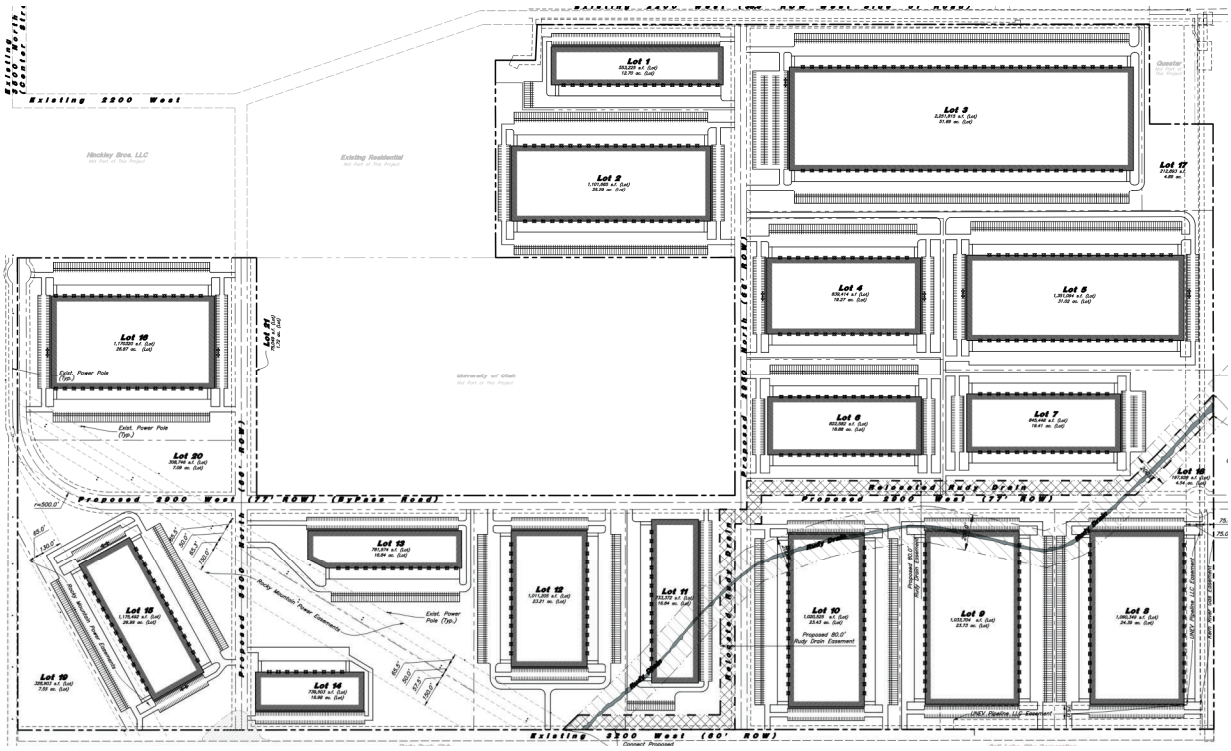
ATTACHMENT K: **Miscellaneous Studies**

This attachment includes the following additional studies that are utilized by City departments in their analysis of the development's compliance with their regulations:

1. Traffic Study
2. Wetland Reports
    a. Wetland Delineation Report
    b. Wetland Proof of Mitigation Credits
    c. Wetland Report Submittal E-mail to Army Corps
3. Rudy Drain Study
4. Geotechnical Study
    a. Geotechnical Report
    b. Geotechnical Supplement Regarding Groundwater Level Impacts
    c. Seismic Study for Buildings
5. Lift Station Analysis (Associated with off-site Sewer Lift Station on Airport Property)
    a. Lift Station Study
    b. Lift Station Exhibits

Salt Lake City – Scannell Swaner Traffic Impact Study



LICENSED PROFESSIONAL ENGINEER
8905056
JEREMY E.
SEARLE
02/04/2022
STATE OF UTAH

Prepared by: WCG

Updated: February 4, 2022

Executive Summary

This study addresses the traffic impacts associated with the proposed Scannell Swaner development (Project) located in Salt Lake City, Utah. The Project is generally located between 2200 West and 3200 West and between 2100 North and 3300 North northeast of the Salt Lake City International Airport.

The Project proposes a total of 6,150,000 square feet of warehouse buildings. This will consist of 16 different warehouse buildings. This will be developed over multiple years, with 1,203,000 square feet anticipated to be complete in the first year, 4,909,500 by 2026, and the entire site built out by 2028.

The future 2040 plus project analysis includes two different scenarios. These scenarios are described below:

Project Traffic Directed to 2200 West – This scenario assumes that the roadway network remains generally as is. Connections to 3200 West and/or 2900 West are not utilized for the proposed project. This scenario assumes that all project traffic will utilize 2200 West to access the project site.

It is also assumed that by 2040, that the 3500 North (Center Street) / 2200 West intersection will be realigned as a T-intersection with free flowing east- and westbound movements. The northbound direction will have a stop sign. 3500 North (Center Street) will extend west into the project site and make a large bend becoming 2900 West.

Project Traffic Split between 2200 West and 2900 West – This scenario assumes that 2900 West is constructed from the project site south to 2100 North. This provides a second primary route to/from the project site. It is assumed that the 2900 West / 2100 North is a signalized T-intersection with separate left- and right-turn lanes.

This scenario also assumes that by 2040, that the 3500 North (Center Street) / 2200 West intersection will be realigned as a T-intersection with free flowing east- and westbound movements. The northbound direction will have a stop sign. 3500 North (Center Street) will extend west into the project site and make a large bend becoming 2900 West.

The level of service (LOS) for both morning and evening peak hours was determined for each study intersection under every scenario. The results of the analysis are summarized in ***Table ES-1*** for the AM peak hour, and ***Table ES-2*** for the PM peak hour.

Table ES-1: Level of Service Summary – AM Peak Hour							
Intersection	Level of Service (sec/vehicle)[1] Worst Movement / Overall						
	Background 2021 Conditions	**Opening Day Plus Project**	**Future 2026 Background**	**Future 2026 Plus Project**	**Future 2040 Background**	**Future 2040 Plus Project – 2200 West Only**	**Future 2040 Plus Project – 2900 West & 2200 West**
2200 West / 2100 North	B (12.6) SB LT	C (16.6) NB Thru	B (13.5) SB LT	B (13.0) Overall	B (15.9) Overall	C (30.6) Overall	C (26.4) Overall
3200 West / 2100 North	A (2.1) NB RT	A (3.6) NB RT	A (3.1) SB RT	A (4.7) WB RT	A (8.8) NB LT	A (9.3) NB LT	A (9.4) NB LT
3300 North / 2200 West	A (3.5) EB LT	A (4.4) EB LT	A (3.8) EB LT	A (4.9) EB LT	A (5.6) EB LT	A (5.7) EB LT	A (5.6) EB LT
3500 North (Center Street) / 2200 West	A (3.5) EB RT	A (2.7) EB RT	A (2.6) EB RT	A (3.0) NB LT	A (7.0) EB Thru	A (8.1) NB LT	A (8.3) NB LT
2950 North / 2200 West	-	A (5.8) EB LT	-	C (19.7) EB LT	-	A (8.9) NB LT	A (5.6) EB LT
Access / 2200 West	-	A (4.8) NB LT	-	A (9.6) EB LT	-	A (8.8) EB LT	A (5.8) EB LT
Realigned 2200 West / 2900 West	-	-	-	-	-	-	C (26.7) Overall

Table ES-2: Level of Service Summary – PM Peak Hour

Intersection	Level of Service (sec/vehicle)[1] Worst Movement / Overall						
	Background 2021 Conditions	**Opening Day Plus Project**	**Future 2026 Background**	**Future 2026 Plus Project**	**Future 2040 Background**	**Future 2040 Plus Project – 2200 West Only**	**Future 2040 Plus Project – 2900 West & 2200 West**
2200 West / 2100 North	B (14.4) NB Thru	D (25.2) NB Thru	C (17.3) SB LT	F (> 80) Overall	C (22.2) Overall	C (31.4) Overall	C (31.1) Overall
3200 West / 2100 North	A (5.3) SB LT	B (11.4) SB LT	A (7.8) SB LT	A (7.9) SB LT	A (9.6) NB LT	A (9.2) NB LT	A (8.1) SB LT
3300 North / 2200 West	A (4.7) NB LT	A (4.1) EB LT	A (4.1) EB LT	A (6.3) EB LT	A (5.3) EB LT	A (5.7) EB LT	A (5.5) EB LT
3500 North (Center Street) / 2200 West	A (2.9) EB RT	A (3.2) EB LT	A (2.9) EB RT	A (3.8) NB LT	A (7.0) EB Thru	B (11.9) NB LT	B (10.5) NB RT
2950 North / 2200 West	-	A (5.4) EB LT	-	F (> 50) EB LT	-	A (8.9) EB RT	A (6.0) EB LT
Access / 2200 West	-	A (5.0) EB LT	-	F (> 50) EB LT	-	B (12.0) EB LT	A (6.1) EB LT
Realigned 2200 West / 2900 West	-	-	-	-	-	-	B (18.1) Overall

Findings and Recommendations

WCG makes the following conclusions and recommendations:

- The existing study intersections currently operate at acceptable levels of service with minimal queuing.
- The Project will include 6,150,000 square feet of warehouse buildings. This will consist of 16 different warehouse buildings.
- Initially, the project will gain access through the new 2950 North roadway connection to 2200 West, and a new access on the south end of the project site.
- With project traffic added, all study intersections are anticipated to operate at acceptable levels of service in opening day conditions.
- The future background 2026 conditions analysis showed that all intersections are anticipated to continue to operate will without the addition of the project.
- With the addition of project traffic in 2026, the following mitigation measures are recommended at the 2200 West / 2100 North intersection:
    - Improve the southbound approach to include a separate right, through, and dual left-turn lanes.
        - Southbound dual left-turn lanes will require two acceptance lanes. It was assumed that one of the acceptance lanes becomes a trap right-turn lane onto southbound I-215 and the other continues across the bridge over I-215.
    - Improve the westbound approach to have a dedicated right-turn lane.
    - Stripe the northbound approach to include a separate left-turn lane and a shared through / right-turn lane.
    - Install a signal.
- With the mitigation measures recommended above, all study intersections are anticipated to operate at acceptable levels of service in the 2026 plus project conditions.
- With the previous mitigation measures described, all study intersections are anticipated to operate at acceptable levels of service in the 2040 background conditions scenario.
    - Due to long queues in the northbound direction at the 2100 North / 2200 West intersection, a northbound right-turn pocket is recommended.
- The future 2040 background analysis showed that all study intersections are anticipated to operate at acceptable levels of service without project traffic.
- Two scenarios were analyzed in the future 2040 plus project conditions. These are described below

Project Traffic Directed to 2200 West

- This scenario assumes that the roadway network remains generally as is.

Connections to 3200 West and/or 2900 West are not utilized for the proposed project. The following mitigation measures are recommended for this scenario:

- All previously recommended improvements at the 2200 West / 2100 North intersection.
- It is recommended that the westbound right-turn lane be extended back to the southbound I-215 ramps as an auxiliary lane. In conjunction with this improvement, a westbound right-turn overlap phase is recommended at the 2200 West / 2100 North intersection.
- It is recommended that the 2200 West roadway be improved to a three-lane cross section as planned in the Salt Lake City Transportation Master Plan, which would provide left-turn lanes at the project site accesses.
- It is also assumed that by 2040, that the 3500 North (Center Street) / 2200 West intersection will be realigned as a T-intersection with free flowing east- and westbound movements. The northbound direction will have a stop sign. 3500 North (Center Street) will extend west into the project site and make a large bend becoming 2900 West.

Project Traffic Spilt between 2200 West and 2900 West

- This scenario assumes that 2900 West is constructed from the project site south to 2100 North. This provides a second primary route to/from the project site. It is assumed that the 2900 West / 2100 North is a signalized T-intersection with separate left- and right-turn lanes. The following mitigation measures are recommended for this scenario:
  - All previously recommended improvements at the 2200 West / 2100 North intersection.
  - It is recommended that the 2200 West roadway be improved to a three-lane cross section as planned in the Salt Lake City Transportation Master Plan, which would provide left-turn lanes at the project site accesses.
  - It is also assumed that by 2040, that the 3500 North (Center Street) / 2200 West intersection will be realigned as a T-intersection with free flowing east- and westbound movements. The northbound direction will have a stop sign. 3500 North (Center Street) will extend west into the project site and make a large bend becoming 2900 West.
- With the improvements described above, all study intersections are anticipated to operate at acceptable levels of service.
  - However, due to long westbound queues at the 2200 West / 2100 North intersection, it is recommended that the westbound right-turn pocket be extended. This could be extended to the southbound I-215 ramp as an auxiliary lane.

Summary of Findings and Recommendations

Project Conditions Summary

- The Project proposes 6,150,000 square feet of warehouse buildings.
- The Project is estimated to generate a total daily trip generation of 10,517 trips, 1,046 AM peak hour trips, and 1,107 PM peak hour trips.

2021	Background	With Project
Assumptions	Existing roadway configuration	
Findings	• All intersections operate at acceptable levels of service during both peak hours	• All intersections operate at acceptable levels of service during both peak hours
Mitigations	• None required	• None required

2026	Background	With Project
Assumptions	Existing roadway configuration	
Findings	• All intersections operate at acceptable levels of service during both peak hours	<u>2200 West / 2100 North Intersection</u> • Improve the southbound approach to include a separate right, through, and dual left-turn lanes
Mitigations	• None required	• Add a second westbound acceptance lane that becomes a trap right-turn lane onto southbound I-215 • Improve the westbound approach to have a dedicated right-turn lane • Install a signal

2040	Background	With Project
Assumptions	• Same roadway network as existing	*<u>Project Traffic Directed to 2200 West</u>* • All previously recommended improvements at the 2200 West / 2100 North intersection • The westbound right-turn lane be extended back to the southbound I-215 ramps as an auxiliary lane • Add a westbound right-turn overlap phase is recommended at the 2200 West / 2100 North intersection • It is recommended that the 2200 West roadway be improved to a three-lane cross section

		• (Center Street) / 2200 West intersection is realigned. *Project Traffic Spilt between 2200 West and 2900 West*
Findings	• All intersections operate at acceptable levels of service during both peak hours	• All previously recommended improvements at the 2200 West / 2100 North intersection
Mitigations	• None required	• Add a westbound right-turn overlap phase is recommended at the 2200 West / 2100 North intersection • It is recommended that the 2200 West roadway be improved to a three-lane cross section • The westbound right-turn lane be extended back to the southbound I-215 ramps as an auxiliary lane

Table of Contents

List of Tables

List of Figures

I. INTRODUCTION

A. Purpose

This study addresses the traffic impacts associated with the proposed Scannell Swaner development (Project) located in Salt Lake City, Utah. The Project is generally located between 2200 West and 3200 West and between 2100 North and 3300 North northeast of the Salt Lake City International Airport. ***Figure 1*** depicts the location of the Project and the study intersections. A concept land use plan is also included in ***Appendix A***.

Included within the analyses for this study are the traffic operations for opening day (2021) conditions, future (2026) conditions, and future (2040) conditions with and without the Project at study intersections and roadways adjacent to the Project.

B. Scope

Based on the proximity to the Project site the following intersections were analyzed to evaluate the traffic operational impacts:

- 2200 West / 2100 North
- 3200 West / 2100 North
- 3300 North / 2200 West
- 3500 North (Center Street) / 2200 West

C. Analysis Methodology

Level-of-service (LOS) is a term that describes an intersections operating performance during critical peak hours of the day. 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 thresholds for both signalized and unsignalized intersections.

The Highway Capacity Manual (HCM) 6th Edition, 2016 methodology was used in this study. This methodology has different quantitative evaluations for signalized and unsignalized intersections. For signalized intersections, the overall intersection LOS is reported. For other unsignalized intersections, the worst approach or movement LOS is reported. LOS is measured in seconds of delay per vehicle.

Table 1: Level of Service Definition for Intersections			
LOS	**Signalized Delay (sec/vehicle)**	**Unsignalized Delay (sec/vehicle)**	**Description**
A	≤10	≤10	Favorable progression
B	>10 and ≤20	>10 and ≤15	Good progression
C	>20 and ≤35	>15 and ≤25	Fair progression
D	>35 and ≤55	>25 and ≤35	Noticeable congestion
E	>55 and ≤80	>35 and ≤50	Limit of acceptable delay
F	>80	>50	Unacceptable delay
Source: *Highway Capacity Manual*, Transportation Research Board, 2016			

Using Synchro/SimTraffic software, which incorporates the HCM methodology, WCG computed the peak hour LOS for each study intersection. Multiple runs (10) of SimTraffic were used to provide a statistical evaluation of traffic operations along the study corridor and at each study intersection. Detailed LOS and queueing reports are included in ***Appendix C***.

D. Level of Service Standards

For the purposes of this study, a minimum overall intersection performance for each of the study intersections was set at LOS D. LOS D is generally considered acceptable for urbanized areas. If LOS E or F conditions exist, an explanation and/or mitigation measures are presented.

WALL CONSULTANT GROUP

Vicinity Map

Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

PROJECT: 21-215

Figure #1

II. BACKGROUND EXISTING CONDITIONS

A. Purpose

The purpose of the existing conditions section is to gather existing information on roadway geometry, lane configurations and traffic volumes for the surrounding area. This information is used to help identify and quantify impacts that the Project will have on the surrounding roadway network. The existing (2021) background analysis evaluates the study intersections and roadways without any Project traffic and establishes existing traffic and geometric conditions.

B. Roadway System

The intersections are described below and shown in ***Figure 2***, along with existing intersection lane configurations.

