	Subtotal	360	365	101	0.6	*A*
EB	L	5	4	76	6.0	*A*
	R	10	10	98	3.4	*A*
	Subtotal	15	14	93	4.1	*A*
WB	***L***	***12***	***11***	***90***	***8.2***	***A***
	R	6	6	96	2.5	*A*
	Subtotal	18	17	94	6.2	*A*
Total		588	587	100	0.8	*A*

Intersection: Droubay Road & Fox Run Drive
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	15	13	88	4.6	*A*
	T	175	172	98	1.8	*A*
	R	27	29	107	1.9	*A*
	Subtotal	217	214	99	2.0	*A*
SB	L	21	18	87	2.7	*A*
	T	336	341	101	0.5	*A*
	R	5	6	114	0.3	*A*
	Subtotal	362	365	101	0.6	*A*
EB	***L***	***5***	***4***	***76***	***7.5***	***A***
	R	10	10	98	3.4	*A*
	Subtotal	15	14	93	4.6	*A*
WB	L	16	14	89	7.2	*A*
	R	12	13	106	2.8	*A*
	Subtotal	28	27	96	5.1	*A*
Total		623	620	100	1.4	*A*

HALES ENGINEERING
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SimTraffic LOS Report

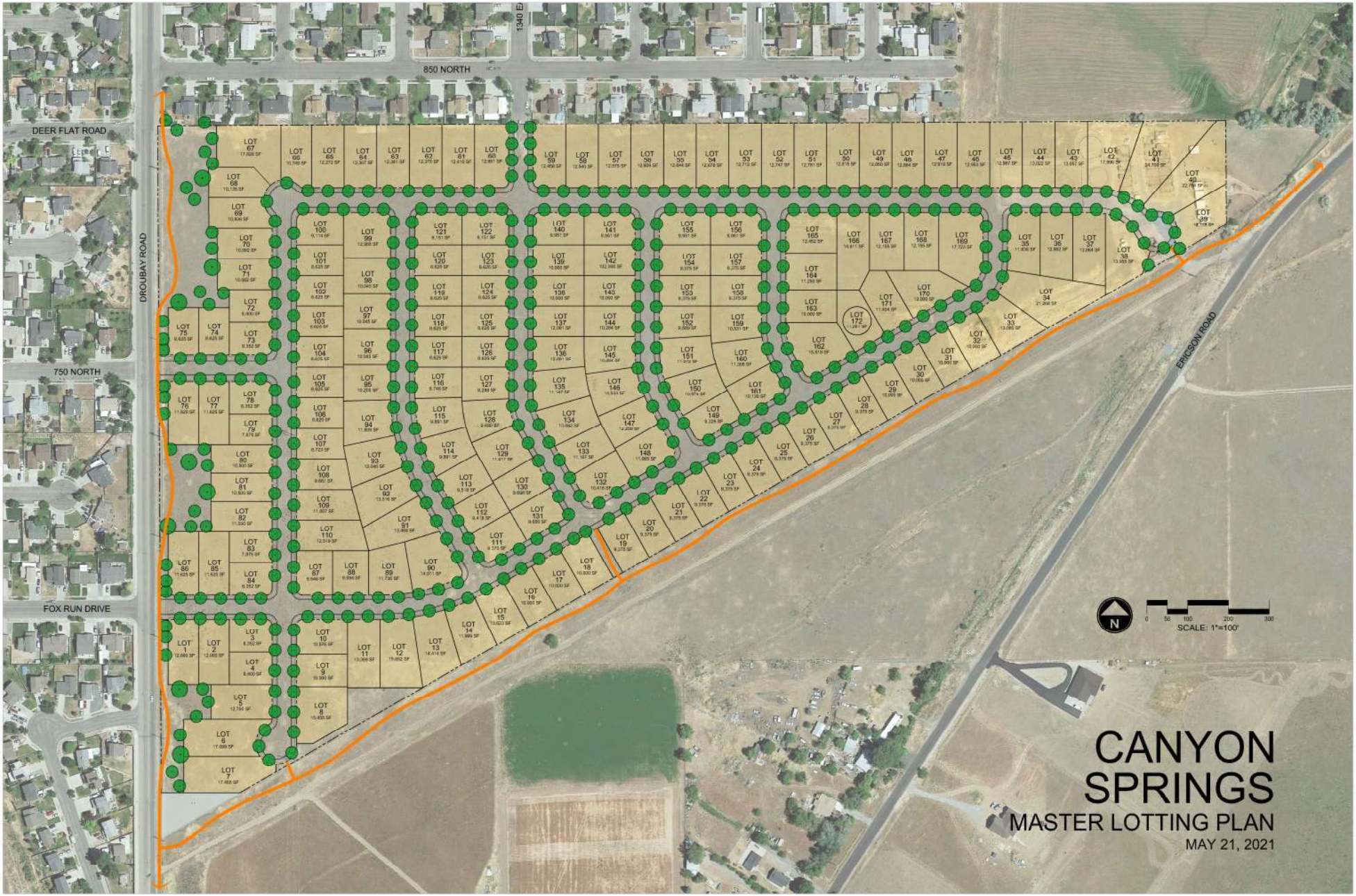
Project: **Tooele Canyon Springs TIS**
Analysis Period: ***Future (2026) Plus Project***
Time Period: ***Evening Peak Hour*** **Project #:** ***UT21-2056***