2200 West / 2100 North – This study intersection is a four-leg intersection with free movements on the eastbound and westbound (2100 North) approaches, and stop control on the northbound and southbound (2200 West) approaches. The northbound and southbound approaches have a single lane for all movements. The eastbound approach has two lanes in each direction with a center turn lane. At the intersection, the second eastbound lane becomes a trap right-turn lane. The westbound approach is a three lane cross section with one lane in each direction and a center turn lane. At the intersection, the shoulder is used as a de facto right-turn pocket. Both 2100 North and 2200 West are classified by the November 13, 2018 Salt Lake City Transportation Master Plan map as arterial roadways. The posted speed along 2100 North is 50 mph. The posted speed limit on 2200 West is 30 mph.

The 2018 Salt Lake City Transportation Master Plan map shows a proposed alignment for 2200 West that swings further west through the project site and curves back to tie into 3500 North (Center Street).

3200 West / 2100 North – This study intersection is a four-leg T-intersection with free movements on the eastbound and westbound (2100 North) approaches, and stop control on the northbound and southbound (3200 West) approaches. The south leg is a gated access to the Salt Lake City International Airport. The north leg is 3200 West and is unpaved. The eastbound and westbound approaches have two lanes in each direction with a center turn lane. 2100 North is classified by the 2018 Salt Lake City Transportation Master Plan map as an arterial roadway and 3200 West is classified as a collector roadway. The posted speed along 2100 North is 50 mph, and 3200 West is not posted.

3300 North / 2200 West – This study intersection is a T-intersection with free movements on the northbound and southbound (2200 West) approaches and stop control on the eastbound (3300 North) approach. All legs of the intersection have a single lane for all movements. 3300 North is classified by the 2018 Salt Lake City Transportation Master Plan map as a collector roadway. The posted speed along 2200 West is 30 mph and 3300 North is 35 mph.

3500 North (Center Street) / 2200 West – This study intersection is a a 90-degree bend where 2200 West curves to the east and becomes 3500 North (Center Street). There is an access to the west at the bend in the road. All legs of the intersection have only a single lane for all movements. The posted speed along 2200 West is 30 mph, and transitions to 35 mph on 3500 North (Center Street).

C. Traffic Volumes

WCG conducted weekday morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak period traffic counts at the following existing intersections:

- 2200 West / 2100 North
- 3200 West / 2100 North
- 3300 North / 2200 West

The counts collected at 3300 North / 2200 West were assumed to be representative of the existing traffic volumes at the 90-degree bend at 3500 North (Center Street) / 2200 West since there are only two driveways in between these intersections. The intersection turning movement counts were completed on Thursday September 30, 2021. These counts were collected in September 2021, during the COVID-19 pandemic. No restrictions were in place when the counts were completed. According to UDOT's COVID-19 Traffic Dashboard, traffic volumes in Salt Lake County in September and the first half of October of 2021 are approximately 99 – 103 percent compared to traffic volumes in 2019 before the pandemic. Therefore, no adjustments were made to the volumes to account for fluctuations due to the pandemic. WCG analyzed both the morning and evening peak hours as a part of this study.

Figure 2 depicts the existing (2021) AM and PM peak hour traffic volumes at the study intersections. Traffic count data is included in ***Appendix B***.

D. Level of Service Analysis

WCG determined that all study intersections are currently operating at acceptable levels of service during the AM and PM peak hours, as shown in ***Table 2***. Detailed LOS reports are included in ***Appendix C***.

E. Queuing Analysis

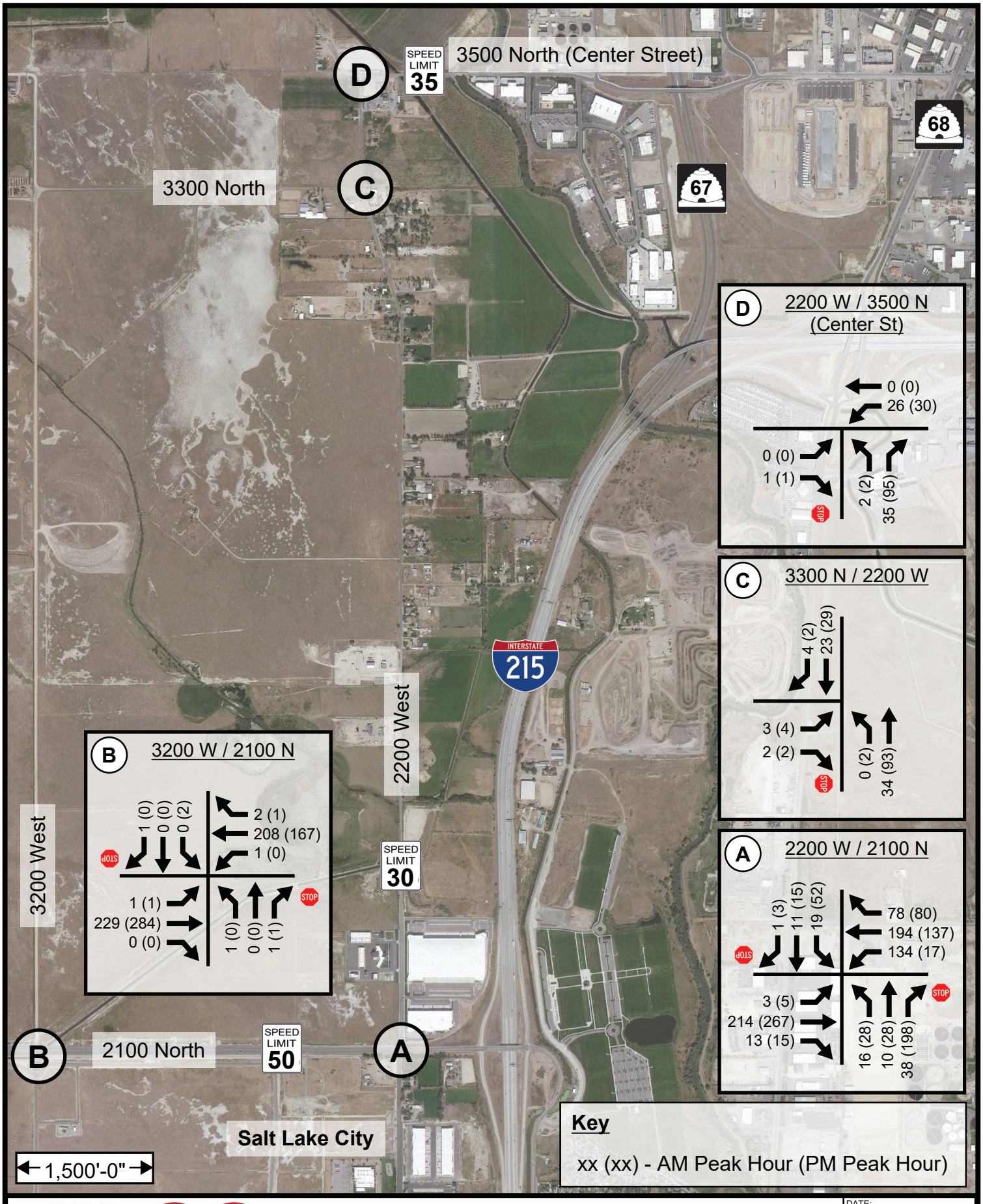
The 95th percentile queue lengths were evaluated for each study intersection. The 95th percentile queues for all intersections were not significant. The full queuing analysis is included in ***Appendix C***.

Table 2: Existing Conditions (2021) Background Peak Hour Level of Service						
Intersection		Worst Movement[1]			Overall Intersection[2]	
Intersection	Control	Approach	Avg. Delay (Sec / Veh)	LOS	Avg. Delay (Sec / Veh)	LOS
AM Peak Hour						
2200 West / 2100 North	NB / SB Stop	SB LT	12.6	B	-	-
3200 West / 2100 North	NB / SB Stop	NB RT	2.1	A	-	-
3300 North / 2200 West	EB Stop	EB LT	3.5	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	EB RT	3.5	A	-	-
PM Peak Hour						
2200 West / 2100 North	NB / SB Stop	NB Thru	14.4	B	-	-
3200 West / 2100 North	NB / SB Stop	SB LT	5.3	A	-	-
3300 North / 2200 West	EB Stop	NB LT	4.7	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	EB RT	2.9	A	-	-

[1] This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections.
[2] This represents the overall intersection LOS and delay (seconds / vehicle).

F. Mitigation Measures

As shown in ***Table 2***, all intersections and approaches are expected to operate at Level of Service A or B, meeting LOS standards described in Chapter I. No significant queuing was observed. There are no mitigation measures required for existing (2021) background conditions.



WALL CONSULTANT GROUP

Existing Conditions

Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

PROJECT: 21-215

Figure #2

III. PROJECT CONDITIONS

A. Purpose

This section describes the type and intensity of land uses planned as a part of the Project and serves as the basis for trip generation, distribution, and assignment of Project trips to the study area roadways and intersections.

B. Project Description

The Project proposes a total of 6,150,000 square feet of warehouse buildings. This will consist of 16 different warehouse buildings. A conceptual land use plan for the Project is included in ***Appendix A***.

The 2018 Salt Lake City Transportation Master Plan map shows a proposed alignment for 2200 West that swings further west through the project site and curves back to tie into 3500 North (Center Street). This is accommodated within the site plan with a new road running north/south through the project called 2950 North. This road take a big sweeping turn at the north end of the project to tie into 3500 North (Center Street) in the future. The new 2900 West roadway and tie-in to 3500 North (Center Street) are designed as cul-de-sacs within the project. It is anticipated that the connection to the surrounding roadway network will be completed in the future as development occurs. In the short-term, it is anticipated that traffic will use the existing 2200 West roadway until the realignment to 2900 West and the tie-in to 3500 North (Center Street) are completed.

C. Overall Trip Generation, Distribution and Assignment

Project trip generation estimates were developed using trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation,10th Edition*. The following land use code (LUC) was used to calculate the trip generation for the site:

- LUC 150 – Warehousing. This land use is defined as “primarily devoted to the storage of materials, but it may also include office and maintenance areas.” No tenants or facility operator has been identified for the project yet.

Table 3 shows the anticipated phasing schedule for the project. As shown, the project team anticipates that approximately 1,203,000 square feet of warehouse will be complete in 2023. This is assumed as the “opening day plus project” analysis. By 2026, the square footage of completed warehouse increases to 4,909,500. The entire project is expected to be complete in 2028 and was included in the 2040 analysis.

The number of trips generated by each phase and the overall Project is shown in ***Table 4***.

Table 3: Anticipated Phasing Schedule		
Year	**Square Feet Completed**	**Total Square Feet**
2023	1,203,000	1,203,000
2024	1,170,500	2,373,500
2025	1,510,500	3,884,000
2026	1,025,500	4,909,500
2027	510,500	5,420,000
2028	730,000	6,150,000

Table 4: Overall Trip Generation

Phase	Intensity	Units	Daily	AM Peak			PM Peak		
			Total	In	Out	Total	In	Out	Total
Phase 1: Opening Day	1,203	1,000 sq. ft.	**2,057**	**157**	**48**	**205**	**61**	**156**	**217**
Phase 2: 2026	4,909	1,000 sq. ft.	**8,394**	**643**	**192**	**835**	**247**	**637**	**884**
Phase 3: Complete (2040)	6,150	1,000 sq. ft.	**10,517**	**805**	**241**	**1,046**	**310**	**797**	**1,107**

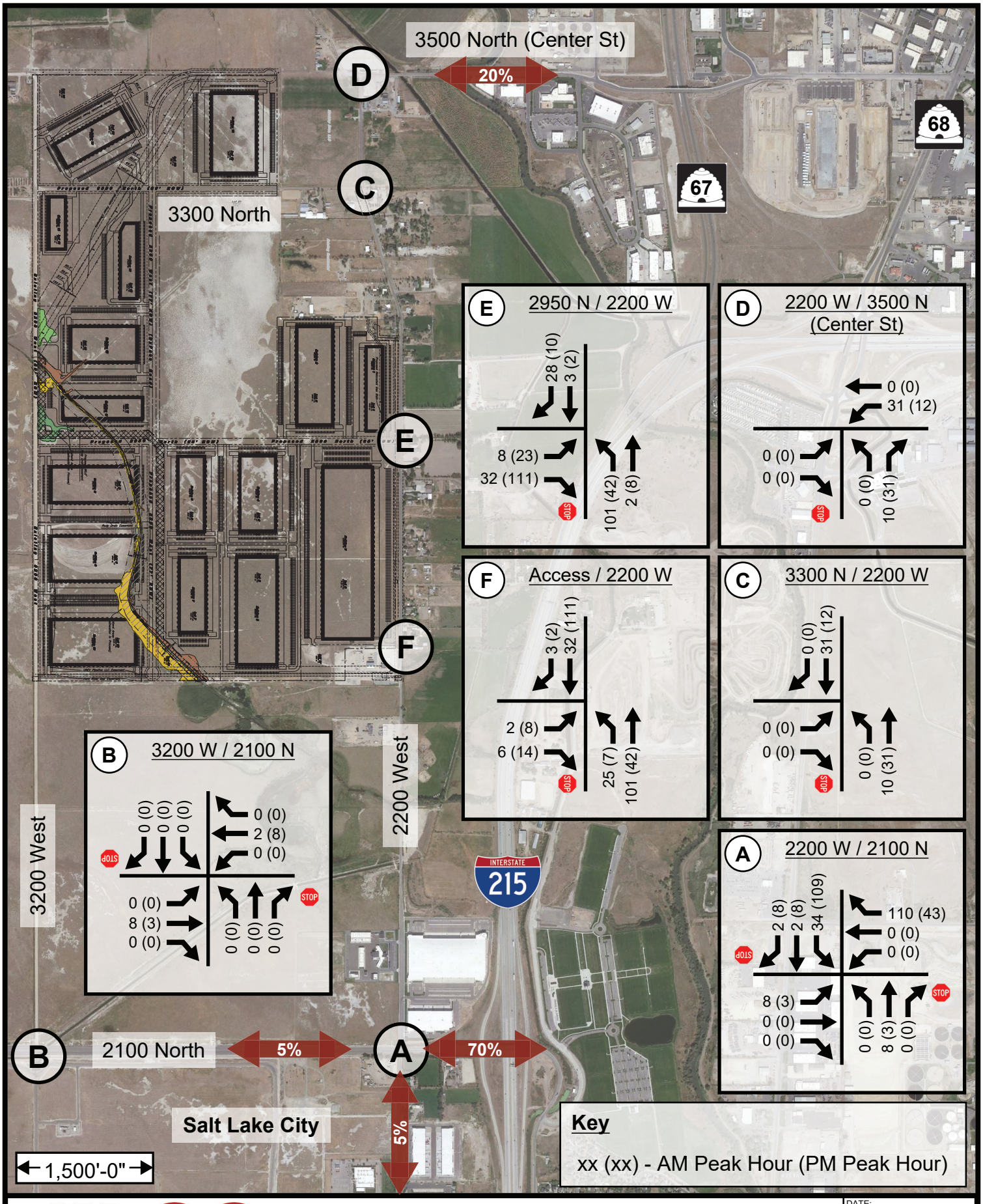
Values rounded to the nearest whole number

To be conservative, no transit or internal capture reductions were used for this analysis.

Project traffic from ***Table 4*** was assigned to the roadway network based on the type of trip and the proximity of Project access points to regional roadways and major population/employment centers. Existing travel patterns observed during data collection and engineering judgement provided primary guidance to establish distribution percentages. Since the project consists of warehouses, much of the traffic will be trucking, and will flow to/from the freeway. The trip distribution for the project was estimated as follows:

- 5% South (via 2200 West)
- 5% West (via 2100 North)
- 20% North (via 2200 West and 3500 North (Center Street))
- 70% East (via 2100 North to I-215)

Traffic was assigned for the opening day (2021) conditions for the Project and is shown in ***Figure 3.***



WALL CONSULTANT GROUP

Opening Day Trip Assignment

Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

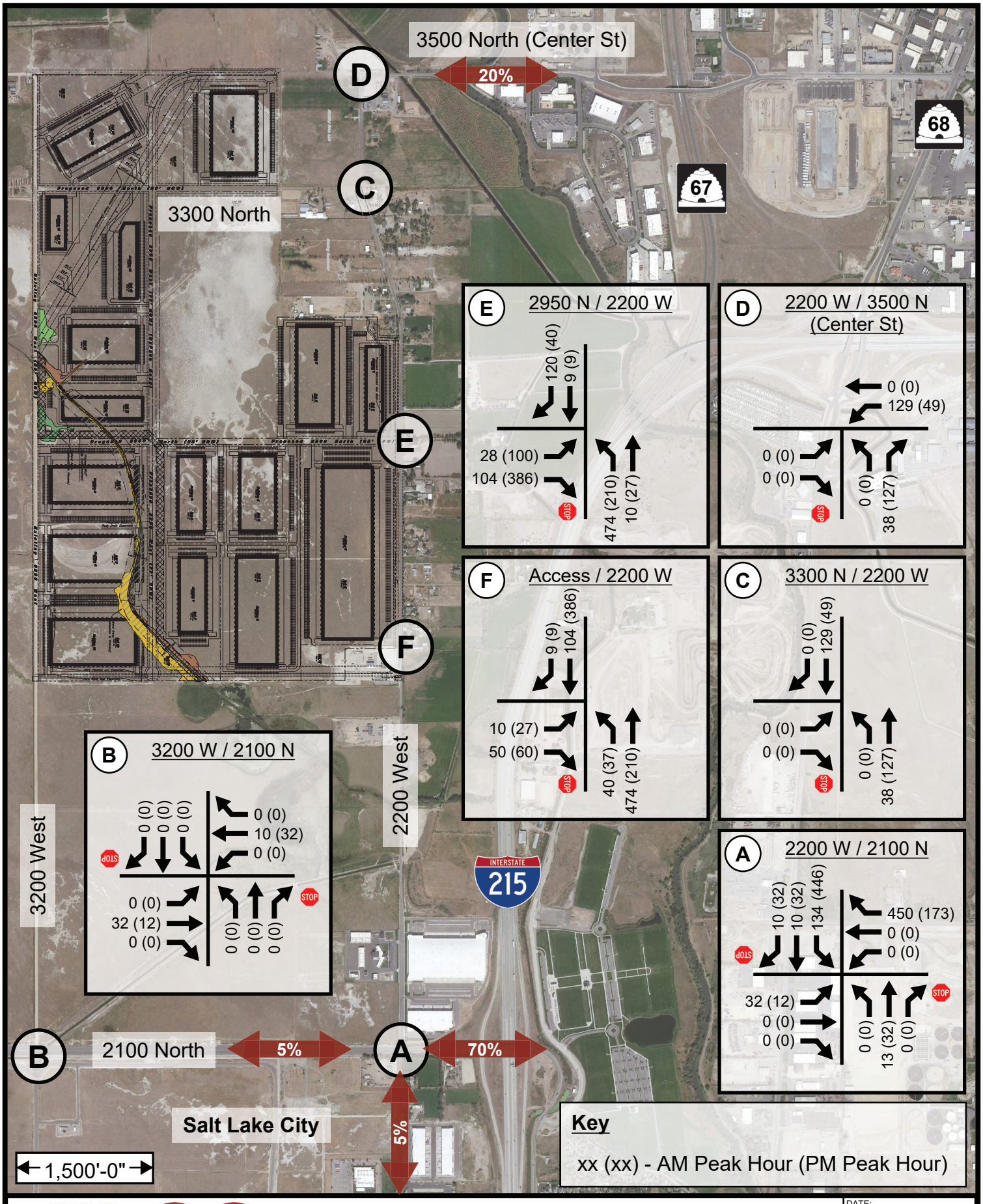
PROJECT: 21-215

Figure #3

Traffic was assigned for the future 2026 conditions for the Project and is shown in ***Figure 4.*** Traffic was assigned for the future 2040 conditions for the Project and is shown in ***Figure 5.***

D. Access

The proposed project includes a new roadway intersection on 2200 West, as well as project access to 2200 West on the south end of the site. Most of the buildings planned in the development have accesses to the internal roadways (2950 North and 2900 West). Access is also planned for 3200 West, once that roadway has been improved.



WALL CONSULTANT GROUP

Future 2026 Trip Assignment

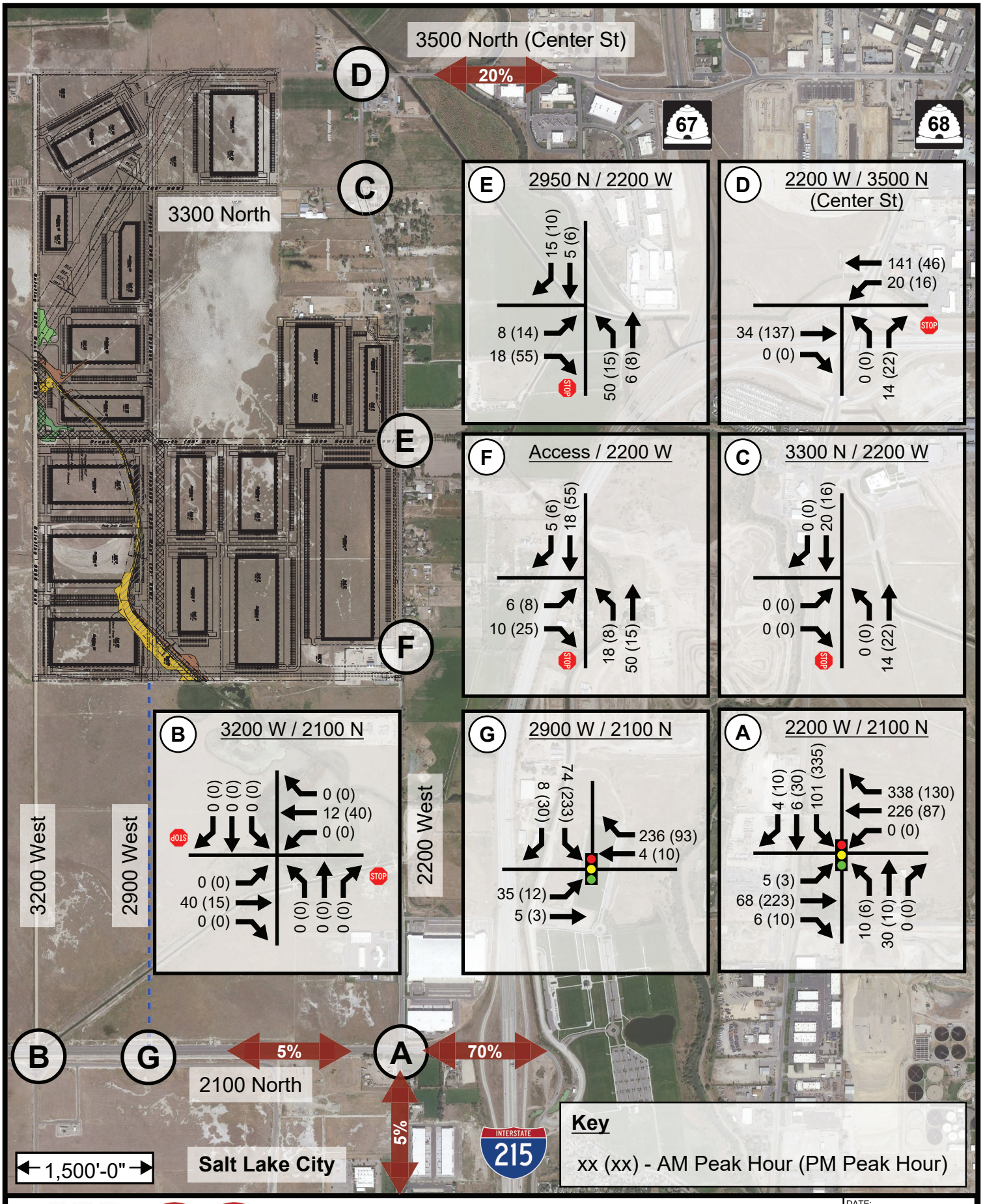
Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

PROJECT: 21-215

Figure #4



WALL CONSULTANT GROUP

Future 2040 Trip Assignment

Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

PROJECT: 21-215

Figure #5

IV. OPENING DAY PLUS PROJECT CONDITIONS

A. Purpose

The opening day project traffic was combined with (2021) background traffic volumes to evaluate the study intersections and determine any potential impacts that are specifically attributed to Project traffic.

B. Project Description

As mentioned in Chapter III Project Conditions, the Project will include 6,150,000 square feet of warehouse. It is anticipated that approximately 1,203,000 square feet will be completed initially. Therefore, the Project is anticipated to add an additional 205 (217) project trips in the AM and (PM) peak hours of traffic respectively, during the opening day conditions. ***Figure 6*** depicts the project traffic distribution and assignment to the roadway network.

C. Roadway Network

In addition to the roadway system described in Chapter II Background Existing Conditions, the project will construct a new roadway through the project site at 2950 North. This will serve as the primary access for the site to 2200 West during opening day conditions. A second access to 2200 West is planned for the south end of the project. No other changes are assumed for the roadway network in opening day conditions.

D. Traffic Volumes

The project traffic (***Figure 3***) was combined with 2021 background traffic volumes (***Figure 2***) to reflect the opening day plus project traffic volumes shown in ***Figure 6***.

E. Level of Service Analysis

WCG determined that most study intersections are anticipated to operate at acceptable levels of service during the AM and PM peak hours, as shown in ***Table 5***. Detailed LOS reports are included in ***Appendix C***.

F. Queuing Analysis

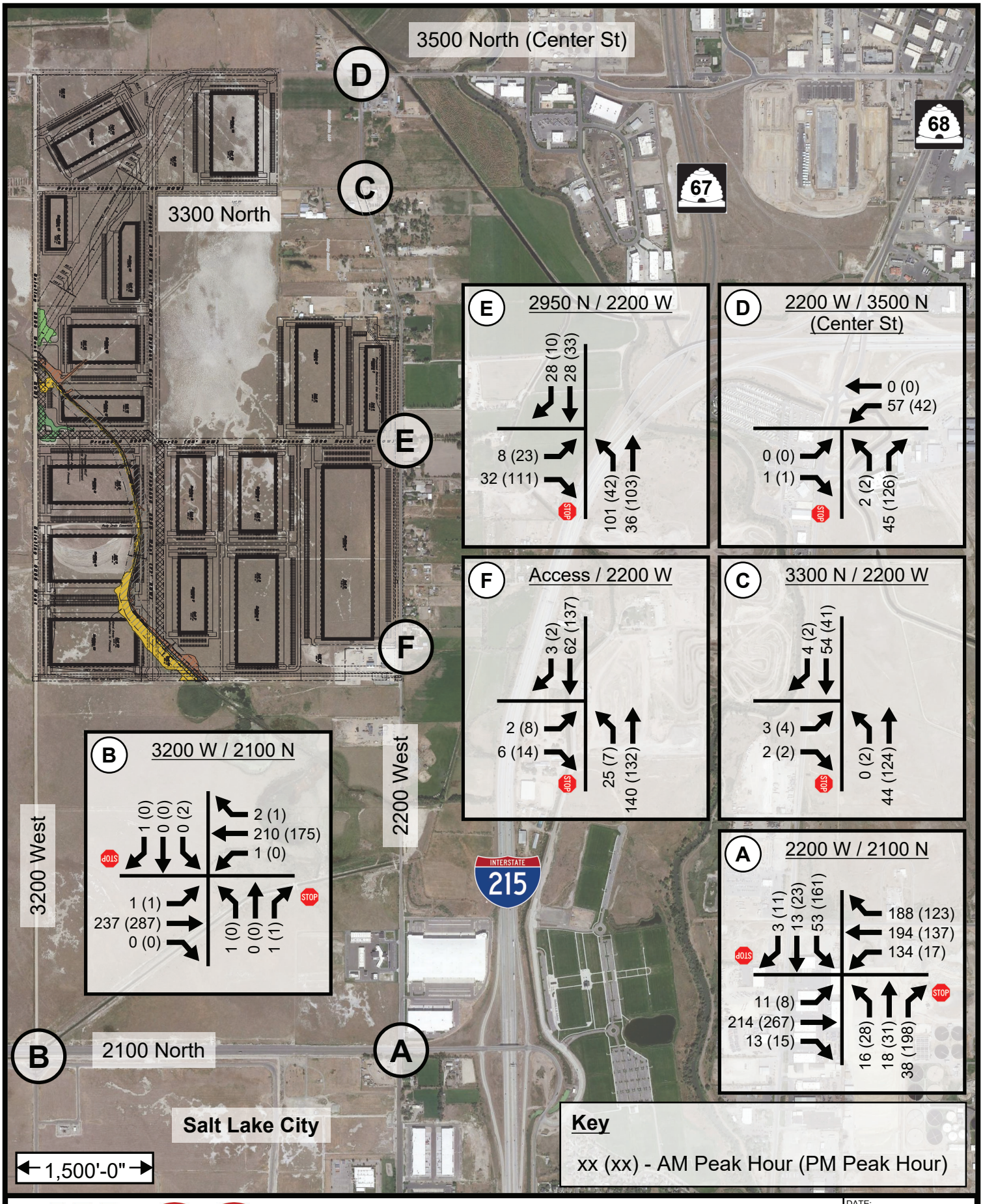
The 95th percentile queue lengths were evaluated for each study intersection. No significant queuing is anticipated to increase from the opening day (2021) background conditions during both the AM and PM peak hours. The full queuing analysis is included in ***Appendix C***.

Table 5: Opening Day (2021) Plus Project Peak Hour Level of Service						
Intersection		**Worst Movement[1]**			**Overall Intersection[2]**	
Intersection	**Control**	**Approach**	**Avg. Delay (Sec / Veh)**	**LOS**	**Avg. Delay (Sec / Veh)**	**LOS**
AM Peak Hour						
2200 West / 2100 North	NB / SB Stop	NB Thru	16.6	C	-	-
3200 West / 2100 North	NB / SB Stop	NB RT	3.6	A	-	-
3300 North / 2200 West	EB Stop	EB LT	4.4	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	EB RT	2.7	A	-	-
2950 North / 2200 West	EB Stop	EB LT	5.8	A	-	-
Access / 2200 West	EB Stop	NB LT	4.8	A	-	-
PM Peak Hour						
2200 West / 2100 North	NB / SB Stop	NB Thru	25.2	D	-	-
3200 West / 2100 North	NB / SB Stop	SB LT	11.4	B	-	-
3300 North / 2200 West	EB Stop	EB LT	4.1	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	NB LT	3.2	A	-	-
2950 North / 2200 West	EB Stop	EB LT	5.4	A	-	-
Access / 2200 West	EB Stop	EB LT	5.0	A	-	-

[1] This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections.
[2] This represents the overall intersection LOS and delay (seconds / vehicle).

G. Mitigation Measures

As shown in ***Table 5***, all intersections and approaches are expected to operate at LOS D or better, meeting LOS standards described in Chapter I. The 95th percentile queue at the 2200 West / 2100 North intersection during the PM peak hour is anticipated to be approximately 250 feet in the northbound direction and 200 feet in the southbound direction. No other significant queuing is expected. No mitigation measures are needed for the existing 2021 plus project conditions.



WALL CONSULTANT GROUP

Opening Day Plus Project Conditions

Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

PROJECT: 21-215

Figure #6

V. FUTURE (2026) BACKGROUND CONDITIONS

A. Purpose

The purpose of the future (2026) background conditions analysis is to evaluate the study intersections and roadways during the morning and evening peak hours of the day under future (2026) background conditions five years from opening day of the Project.

B. Roadway Network

Future 2026 background conditions was assumed to have the same roadway network and access points as the existing (2021) background conditions. It is anticipated that the 2900 West bypass road connection to 2100 North will not be completed by 2026.

C. Traffic Volumes

Future traffic volumes were estimated upon consideration of several sources, including the WFRC travel demand model, historical growth trends, nearby traffic studies, and engineering judgement. Growth rates were established from the existing 2021 conditions and the projected 2030 volumes to calculate the future 2026 background conditions. The total future 2026 background traffic volumes are shown in ***Figure 7***.

D. Level of Service Analysis

WCG determined that all study intersections are anticipated to operate at acceptable levels of service during the AM and PM peak hours, as shown in ***Table 6***. Detailed LOS reports are included in ***Appendix C***.

E. Queuing Analysis

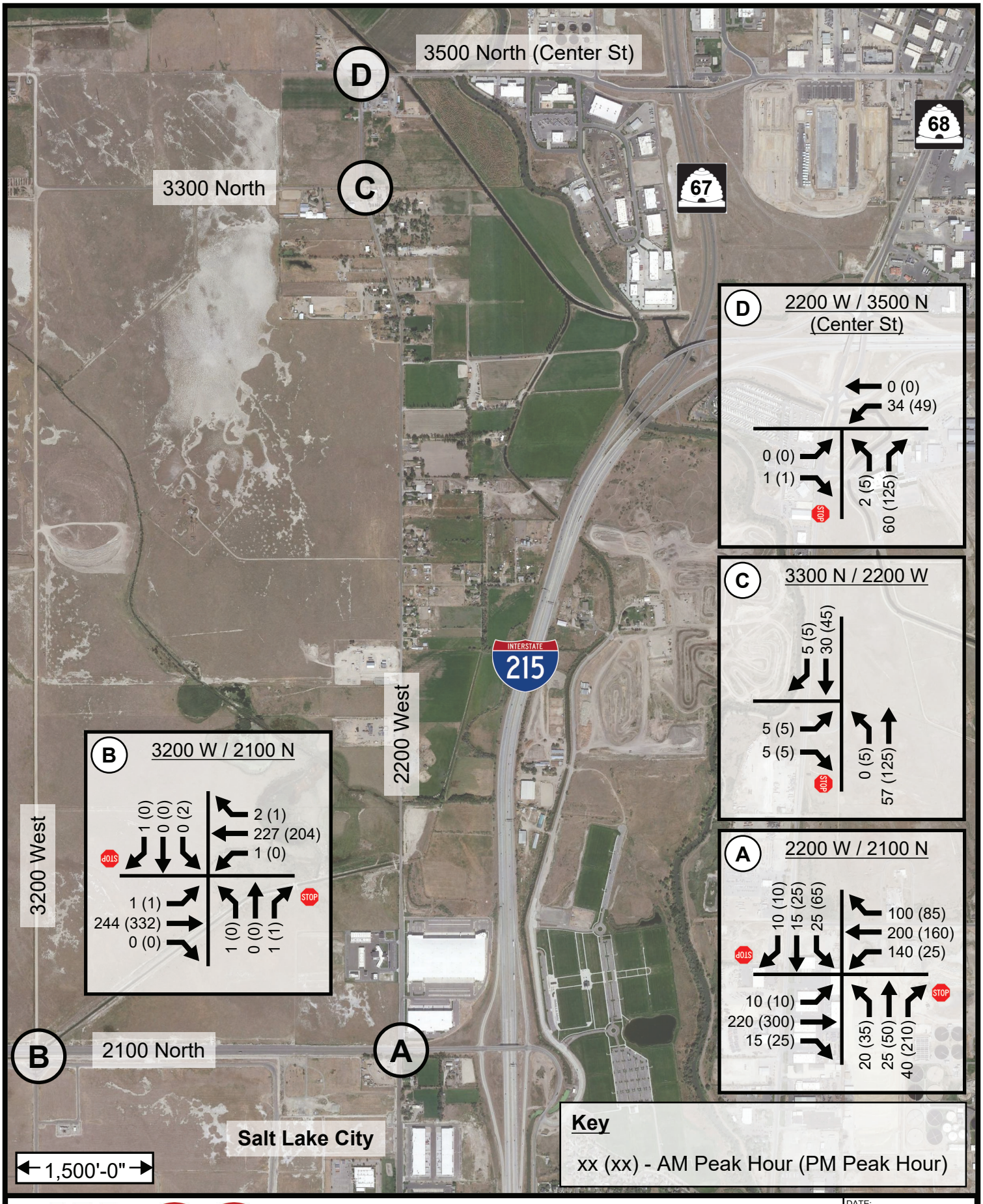
The 95th percentile queue lengths were evaluated for each study intersection. The southbound left / through lane queue from 2200 West to 2100 North is anticipated to be approximately 100 - 120 feet in the AM and PM peak hours. During the PM peak hour, the northbound queuing at the same intersection is anticipated to be approximately 200 feet. Otherwise, no significant queuing is anticipated at the study intersections during either the AM or PM peak hours. The full queuing analysis is included in ***Appendix C***.