Intersection: **Droubay Road & Smelter Road**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	5	4	76	5.9	*A*
	T	101	100	99	8.4	*A*
	R	15	18	122	3.1	*A*
	Subtotal	121	122	101	7.5	*A*
SB	L	25	24	96	8.1	*A*
	T	***182***	***184***	***101***	***9.0***	***A***
	R	154	156	101	5.6	*A*
	Subtotal	361	364	101	7.5	*A*
EB	L	91	91	100	2.2	*A*
	T	35	37	105	0.6	*A*
	R	5	6	114	0.5	*A*
	Subtotal	131	134	102	1.7	*A*
WB	L	10	8	78	1.9	*A*
	T	30	31	103	0.5	*A*
	R	15	15	102	0.3	*A*
	Subtotal	55	54	98	0.7	*A*
Total		669	674	101	5.8	*A*

APPENDIX C

Site Plan


850 NORTH
1340 E
DEER FLAT ROAD
DROUBAY ROAD
750 NORTH
FOX RUN DRIVE
ERICSON ROAD
N
0 50 100 200 300
SCALE: 1"=100'
CANYON SPRINGS
MASTER LOTTING PLAN
MAY 21, 2021

APPENDIX D

95th Percentile Queue Length Reports

SimTraffic Queueing Report

Project: Tooele Canyon Springs TIS

Analysis: Existing (2021) Background

Time Period: Evening Peak Hour

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

HALES ENGINEERING
innovative transportation solutions

Project #: UT21-2056

Intersection	NB		SB			EB			WB	
	LT	LTR	L	LTR	TR	L	R	TR	L	R
01: Droubay Road & 1000 North	75					75	75			
02: Droubay Road & 850 North									50	
03: Droubay Road & 750 North										
04: Droubay Road & Fox Run Drive										
05: Droubay Road & Smelter Road		75		100						

SimTraffic Queueing Report

Project: Tooele Canyon Springs TIS

Analysis: Existing (2021) 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 #: UT21-2056

Intersection	NB		SB				EB				WB		
	LT	LTR	L	LT	LTR	TR	L	LT	R	TR	L	LT	R
01: Droubay Road & 1000 North	75						75		75				
02: Droubay Road & 850 North			50								50		50
03: Droubay Road & 750 North												50	
04: Droubay Road & Fox Run Drive												50	50
05: Droubay Road & Smelter Road		75			100		50						