F. Mitigation Measures

No mitigation measures are recommended in the future 2026 background conditions.

Table 6: Future Conditions (2026) Background Peak Hour Level of Service						
Intersection		**Worst Movement[1]**			**Overall Intersection[2]**	
Intersection	**Control**	**Approach**	**Avg. Delay (Sec / Veh)**	**LOS**	**Avg. Delay (Sec / Veh)**	**LOS**
AM Peak Hour						
2200 West / 2100 North	NB / SB Stop	SB LT	13.5	B	-	-
3200 West / 2100 North	NB / SB Stop	SB RT	3.1	A	-	-
3300 North / 2200 West	EB Stop	EB LT	3.8	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	EB RT	2.6	A	-	-
PM Peak Hour						
2200 West / 2100 North	NB / SB Stop	SB LT	17.3	C	-	-
3200 West / 2100 North	NB / SB Stop	SB LT	7.8	A	-	-
3300 North / 2200 West	EB Stop	EB LT	4.1	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	EB RT	2.9	A	-	-

[1] This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections.
[2] This represents the overall intersection LOS and delay (seconds / vehicle).



WALL CONSULTANT GROUP

Background 2026 Conditions

Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

PROJECT: 21-215

Figure #7

VI. FUTURE (2026) PLUS PROJECT CONDITIONS

A. Purpose

The purpose of the future (2026) plus project conditions analysis is to evaluate the study intersections and roadways during the morning and evening peak hours of the day with the Project traffic being added to the future (2026) background traffic.

B. Roadway Network

In addition to the roadway system described in Chapter V: Future (2026) Background Conditions, the study area includes the 2950 North roadway through the project that intersects with 2200 West, as well as the proposed access to 2200 West on the south end of the project site.

Due to the high trip generation volumes projected for the project by 2026, the following improvements are recommended at the 2200 West / 2100 North intersection:

- Improve the southbound approach to include a separate right, through, and dual left-turn lanes.
    - Southbound dual left-turn lanes will require two acceptance lanes. It was assumed that one of the acceptance lanes becomes a trap right-turn lane onto southbound I-215 and the other continues across the bridge over I-215.
- Improve the westbound approach to have a dedicated right-turn lane.
- Stripe the northbound approach to include a separate left-turn lane and a shared through / right-turn lane.
- Install a signal.

C. Traffic Volumes

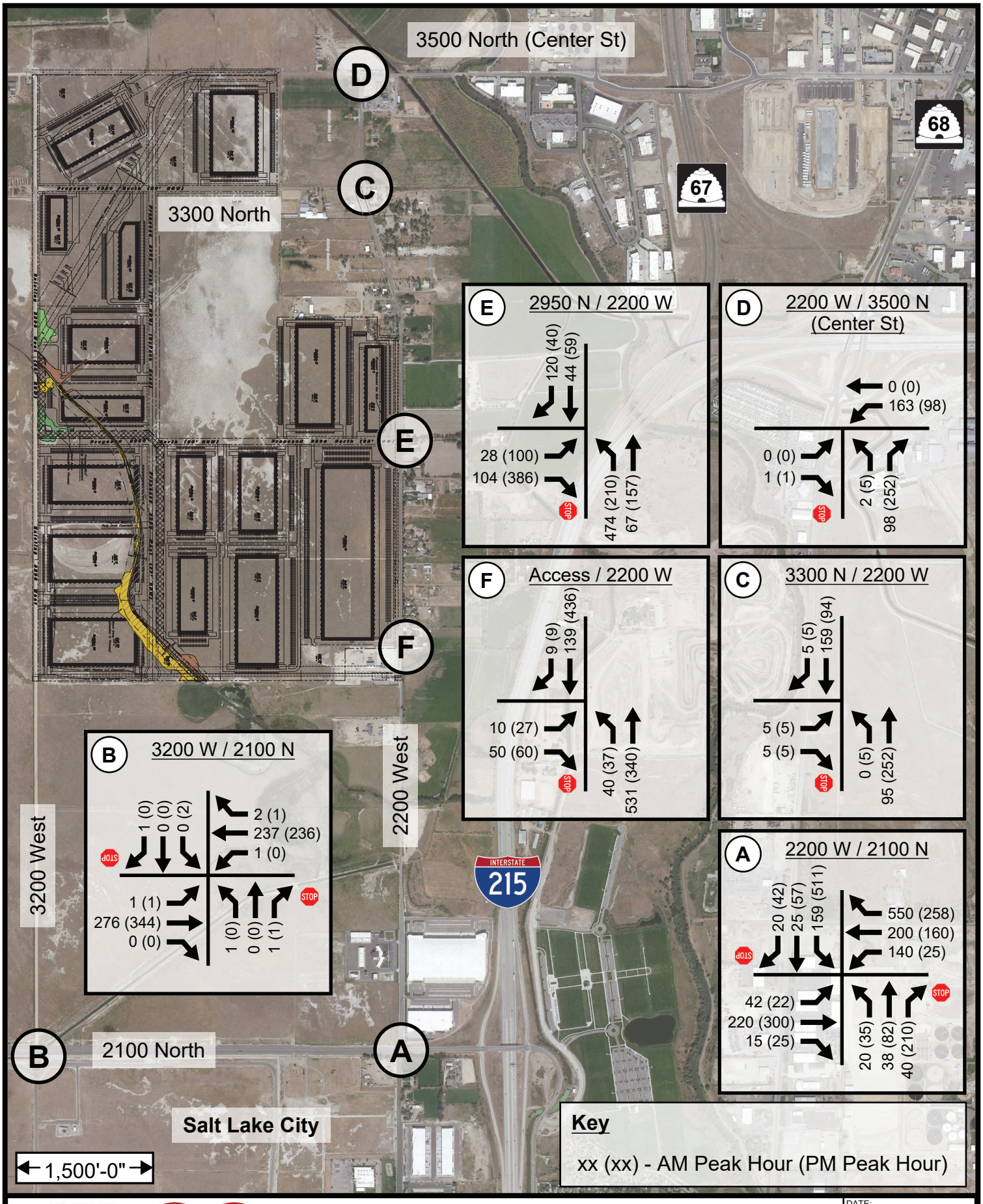
The 2026 project traffic (***Figure 4***) was combined with the future background 2026 background traffic volumes (***Figure 7***) to reflect the future 2026 plus project traffic volumes shown in ***Figure 8***.

D. Level of Service Analysis

WCG determined that with the improvements recommended above, all study intersections are anticipated to operate at acceptable levels of service during the peak hours with the addition of project traffic, as shown in ***Table 7***. Detailed LOS reports are included in ***Appendix C***.

E. Queuing Analysis

The 95th percentile queue lengths were evaluated for each study intersection. Excessive queuing is anticipated in all directions at the failing intersections. The full queuing analysis is included in ***Appendix C***.



WALL CONSULTANT GROUP

Future 2026 Plus Project Conditions

Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

PROJECT: 21-215

Figure #8

Table 7: Future (2026) Plus Project Peak Hour Level of Service						
Intersection		**Worst Movement[1]**			**Overall Intersection[2]**	
Intersection	**Control**	**Approach**	**Avg. Delay (Sec / Veh)**	**LOS**	**Avg. Delay (Sec / Veh)**	**LOS**
AM Peak Hour						
2200 West / 2100 North	Signal	-	-	-	13.0	B
3200 West / 2100 North	NB / SB Stop	WB RT	4.7	A	-	-
3300 North / 2200 West	EB Stop	EB LT	4.9	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	NB LT	3.0	A	-	-
2950 North / 2200 West	EB Stop	EB LT	19.7	C	-	-
Access / 2200 West	EB Stop	EB LT	9.6	A	-	-
PM Peak Hour						
2200 West / 2100 North	Signal	-	-	-	23.8	C
3200 West / 2100 North	NB / SB Stop	SB LT	7.0	A	-	-
3300 North / 2200 West	EB Stop	EB LT	5.1	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	EB RT	2.9	A	-	-
2950 North / 2200 West	EB Stop	EB LT	15.2	C	-	-
Access / 2200 West	EB Stop	EB LT	11.3	B	-	-

[1] This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections.
[2] This represents the overall intersection LOS and delay (seconds / vehicle).

F. Mitigation Measures

With the mitigation measures recommended above, all study intersections are anticipated to operate at acceptable levels of service. Therefore, no additional mitigation measures are recommended.

VII. FUTURE (2040) BACKGROUND CONDITIONS

A. Purpose

The purpose of the future (2040) background conditions analysis is to evaluate the study intersections and roadways during the morning and evening peak hours of the day under future (2040) background conditions twenty years from opening day of the Project.

B. Roadway Network

The future 2040 background conditions will have the same roadway network and access points as the 2026 background conditions. The WFRC long range plan indicates that I-215 will be widened to add an additional lane in each direction by 2040. No other projects are anticipated in or near the study area by 2040.

As recommended previously, the 2100 North / 2200 West is assumed to have a right-turn lane, through lane, and dual left-turn lanes in the southbound direction. The eastbound direction is anticipated to have a left-turn lane, a dedicated through lane, and a shared thru-right turn lane. The westbound direction is anticipated to have a dedicated left-, through, and right-turn lane. The northbound direction is anticipated to have a dedicated left-turn lane and a shared through right-turn lane.

C. Traffic Volumes

Future traffic volumes were estimated upon consideration of several sources, including WFRC travel demand model, historical growth trends, and engineering judgement. The future 2040 background traffic volumes are shown in ***Figure 9***.

D. Level of Service Analysis

WCG determined that all study intersections are anticipated to operate at acceptable levels of service during the AM and PM peak hours, as shown in ***Table 8***. Detailed LOS reports are included in ***Appendix C***.

E. Queuing Analysis

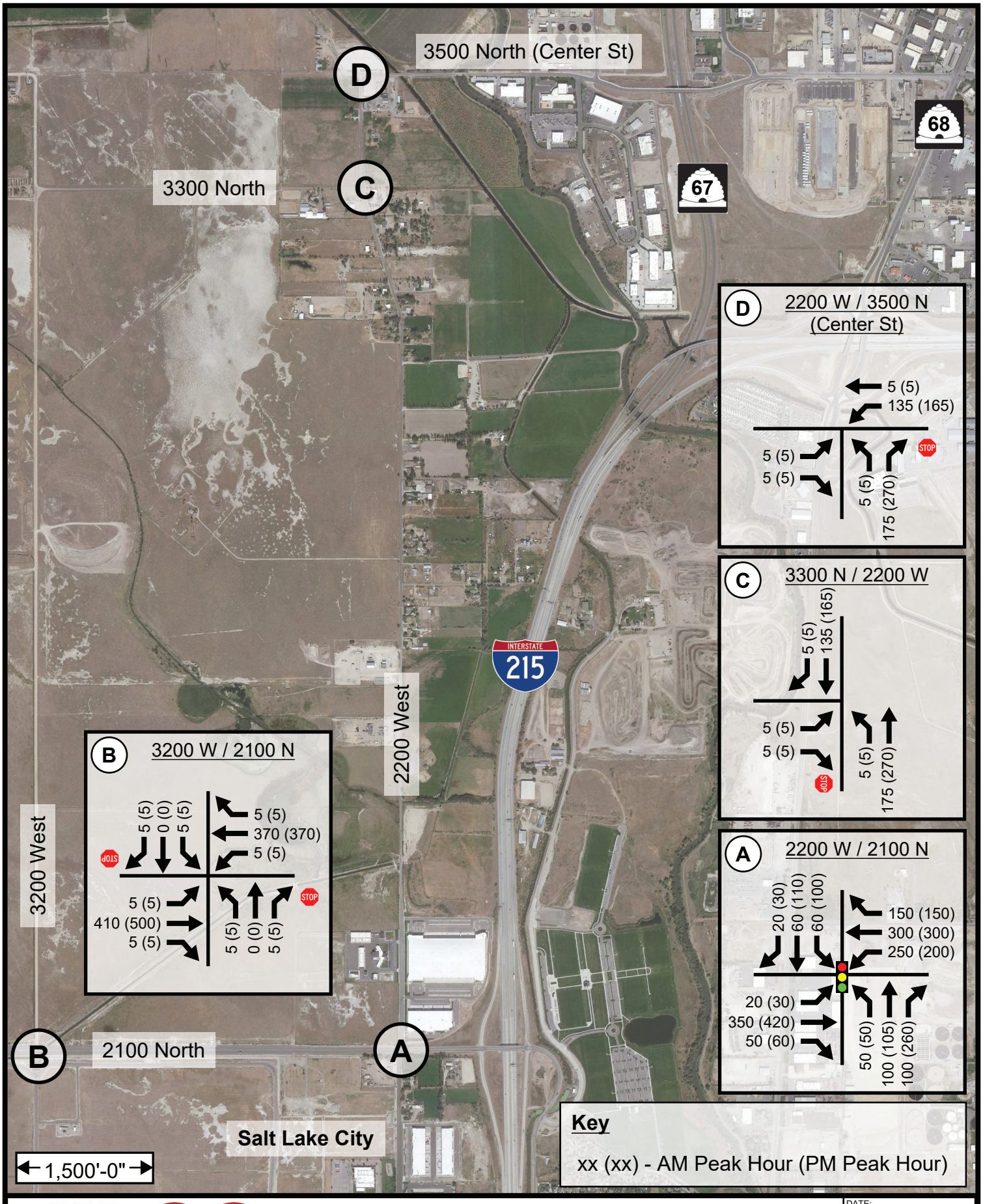
The 95th percentile queue lengths were evaluated for each study intersection. The westbound through queue at the 2100 North / 2200 West intersection is anticipated to be approximately 230 feet in the AM peak hour and 310 feet in the PM peak hour. During the PM peak hour at the same intersection 95th percentile queues are anticipated to be approximately 400 feet long. Otherwise, no significant queuing is anticipated at the study intersections during either the AM or PM peak hours. The full queuing analysis is included in ***Appendix C***.

Table 8: Future Conditions (2040) Background Peak Hour Level of Service						
Intersection		**Worst Movement[1]**			**Overall Intersection[2]**	
Intersection	**Control**	**Approach**	**Avg. Delay (Sec / Veh)**	**LOS**	**Avg. Delay (Sec / Veh)**	**LOS**
AM Peak Hour						
2200 West / 2100 North	Signal	-	-	-	15.9	B
3200 West / 2100 North	NB / SB Stop	NB LT	8.8	A	-	-
3300 North / 2200 West	EB Stop	EB LT	5.6	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	EB Thru	7.0	A	-	-
PM Peak Hour						
2200 West / 2100 North	Signal	-	-	-	22.2	C
3200 West / 2100 North	NB / SB Stop	NB LT	9.6	A	-	-
3300 North / 2200 West	EB Stop	EB LT	5.3	A	-	-
3500 North (Center Street) / 2200 West	EB Stop	EB Thru	7.0	A	-	-

[1] This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections.
[2] This represents the overall intersection LOS and delay (seconds / vehicle).

F. Mitigation Measures

Due to long queues in the northbound direction at the 2100 North / 2200 West intersection, a northbound right-turn pocket is recommended. No additional mitigation measures are recommended.



WALL CONSULTANT GROUP

Background 2040 Conditions

Salt Lake City - Scannell Swaner TIS

N

DATE: 02/04/2022

PROJECT: 21-215

Figure #9

VIII. FUTURE (2040) PLUS PROJECT CONDITIONS

A. Purpose

The purpose of the future (2040) plus project conditions analysis is to evaluate the study intersections and roadways during the morning and evening peak hours of the day with the Project traffic being added to the future (2040) background traffic.

B. Roadway Network

The future (2040) plus project conditions analyzes two different roadway network scenarios. These are outlined below:

Project Traffic Directed to 2200 West – This scenario assumes that the roadway network remains generally as is. Connections to 3200 West and/or 2900 West are not utilized for the proposed project. It is assumed that 2200 West will be improved to a three-lane cross section as planned in the Salt Lake City Transportation Master Plan (which provides left-turn lanes at the project accesses on 2200 West). This scenario assumes that all project traffic will utilize 2200 West to access the project site. The intersection improvements at the 2200 West / 2100 North intersection that were previously recommended are also assumed to be complete.

In addition to the previous intersection improvements at the 2200 West / 2100 North intersection, **it is recommended that the westbound right-turn lane be extended back to the southbound I-215 ramps as an auxiliary lane. In conjunction with this improvement, a westbound right-turn overlap phase is recommended.**

It is also assumed that by 2040, that the 3500 North (Center Street) / 2200 West intersection will be realigned as a T-intersection with free flowing east- and westbound movements. The northbound direction will have a stop sign. 3500 North (Center Street) will extend west into the project site and make a large bend becoming 2900 West.

Project Traffic Split between 2200 West and 2900 West – This scenario assumes that 2900 West is constructed from the project site south to 2100 North. This provides a second primary route to/from the project site. It is assumed that the 2900 West / 2100 North is a signalized T-intersection with separate left- and right-turn lanes. The intersection improvements at the 2200 West / 2100 North intersection that were previously recommended are also assumed to be complete.

This scenario also assumes that by 2040, that the 3500 North (Center Street) / 2200 West intersection will be realigned as a T-intersection with free flowing east- and westbound movements. The northbound direction will have a stop sign. 3500 North (Center Street) will extend west into the project site and make a large bend becoming 2900 West.

C. Traffic Volumes

The project trip assignment shown in ***Figure 5*** was added to the future 2040 background traffic volumes to obtain the future 2040 plus project volumes. The future 2040 plus project traffic volumes are shown in ***Figure 10***. ***Figure 5*** and ***Figure 10*** represent the

Project Traffic Split between 2200 West and 2900 West scenario. For the *Project Traffic Directed to 2200 West* scenario, all project volumes using 2900 West were shifted to 2200 West.

D. Project Traffic Directed to 2200 West - Level of Service Analysis

WCG determined that with all project directed to 2200 West, most study intersections are anticipated to operate at acceptable levels of service during the AM and PM peak hours, as shown in ***Table 9***. Detailed LOS reports are included in ***Appendix C***.

Table 9: Future (2040) Plus Project Peak Hour Level of Service – Project Traffic Directed to 2200 West

Intersection		Worst Movement[1]			Overall Intersection[2]	
Intersection	**Control**	**Approach**	**Avg. Delay (Sec / Veh)**	**LOS**	**Avg. Delay (Sec / Veh)**	**LOS**
AM Peak Hour						
2200 West / 2100 North	Signal	-	-	-	30.6	C
3200 West / 2100 North	NB / SB Stop	NB LT	9.3	A	-	-
3300 North / 2200 West	EB Stop	EB LT	5.7	A	-	-
3500 North (Center Street) / 2200 West	NB Stop	NB LT	8.1	A	-	-
2950 North / 2200 West	EB Stop	NB LT	8.9	A	-	-
Access / 2200 West	EB Stop	EB LT	8.8	A	-	-
PM Peak Hour						
2200 West / 2100 North	Signal	-	-	-	31.4	C
3200 West / 2100 North	NB / SB Stop	NB LT	9.2	A	-	-
3300 North / 2200 West	EB Stop	EB LT	5.7	A	-	-
3500 North (Center Street) / 2200 West	NB Stop	NB LT	11.9	B	-	-
2950 North / 2200 West	EB Stop	EB RT	8.9	A	-	-
Access / 2200 West	EB Stop	EB LT	12.0	B	-	-

[1] This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections.
[2] This represents the overall intersection LOS and delay (seconds / vehicle).

E. Project Traffic Directed to 2200 West - Queuing Analysis

The 95th percentile queue lengths were evaluated for each study intersection. The 95th percentile queues in the westbound direction at the 2200 West / 2100 North intersection are anticipated to be approximately 760 feet long during the AM peak hour. The 95th percentile queues in the southbound direction at the 2200 West / 2100 North intersection are anticipated to be approximately 550 feet long during the PM peak hour. Otherwise, no significant queuing is anticipated at the study intersections during either the AM or PM peak hours. The full queuing analysis is included in ***Appendix C***.

F. Project Traffic Directed to 2200 West - Mitigation Measures

As recommended previously, it is recommended that the westbound right-turn lane be extended back to the southbound I-215 ramps as an auxiliary lane. In conjunction with this improvement, a westbound right-turn overlap phase is recommended. With these improvements, all study intersections are anticipated to operate at acceptable levels of service as shown in ***Table 9.***

G. Project Traffic Split between 2900 West and 2200 West - Level of Service Analysis

WCG also analyzed an alternative with a connection at 2900 West from the project site to 2100 North. WCG determined that with the 2900 West connection, all study intersections are anticipated to operate at acceptable levels of service during the AM and PM peak hours, as shown in ***Table 10***. Detailed LOS reports are included in ***Appendix C***.

H. Project Traffic Split between 2900 West and 2200 West - Queuing Analysis

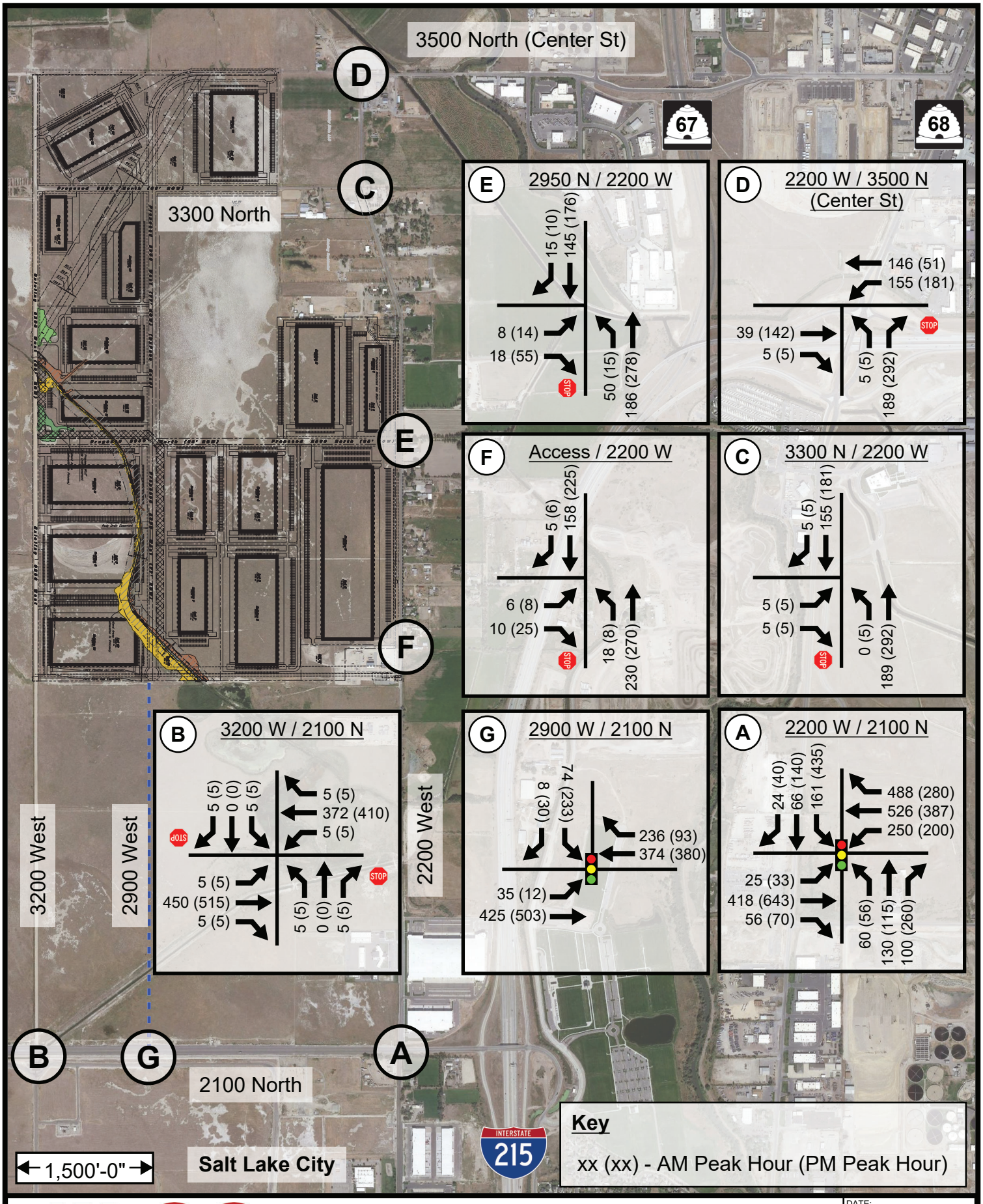
The 95th percentile queue lengths were evaluated for each study intersection. The 95th percentile queues are anticipated to reach the southbound I-215 ramps during the AM peak hour. Otherwise, no significant queuing is anticipated at the study intersections during either the AM or PM peak hours. The full queuing analysis is included in ***Appendix C***.

I. Project Traffic Split between 2900 West and 2200 West - Mitigation Measures

Due to long westbound queues at the 2200 West / 2100 North intersection, it is recommended that the westbound right-turn pocket be extended. This could be extended to the southbound I-215 ramp as an auxiliary lane.

Table 10: Future (2040) Plus Project Peak Hour Level of Service – Project Traffic Split between 2900 West and 2200 West						
Intersection		**Worst Movement[1]**			**Overall Intersection[2]**	
Intersection	**Control**	**Approach**	**Avg. Delay (Sec / Veh)**	**LOS**	**Avg. Delay (Sec / Veh)**	**LOS**
AM Peak Hour						
2200 West / 2100 North	Signal	-	-	-	26.4	C
3200 West / 2100 North	NB / SB Stop	NB LT	9.4	A	-	-
3300 North / 2200 West	EB Stop	EB LT	5.6	A	-	-
3500 North (Center Street) / 2200 West	NB Stop	NB LT	8.3	A	-	-
2950 North / 2200 West	EB Stop	EB LT	5.6	A	-	-
Access / 2200 West	EB Stop	EB LT	5.8	A	-	-
2900 West / 2100 North	Signal	-	-	-	26.7	C
PM Peak Hour						
2200 West / 2100 North	Signal	-	-	-	31.1	C
3200 West / 2100 North	NB / SB Stop	SB LT	8.1	A	-	-
3300 North / 2200 West	EB Stop	EB LT	5.5	A	-	-
3500 North (Center Street) / 2200 West	NB Stop	NB RT	10.5	B	-	-
2950 North / 2200 West	EB Stop	EB LT	6.0	A	-	-
Access / 2200 West	EB Stop	EB LT	6.1	A	-	-
2900 West / 2100 North	Signal	-	-	-	18.1	B

[1] This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections.
[2] This represents the overall intersection LOS and delay (seconds / vehicle).



WALL CONSULTANT GROUP

Future 2040 Plus Project

Salt Lake City - Scannell Swaner TIS

N

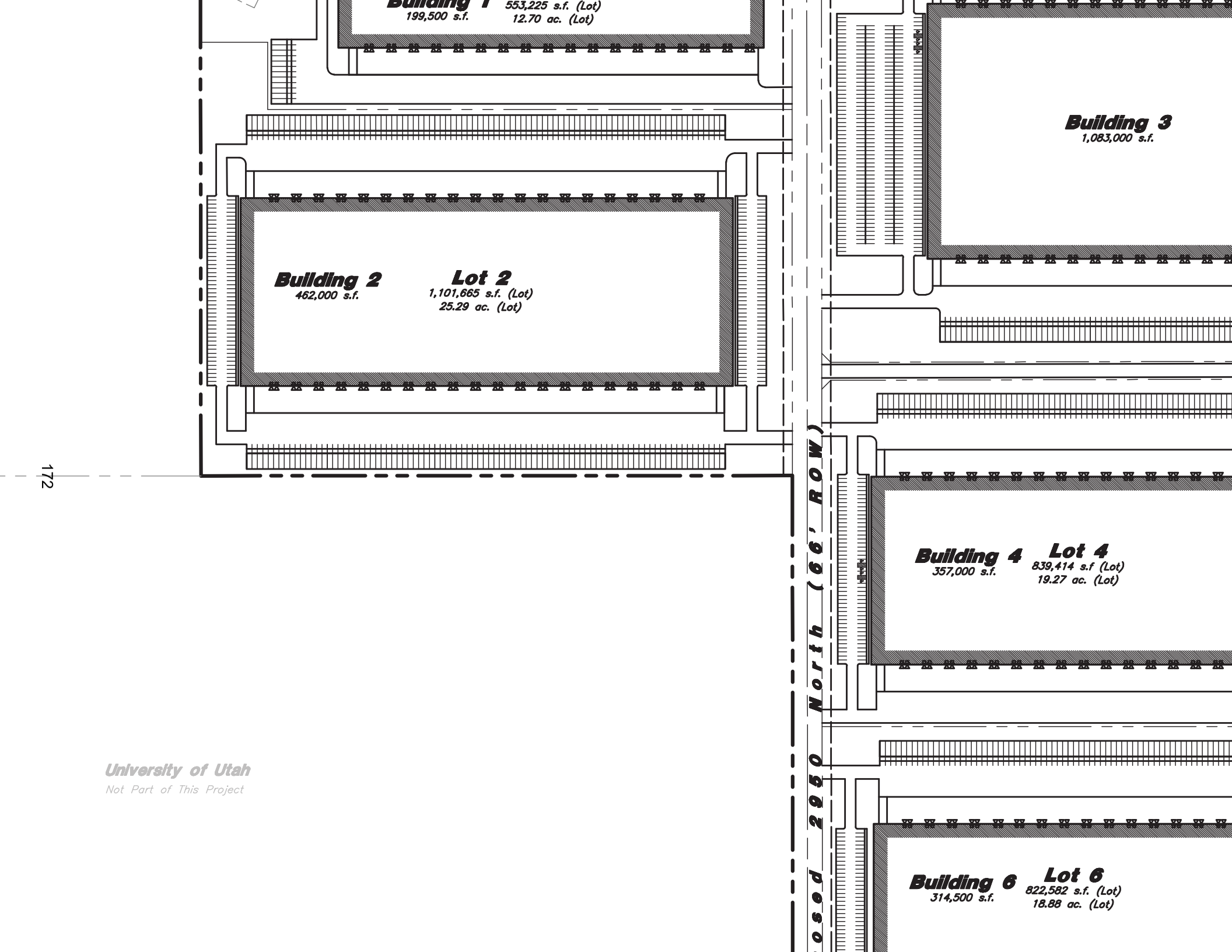
DATE: 02/04/2022

PROJECT: 21-215

Figure #10

IX. APPENDICES

APPENDIX A: CONCEPTUAL LAND USE PLAN


Building 1
199,500 s.f.
553,225 s.f. (Lot)
12.70 ac. (Lot)
Building 3
1,083,000 s.f.
Building 2
462,000 s.f.
Lot 2
1,101,665 s.f. (Lot)
25.29 ac. (Lot)
172
Building 4
357,000 s.f.
Lot 4
839,414 s.f (Lot)
19.27 ac. (Lot)
Building 6
314,500 s.f.
Lot 6
822,582 s.f. (Lot)
18.88 ac. (Lot)
University of Utah
Not Part of This Project


Lot 11
852,617 s.f. (Lot)
14.98 ac. (Lot)
Lot 10
1,035,907 s.f. (Lot)
23.78 ac. (Lot)
Lot 9
1,069,983 s.f. (Lot)
24.56 ac. (Lot)
Lot 8
1,072,443 s.f. (Lot)
24.62 ac. (Lot)
Lot 6
822,582 s.f. (Lot)
18.88 ac. (Lot)
Lot 4
839,414 s.f. (Lot)
19.27 ac. (Lot)
Lot 7
1,041,273 s.f. (Lot)
23.90 ac. (Lot)
Lot 5
1,351,094 s.f. (Lot)
31.02 ac. (Lot)
Lot 3
2,251,815 s.f. (Lot)
51.69 ac. (Lot)
Lot 2
1,101,665 s.f. (Lot)
25.29 ac. (Lot)
Lot 1
553,225 s.f. (Lot)
12.70 ac. (Lot)
Lot 17
212,893 s.f.
4.89 ac.
2050 North
2200 West
2000 West
Rudy Drain
Relocated Rudy Drain
Future Roadway
Bypass Road

APPENDIX B: TRAFFIC COUNTS

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 2200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 1

Groups Printed- General Traffic - Turns

	2200 West From North					2100 North From East					2200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	1	5	0	6	16	35	49	0	100	11	0	3	0	14	5	83	2	2	92	212
07:15 AM	0	2	5	0	7	13	42	35	0	90	10	2	1	0	13	2	48	0	0	50	160
07:30 AM	0	4	2	0	6	13	62	28	0	103	6	0	2	0	8	2	49	0	0	51	168
07:45 AM	1	4	7	0	12	36	55	22	0	113	11	8	10	0	29	4	34	1	0	39	193
Total	1	11	19	0	31	78	194	134	0	406	38	10	16	0	64	13	214	3	2	232	733
08:00 AM	1	5	5	0	11	22	41	32	0	95	9	3	6	0	18	1	36	1	0	38	162
08:15 AM	1	8	10	0	19	8	45	28	0	81	13	4	5	0	22	10	42	0	0	52	174
08:30 AM	1	5	7	0	13	7	43	29	0	79	3	1	2	0	6	5	27	0	0	32	130
08:45 AM	0	1	4	0	5	4	41	33	0	78	7	1	4	0	12	1	22	0	0	23	118
Total	3	19	26	0	48	41	170	122	0	333	32	9	17	0	58	17	127	1	0	145	584