SimTraffic Queueing Report

Project: Tooele Canyon Springs TIS

Analysis: Future (2026) Background

Time Period: Evening Peak Hour

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

HALES ENGINEERING
innovative transportation solutions

Project #: UT21-2056

Intersection	NB		SB		EB			WB	
	L	TR	L	TR	L	R	TR	L	R
01: Droubay Road & 1000 North	75				75	75			
02: Droubay Road & 850 North								50	50
03: Droubay Road & 750 North						25			
04: Droubay Road & Fox Run Drive									
05: Droubay Road & Smelter Road		75	50	100					

SimTraffic Queueing Report

Project: Tooele Canyon Springs TIS

Analysis: Future (2026) 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 #: UT21-2056

Intersection	NB			SB		EB				WB			
	L	R	TR	L	TR	L	LT	R	TR	L	LT	R	T
01: Droubay Road & 1000 North	75					75		75					
02: Droubay Road & 850 North				50						50		50	
03: Droubay Road & 750 North								25			50		
04: Droubay Road & Fox Run Drive								50			50	50	
05: Droubay Road & Smelter Road			75	50	100	50							

Chapter 1. General Provisions

7-1-5. Definitions.

Heavy Equipment Sales and Rental – An establishment primarily engaged in the sale or rental of trucks of one ton or greater capacity, tractors, construction equipment, agricultural implements, or similar equipment. Typical uses include truck dealerships, construction equipment dealerships.

Chapter 16. Zoning District Purpose and Intent. Mixed Use, Commercial, Industrial and Special Purpose Districts

TABLE 1
TABLE OF USES

DEVELOPMENT REQUIREMENT	DISTRICT								
	Mixed Use - Broadway **(MU-B)**	Mixed Use - General **(MU-G)**	Neighborhood Commercial **(NC)**	General Commercial **(GC)**	Regional Commercial **(RC)**	Light Industrial **(LI)**	Industrial Service **(IS)**	Industrial **(I)**	Research & Development **(RD)**
Heavy Equipment Sales and Rental as an Accessory Use to an Established Retail Use				*P*					

Ordinance, General Plan, & Master Plan Text Amendment Application

Community Development Department
90 North Main Street, Tooele, UT 84074
(435) 843-2132 Fax (435) 843-2139
www.tooelecity.org

Notice: The applicant must submit copies of the text amendment proposal to be reviewed by the City in accordance with the terms of the Tooele City Code. Once a text amendment proposal are submitted, the proposal is subject to compliance reviews by the various city departments and may be returned to the applicant for revision if the proposal is found to be inconsistent with the requirements of the City Code and all other applicable City ordinances. All submitted text amendment proposals shall be reviewed in accordance with the Tooele City Code. Submission of a text amendment proposal in no way guarantees placement of the application on any particular agenda of any City reviewing body. It is **strongly** advised that all applications be submitted well in advance of any anticipated deadlines.

Project Information

22-597

Date of Submission: 5-10-22	Applicant Name: Lars Andersen & Associates, Inc. c/o Janay Mommer
Address: 28827 N 91st Ave, Peoria, AZ 85383	
Phone: 559-978-7643	Alternate Phone:
Email: jmommer@larsandersen.com	

Proposed for Amendment: ☒ Ordinance ☐ General Plan ☐ Master Plan: _____

Brief Summary of Proposal:

Amending Ordinance to Table of Commercial Uses Tooele City Code 7-16 o allow Equipment Sales and Rental in the GC General Commercial Zone.
See attached proposed Amendment.

*The application you are submitting will become a public record pursuant to the provisions of the Utah State Government Records Access and Management Act (GRAMA). You are asked to furnish the information on this form for the purpose of identification and to expedite the processing of your request. This information will be used only so far as necessary for completing the transaction. If you decide not to supply the requested information, you should be aware that your application may take a longer time or may be impossible to complete. If you are an "at-risk government employee" as defined in *Utah Code Ann.* § 63-2-302.5, please inform the city employee accepting this information. Tooele City does not currently share your private, controlled or protected information with any other person or government entity.