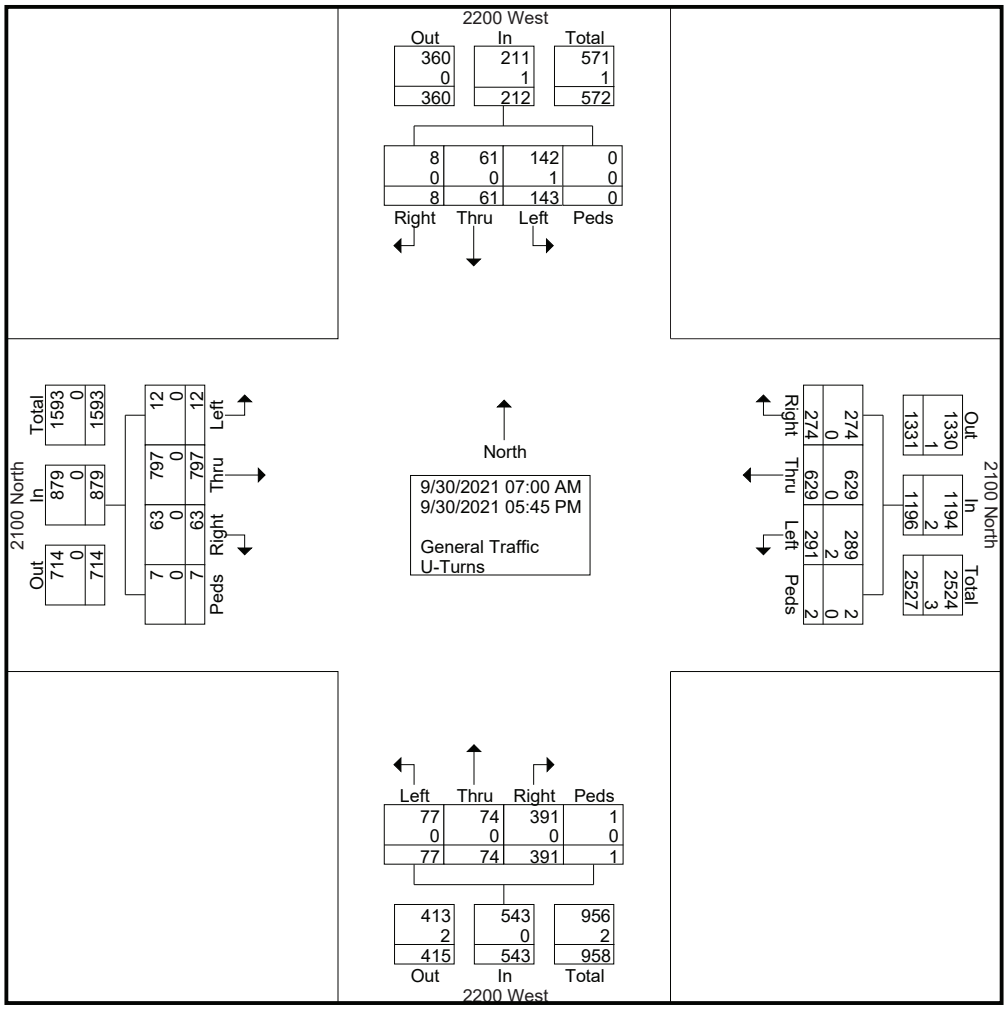
04:00 PM	0	6	14	0	20	25	34	5	0	64	60	6	4	1	71	5	52	1	0	58	213
04:15 PM	2	5	13	0	20	20	29	4	0	53	59	9	3	0	71	2	49	1	0	52	196
04:30 PM	0	4	20	0	24	17	27	3	0	47	53	8	8	0	69	5	53	2	1	61	201
04:45 PM	1	1	12	0	14	19	49	8	1	77	34	7	10	0	51	1	32	1	0	34	176
Total	3	16	59	0	78	81	139	20	1	241	206	30	25	1	262	13	186	5	1	205	786
05:00 PM	0	5	7	0	12	24	32	2	0	58	52	4	7	0	63	7	76	1	3	87	220
05:15 PM	0	1	16	0	17	25	31	5	1	62	26	6	1	0	33	6	56	1	0	63	175
05:30 PM	0	5	13	0	18	13	26	3	0	42	20	11	4	0	35	3	87	1	1	92	187
05:45 PM	1	4	3	0	8	12	37	5	0	54	17	4	7	0	28	4	51	0	0	55	145
Total	1	15	39	0	55	74	126	15	1	216	115	25	19	0	159	20	270	3	4	297	727
Grand Total	8	61	143	0	212	274	629	291	2	1196	391	74	77	1	543	63	797	12	7	879	2830
Apprch %	3.8	28.8	67.5	0		22.9	52.6	24.3	0.2		72	13.6	14.2	0.2		7.2	90.7	1.4	0.8		
Total %	0.3	2.2	5.1	0	7.5	9.7	22.2	10.3	0.1	42.3	13.8	2.6	2.7	0	19.2	2.2	28.2	0.4	0.2	31.1	
General Traffic	8	61	142	0	211	274	629	289	2	1194	391	74	77	1	543	63	797	12	7	879	2827
% General Traffic	100	100	99.3	0	99.5	100	100	99.3	100	99.8	100	100	100	100	100	100	100	100	100	100	99.9
U-Turns	0	0	1	0	1	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	3
% U-Turns	0	0	0.7	0	0.5	0	0	0.7	0	0.2	0	0	0	0	0	0	0	0	0	0	0.1

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 2200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 2



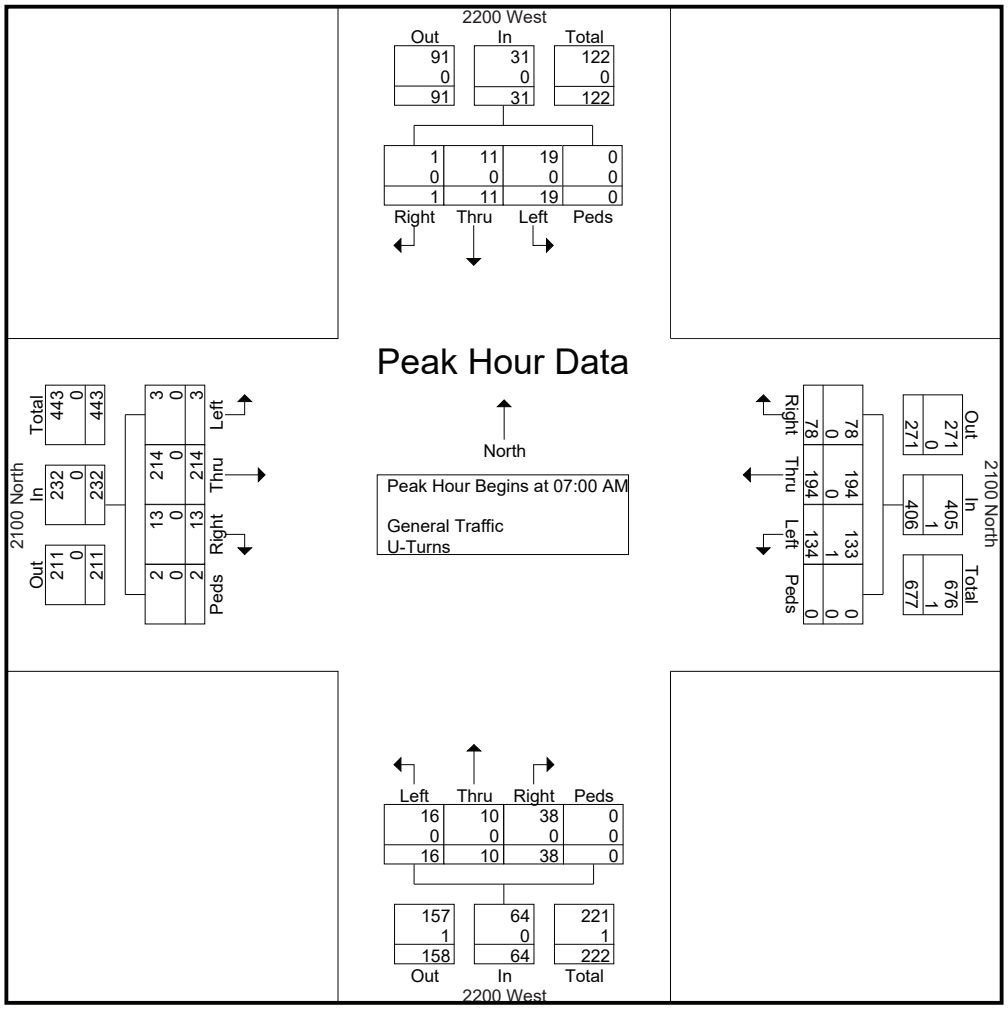
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 2200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 3

	2200 West From North					2100 North From East					2200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	1	5	0	6	16	35	**49**	0	100	**11**	0	3	0	14	**5**	**83**	**2**	**2**	**92**	**212**
07:15 AM	0	2	5	0	7	13	42	35	0	90	10	2	1	0	13	2	48	0	0	50	160
07:30 AM	0	**4**	2	0	6	13	**62**	28	0	103	6	0	2	0	8	2	49	0	0	51	168
07:45 AM	**1**	4	**7**	0	**12**	**36**	55	22	0	**113**	11	**8**	**10**	0	**29**	4	34	1	0	39	193
Total Volume	1	11	19	0	31	78	194	134	0	406	38	10	16	0	64	13	214	3	2	232	733
% App. Total	3.2	35.5	61.3	0		19.2	47.8	33	0		59.4	15.6	25	0		5.6	92.2	1.3	0.9		
PHF	.250	.688	.679	.000	.646	.542	.782	.684	.000	.898	.864	.313	.400	.000	.552	.650	.645	.375	.250	.630	.864
General Traffic	1	11	19	0	31	78	194	133	0	405	38	10	16	0	64	13	214	3	2	232	732
% General Traffic	100	100	100	0	100	100	100	99.3	0	99.8	100	100	100	0	100	100	100	100	100	100	99.9
U-Turns	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% U-Turns	0	0	0	0	0	0	0	0.7	0	0.2	0	0	0	0	0	0	0	0	0	0	0.1



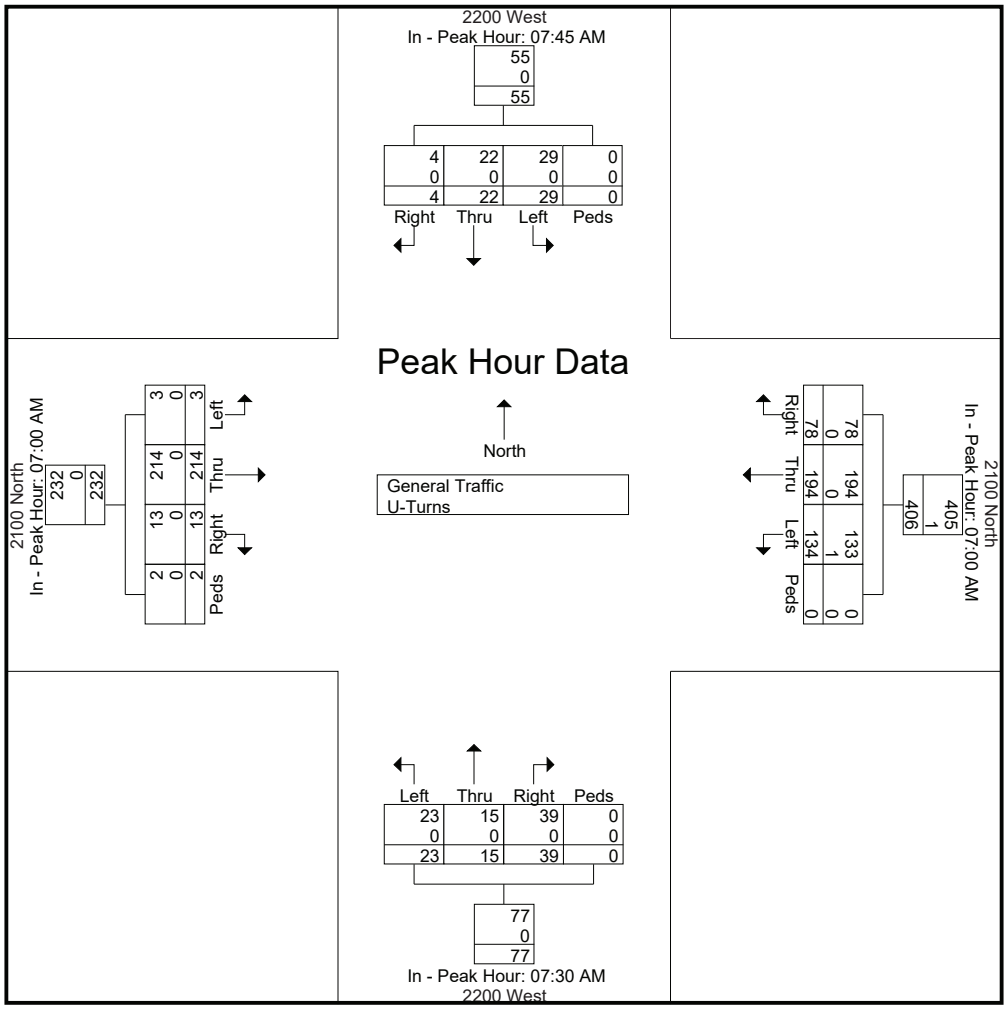
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 2200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 4

	2200 West From North					2100 North From East					2200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45 AM					07:00 AM					07:30 AM					07:00 AM					
+0 mins.	**1**	4	7	0	12	16	35	**49**	0	100	6	0	2	0	8	**5**	**83**	**2**	**2**	**92**	
+15 mins.	1	5	5	0	11	13	42	35	0	90	11	**8**	**10**	0	**29**	2	48	0	0	50	
+30 mins.	1	**8**	**10**	0	**19**	13	**62**	28	0	103	9	3	6	0	18	2	49	0	0	51	
+45 mins.	1	5	7	0	13	**36**	55	22	0	**113**	**13**	4	5	0	22	4	34	1	0	39	
Total Volume	4	22	29	0	55	78	194	134	0	406	39	15	23	0	77	13	214	3	2	232	
% App. Total	7.3	40	52.7	0		19.2	47.8	33	0		50.6	19.5	29.9	0		5.6	92.2	1.3	0.9		
PHF	1.000	.688	.725	.000	.724	.542	.782	.684	.000	.898	.750	.469	.575	.000	.664	.650	.645	.375	.250	.630	
General Traffic	4	22	29	0	55	78	194	133	0	405	39	15	23	0	77	13	214	3	2	232	
% General Traffic	100	100	100	0	100	100	100	99.3	0	99.8	100	100	100	0	100	100	100	100	100	100	
U-Turns	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	
% U-Turns	0	0	0	0	0	0	0	0.7	0	0.2	0	0	0	0	0	0	0	0	0	0	



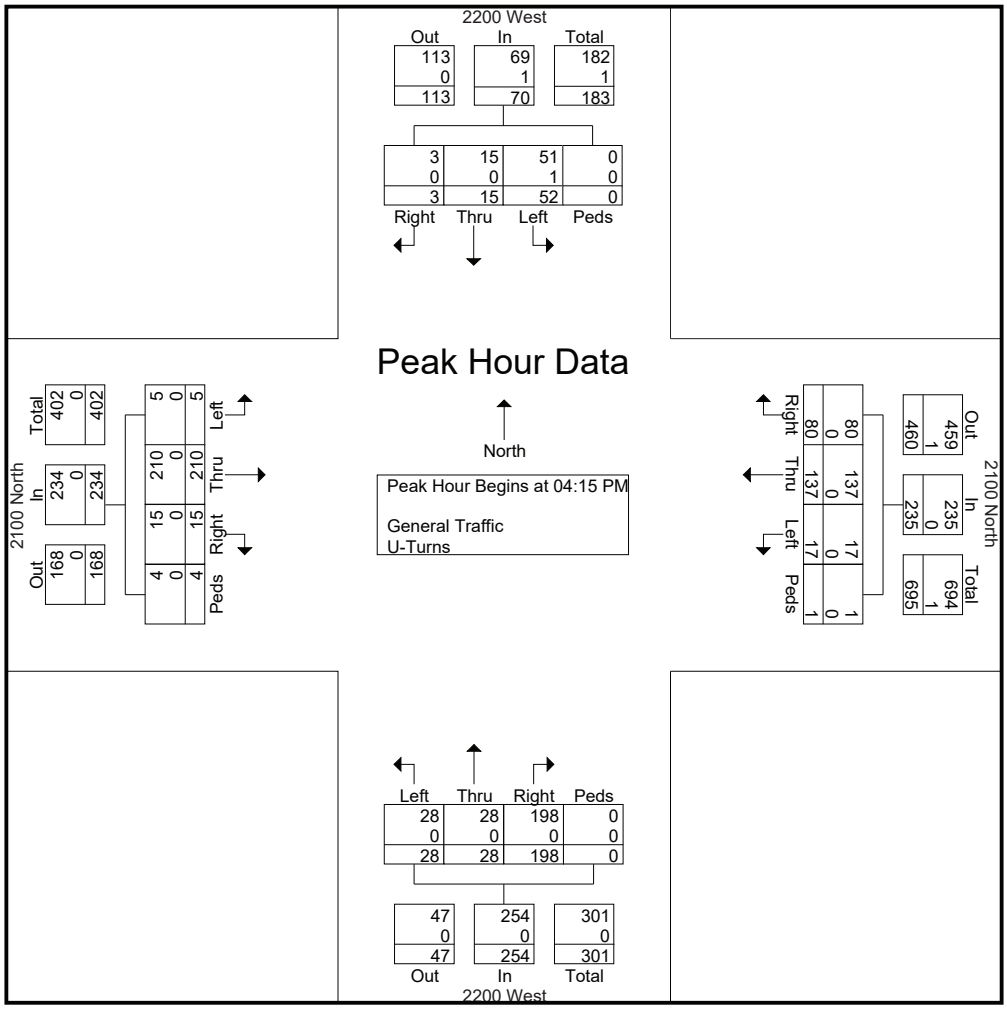
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 2200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 5