Note to Applicant:
Ordinances, the General Plan, and other master plans are made by ordinance. Any change to the text of the ordinance or plan is an amendment the ordinance establishing that document for which the procedures are established by city and state law. Since the procedures must be followed precisely, the time for amending the text may vary from as little as 2½ months to 6 months or more depending on the size and complexity of the application and the timing.

For Office Use Only 2220593

Received By:	Date Received:	Fees:	App. #:
#1	5/25/22	$2000.00	480871

Proposed Ordinance Text Amendment

The requested Application is for an Ordinance Text Amendment to outline Permitted Uses for the Land Use of "Heavy Equipment and vehicle rental as an accessory use to an established retail use" in Tooele City Code 7-16. The Following contains Tooele City Code 7-16-3. Table. Table of Uses) in its current form and is the Table of Uses where the requested Ordinance Text Amendment is being requested:

TABLE 1
TABLE OF USES

USE	DISTRICT								
	MU-B Mixed Use-Broadway	MU-G Mixed Use-General	NC Neighborhood Commercial (Maximum individual lot Size 15,000 square feet)	GC General Commercial	RC Regional Commercial	LI Light Industrial	IS Industrial Service	I Industrial	RD Research & Development

Below is the Proposed Ordinance Amendment Text to include the following Land Use in the "Table of Uses":

Title 17. Chapter 16 Part 2 (7-16-3. Table 1. Table of Uses)

USE	DISTRICT								
	MU-B Mixed Use-Broadway	MU-G Mixed Use-General	NC Neighborhood Commercial (Maximum individual lot Size 15,000 square feet)	GC General Commercial	RC Regional Commercial	LI Light Industrial	IS Industrial Service	I Industrial	RD Research & Development
Heavy Equipment and vehicle rental as an accessory use to an established retail use				P					

Proposed Ordinance Text Amendment

Explain as specifically and detailed as possible why the amendment to the text is necessary or in the best interest of Tooele City and the community as a whole.

The proposed amendment will provide a benefit to Tooele City by defining an additional Land Use that can better serve the needs of the Community. Allowing options for the Community to rent equipment and trucks provides greater options for homeowners and small-scale contractors to rent items for a one-time project and/or small-scale project – where otherwise may not have the options to purchase such equipment.

Explain how the proposed text amendment could potentially effect existing and potential land uses or properties within Tooele City.

By Permitting this type of Use in General Commercial, other properties would enjoy the same benefit. However, in order to make certain that it is a consistent Development Staff or City Council can provide additional conditions to ensure a unified Citywide Development.

Explain how the proposed text amendment promotes the goals and objectives of Tooele City.

The proposed text amendment will promote the goals and objectives of Tooele City by allowing options for Land Uses to better serve the needs of the Community and promote economic vitality due to the constant change in the supply chain dilemma and dynamics of commercial and retail uses.

TOOELE COUNTY HOUSING AUTHORITY
66 West Vine, Tooele, Utah 84074
(435) 882-7875 • Fax (435) 882-7894

May 31, 2022

Mayor Winn,

On behalf of the Harris Community Village team, I'd like to thank you for your continued support. We are incredibly close to breaking ground and at this time would like to formally request the allocation of 8.35 acre feet of water via Tooele City's ARPA allocation. This request is based on collaboration with Tooele City and Tooele City Council. These shares are critical in our ability to execute successfully on this project.

The water shares will be used to support the operations and critical community services of Harris Community Village. This project will provide a wide variety of community services including the following:

- Food Pantry
- Meal service
- Daycare
- Case management
- Housing
- Emergency Shelter
- Day services and case management

Tooele County Housing Authority has partnered with Friends of Switchpoint to provide these services and operate the Community Resource Center. Together the project has garnered significant public and private support. The contribution of these water shares will allow the project to execute on it's already committed $25MM dollars. Further, the investment in Tooele will add to the strength and resilience of its community.

Your consideration and support are very much appreciated,

Respectfully,

DeAnn Christiansen
Executive/Development
Director

EQUAL HOUSING OPPORTUNITY