	2200 West From North					2100 North From East					2200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**2**	**5**	13	0	20	20	29	4	0	53	**59**	**9**	3	0	**71**	2	49	1	0	52	196
04:30 PM	0	4	**20**	0	**24**	17	27	3	0	47	53	8	8	0	69	5	53	**2**	1	61	201
04:45 PM	1	1	12	0	14	19	**49**	**8**	**1**	**77**	34	7	**10**	0	51	1	32	1	0	34	176
05:00 PM	0	5	7	0	12	**24**	32	2	0	58	52	4	7	0	63	**7**	**76**	1	**3**	**87**	**220**
Total Volume	3	15	52	0	70	80	137	17	1	235	198	28	28	0	254	15	210	5	4	234	793
% App. Total	4.3	21.4	74.3	0		34	58.3	7.2	0.4		78	11	11	0		6.4	89.7	2.1	1.7		
PHF	.375	.750	.650	.000	.729	.833	.699	.531	.250	.763	.839	.778	.700	.000	.894	.536	.691	.625	.333	.672	.901
General Traffic	3	15	51	0	69	80	137	17	1	235	198	28	28	0	254	15	210	5	4	234	792
% General Traffic	100	100	98.1	0	98.6	100	100	100	100	100	100	100	100	0	100	100	100	100	100	100	99.9
U-Turns	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% U-Turns	0	0	1.9	0	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1



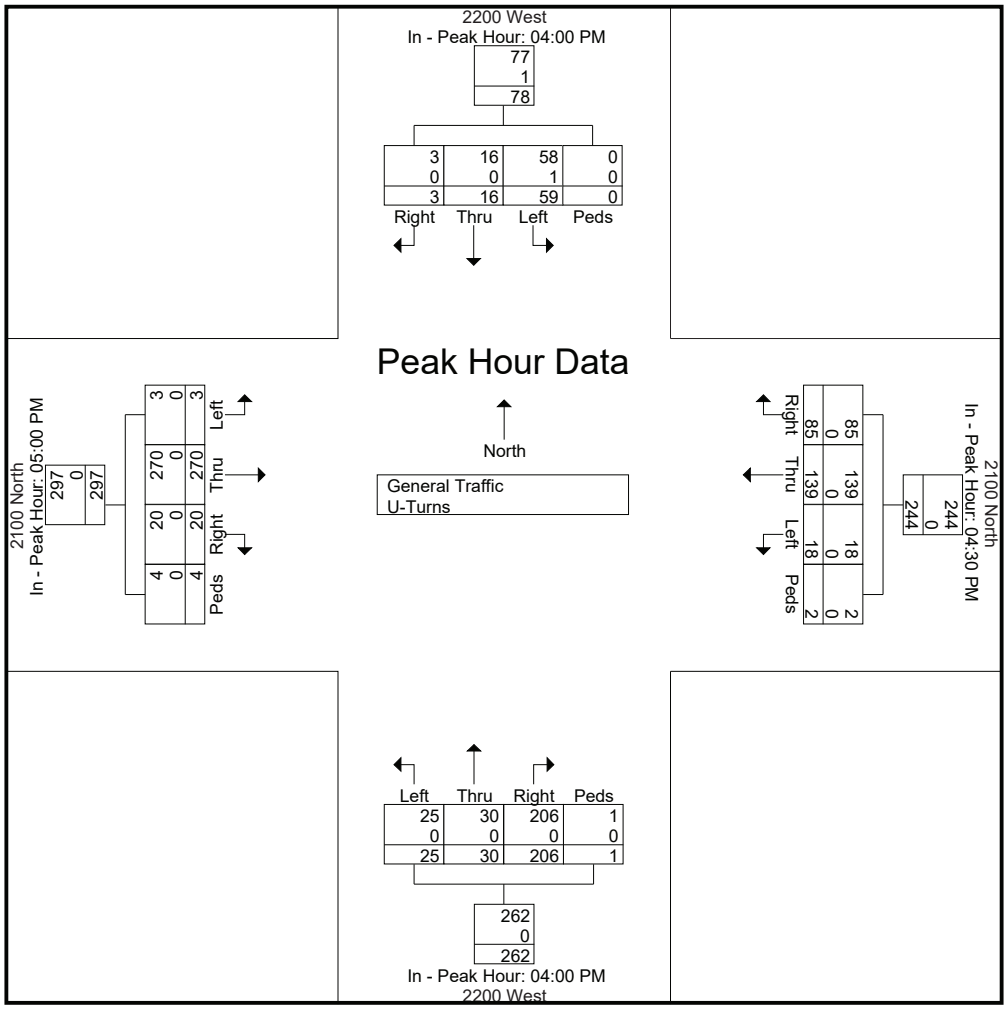
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 2200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 6

	2200 West From North					2100 North From East					2200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:00 PM					04:30 PM					04:00 PM					05:00 PM					
+0 mins.	0	**6**	14	0	20	17	27	3	0	47	**60**	6	4	**1**	**71**	**7**	76	**1**	**3**	87	
+15 mins.	**2**	5	13	0	20	19	**49**	**8**	**1**	**77**	59	**9**	3	0	71	6	56	1	0	63	
+30 mins.	0	4	**20**	0	**24**	24	32	2	0	58	53	8	8	0	69	3	**87**	1	1	**92**	
+45 mins.	1	1	12	0	14	**25**	31	5	1	62	34	7	**10**	0	51	4	51	0	0	55	
Total Volume	3	16	59	0	78	85	139	18	2	244	206	30	25	1	262	20	270	3	4	297	
% App. Total	3.8	20.5	75.6	0		34.8	57	7.4	0.8		78.6	11.5	9.5	0.4		6.7	90.9	1	1.3		
PHF	.375	.667	.738	.000	.813	.850	.709	.563	.500	.792	.858	.833	.625	.250	.923	.714	.776	.750	.333	.807	
General Traffic	3	16	58	0	77	85	139	18	2	244	206	30	25	1	262	20	270	3	4	297	
% General Traffic	100	100	98.3	0	98.7	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
U-Turns	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% U-Turns	0	0	1.7	0	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 2200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 7

Image 1

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 3200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 3200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 1

Groups Printed- General Traffic

	3200 West From North					2100 North From East					3200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	1	1	1	38	0	0	39	0	0	0	0	0	0	83	0	0	83	123
07:15 AM	0	0	0	0	0	1	42	0	0	43	0	0	0	0	0	0	55	0	0	55	98
07:30 AM	1	0	0	0	1	0	64	1	0	65	0	0	0	0	0	0	49	1	0	50	116
07:45 AM	0	0	0	0	0	0	64	0	0	64	0	0	1	0	1	0	35	0	0	35	100
Total	1	0	0	1	2	2	208	1	0	211	0	0	1	0	1	0	222	1	0	223	437
08:00 AM	1	0	0	0	1	0	48	1	0	49	0	1	0	0	1	0	42	0	0	42	93
08:15 AM	0	0	0	0	0	1	47	0	0	48	0	0	0	0	0	0	48	0	0	48	96
08:30 AM	0	0	1	0	1	0	44	0	0	44	0	0	0	0	0	0	28	0	0	28	73
08:45 AM	1	0	0	0	1	1	45	0	0	46	0	0	0	0	0	0	24	0	0	24	71
Total	2	0	1	0	3	2	184	1	0	187	0	1	0	0	1	0	142	0	0	142	333

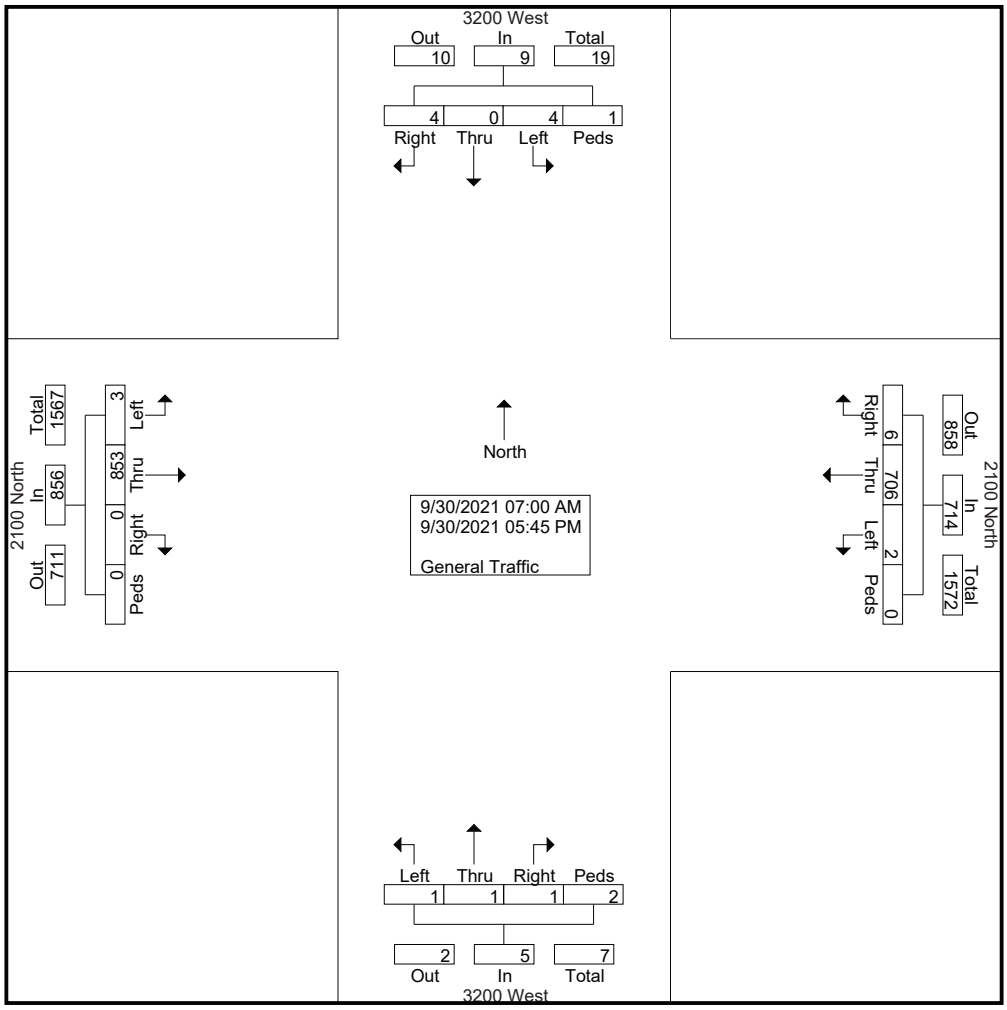
04:00 PM	0	0	0	0	0	0	37	0	0	37	0	0	0	1	1	0	56	0	0	56	94
04:15 PM	0	0	1	0	1	1	35	0	0	36	0	0	0	0	0	0	52	0	0	52	89
04:30 PM	0	0	0	0	0	0	38	0	0	38	0	0	0	0	0	0	61	0	0	61	99
04:45 PM	1	0	0	0	1	0	57	0	0	57	0	0	0	0	0	0	36	1	0	37	95
Total	1	0	1	0	2	1	167	0	0	168	0	0	0	1	1	0	205	1	0	206	377
05:00 PM	0	0	0	0	0	1	42	0	0	43	0	0	0	0	0	0	84	0	0	84	127
05:15 PM	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	0	57	0	0	57	85
05:30 PM	0	0	2	0	2	0	30	0	0	30	1	0	0	0	1	0	89	1	0	90	123
05:45 PM	0	0	0	0	0	0	47	0	0	47	0	0	0	1	1	0	54	0	0	54	102
Total	0	0	2	0	2	1	147	0	0	148	1	0	0	1	2	0	284	1	0	285	437
Grand Total	4	0	4	1	9	6	706	2	0	714	1	1	1	2	5	0	853	3	0	856	1584
Apprch %	44.4	0	44.4	11.1		0.8	98.9	0.3	0		20	20	20	40		0	99.6	0.4	0		
Total %	0.3	0	0.3	0.1	0.6	0.4	44.6	0.1	0	45.1	0.1	0.1	0.1	0.1	0.3	0	53.9	0.2	0	54	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 3200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 3200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 2



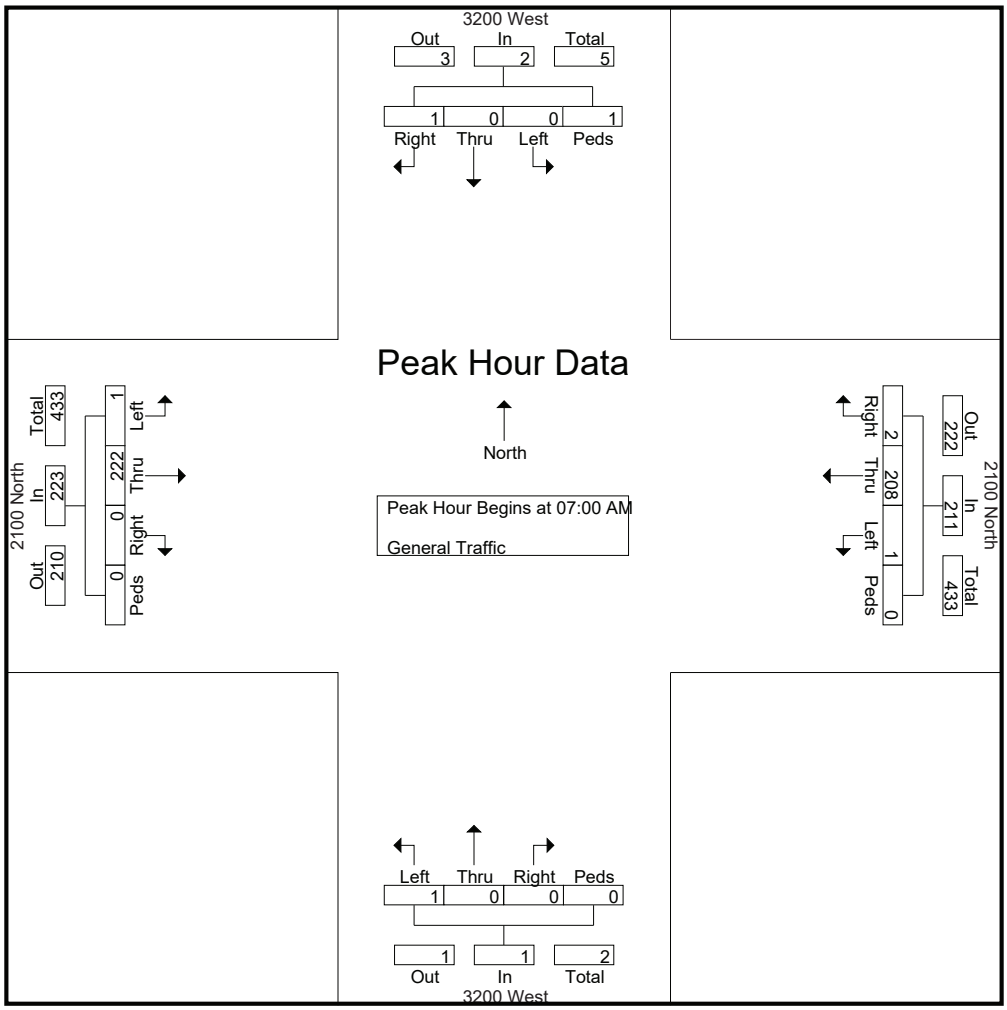
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 3200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 3200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 3

	3200 West From North					2100 North From East					3200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	**1**	**1**	**1**	38	0	0	39	0	0	0	0	0	0	**83**	0	0	**83**	**123**
07:15 AM	0	0	0	0	0	1	42	0	0	43	0	0	0	0	0	0	55	0	0	55	98
07:30 AM	**1**	0	0	0	1	0	**64**	**1**	0	**65**	0	0	0	0	0	0	49	**1**	0	50	116
07:45 AM	0	0	0	0	0	0	64	0	0	64	0	0	**1**	0	**1**	0	35	0	0	35	100
Total Volume	1	0	0	1	2	2	208	1	0	211	0	0	1	0	1	0	222	1	0	223	437
% App. Total	50	0	0	50		0.9	98.6	0.5	0		0	0	100	0		0	99.6	0.4	0		
PHF	.250	.000	.000	.250	.500	.500	.813	.250	.000	.812	.000	.000	.250	.000	.250	.000	.669	.250	.000	.672	.888



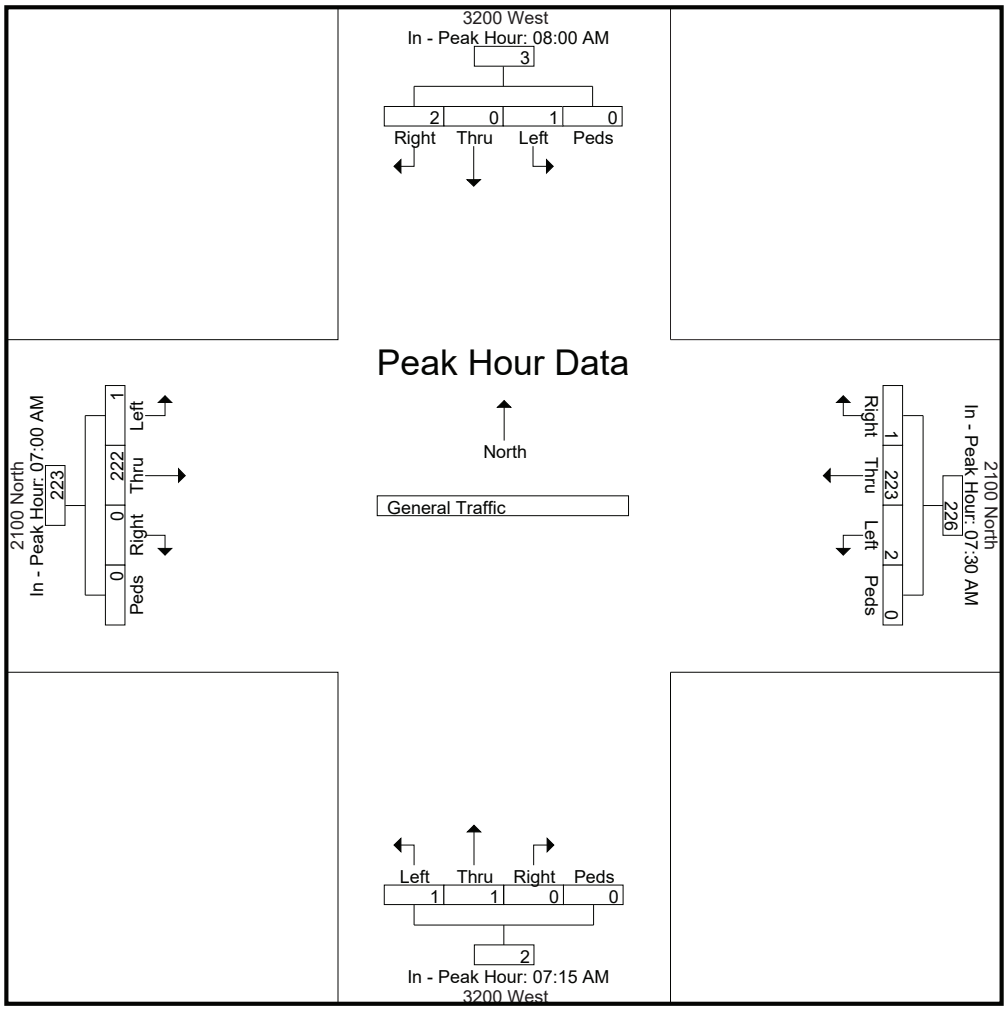
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 3200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 3200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 4

	3200 West From North					2100 North From East					3200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	08:00 AM					07:30 AM					07:15 AM					07:00 AM					
+0 mins.	**1**	0	0	0	**1**	0	**64**	**1**	0	**65**	0	0	0	0	0	0	**83**	0	0	**83**	
+15 mins.	0	0	0	0	0	0	64	0	0	64	0	0	0	0	0	0	55	0	0	55	
+30 mins.	0	0	**1**	0	1	0	48	1	0	49	0	0	**1**	0	**1**	0	49	**1**	0	50	
+45 mins.	1	0	0	0	1	**1**	47	0	0	48	0	**1**	0	0	1	0	35	0	0	35	
Total Volume	2	0	1	0	3	1	223	2	0	226	0	1	1	0	2	0	222	1	0	223	
% App. Total	66.7	0	33.3	0		0.4	98.7	0.9	0		0	50	50	0		0	99.6	0.4	0		
PHF	.500	.000	.250	.000	.750	.250	.871	.500	.000	.869	.000	.250	.250	.000	.500	.000	.669	.250	.000	.672	



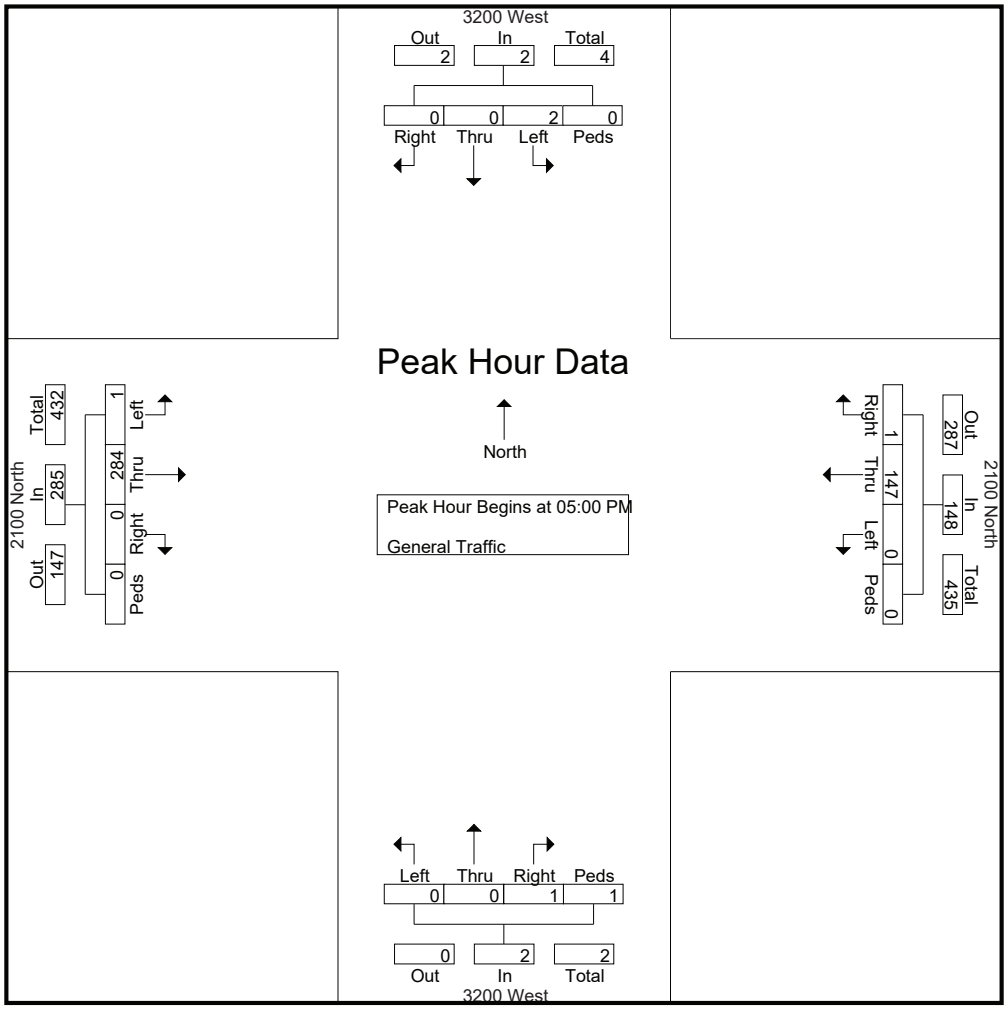
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 3200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 3200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 5

	3200 West From North					2100 North From East					3200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	**1**	42	0	0	43	0	0	0	0	0	0	84	0	0	84	**127**
05:15 PM	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	0	57	0	0	57	85
05:30 PM	0	0	**2**	0	**2**	0	30	0	0	30	**1**	0	0	0	**1**	0	**89**	**1**	0	**90**	123
05:45 PM	0	0	0	0	0	0	**47**	0	0	**47**	0	0	0	**1**	1	0	54	0	0	54	102
Total Volume	0	0	2	0	2	1	147	0	0	148	1	0	0	1	2	0	284	1	0	285	437
% App. Total	0	0	100	0		0.7	99.3	0	0		50	0	0	50		0	99.6	0.4	0		
PHF	.000	.000	.250	.000	.250	.250	.782	.000	.000	.787	.250	.000	.000	.250	.500	.000	.798	.250	.000	.792	.860



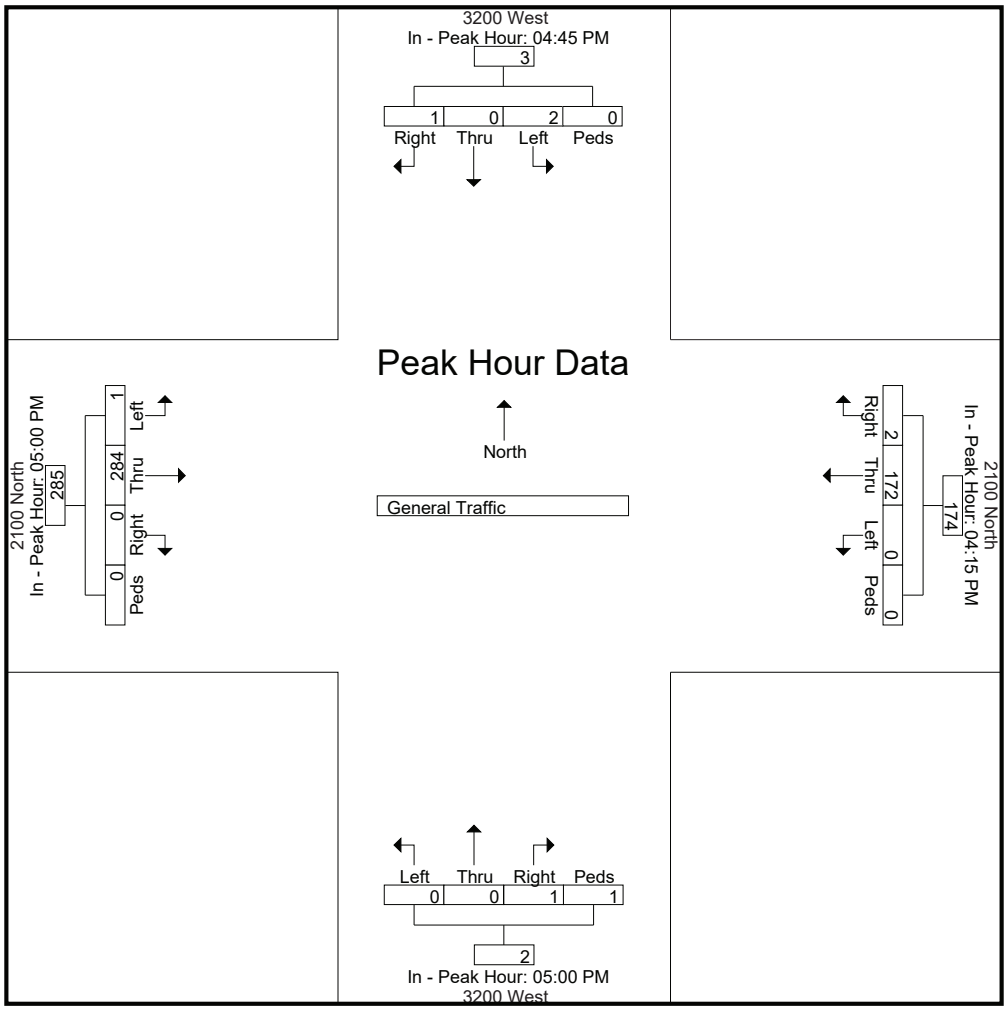
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 3200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 3200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 6

	3200 West From North					2100 North From East					3200 West From South					2100 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:45 PM					04:15 PM					05:00 PM					05:00 PM					
+0 mins.	**1**	0	0	0	1	**1**	35	0	0	36	0	0	0	0	0	0	84	0	0	84	
+15 mins.	0	0	0	0	0	0	38	0	0	38	0	0	0	0	0	0	57	0	0	57	
+30 mins.	0	0	0	0	0	0	**57**	0	0	**57**	**1**	0	0	0	**1**	0	**89**	**1**	0	**90**	
+45 mins.	0	0	**2**	0	**2**	1	42	0	0	43	0	0	0	**1**	1	0	54	0	0	54	
Total Volume	1	0	2	0	3	2	172	0	0	174	1	0	0	1	2	0	284	1	0	285	
% App. Total	33.3	0	66.7	0		1.1	98.9	0	0		50	0	0	50		0	99.6	0.4	0		
PHF	.250	.000	.250	.000	.375	.500	.754	.000	.000	.763	.250	.000	.000	.250	.500	.000	.798	.250	.000	.792	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2100 North / 3200 West
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 2100 North & 3200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 7

Image 1

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2200 West / 3300 North
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 3300 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 1

Groups Printed- General Traffic

	2200 West From North					Private Drive From East					2200 West From South					3300 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	2	0	0	2	0	0	0	0	0	0	10	0	0	10	0	0	0	1	1	13
07:15 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	6
07:30 AM	1	3	0	0	4	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	10
07:45 AM	2	5	0	0	7	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	22
Total	3	12	0	0	15	0	0	0	0	0	0	33	1	0	34	0	0	1	1	2	51
08:00 AM	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	9
08:15 AM	1	12	0	0	13	0	0	0	0	0	0	7	0	0	7	0	0	3	0	3	23
08:30 AM	1	3	0	0	4	0	0	0	0	0	1	6	0	0	7	2	0	0	0	2	13
08:45 AM	1	6	0	0	7	0	0	0	0	0	0	8	0	0	8	0	0	3	0	3	18
Total	3	24	0	0	27	0	0	0	0	0	1	27	0	0	28	2	0	6	0	8	63

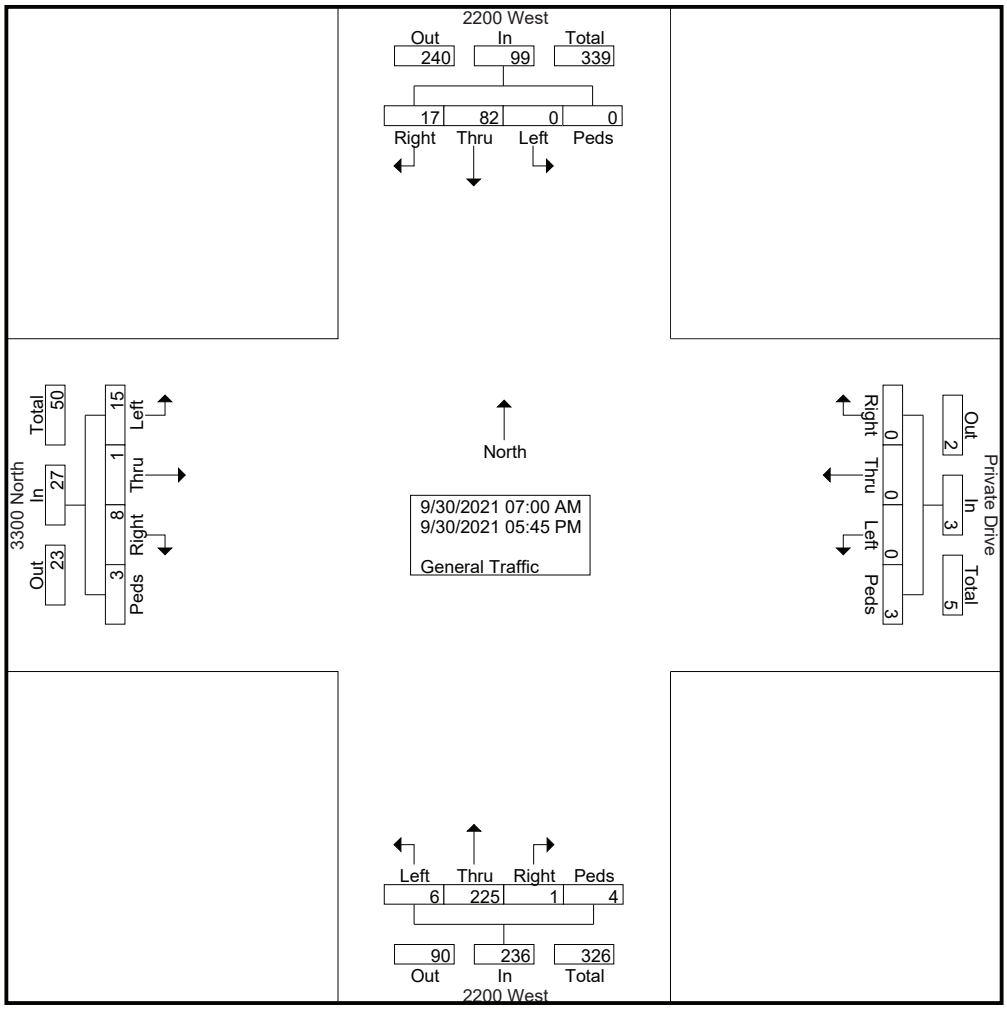
04:00 PM	2	6	0	0	8	0	0	0	0	0	0	17	1	0	18	1	0	1	0	2	28
04:15 PM	3	6	0	0	9	0	0	0	0	0	0	22	2	0	24	2	0	1	0	3	36
04:30 PM	2	1	0	0	3	0	0	0	0	0	0	22	0	0	22	1	1	2	0	4	29
04:45 PM	1	10	0	0	11	0	0	0	0	0	0	21	1	0	22	2	0	1	0	3	36
Total	8	23	0	0	31	0	0	0	0	0	0	82	4	0	86	6	1	5	0	12	129
05:00 PM	0	7	0	0	7	0	0	0	1	1	0	25	0	0	25	0	0	1	2	3	36
05:15 PM	1	4	0	0	5	0	0	0	0	0	0	28	0	2	30	0	0	1	0	1	36
05:30 PM	0	8	0	0	8	0	0	0	2	2	0	19	1	0	20	0	0	1	0	1	31
05:45 PM	2	4	0	0	6	0	0	0	0	0	0	11	0	2	13	0	0	0	0	0	19
Total	3	23	0	0	26	0	0	0	3	3	0	83	1	4	88	0	0	3	2	5	122
Grand Total	17	82	0	0	99	0	0	0	3	3	1	225	6	4	236	8	1	15	3	27	365
Apprch %	17.2	82.8	0	0		0	0	0	100		0.4	95.3	2.5	1.7		29.6	3.7	55.6	11.1		
Total %	4.7	22.5	0	0	27.1	0	0	0	0.8	0.8	0.3	61.6	1.6	1.1	64.7	2.2	0.3	4.1	0.8	7.4	

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2200 West / 3300 North
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 3300 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 2



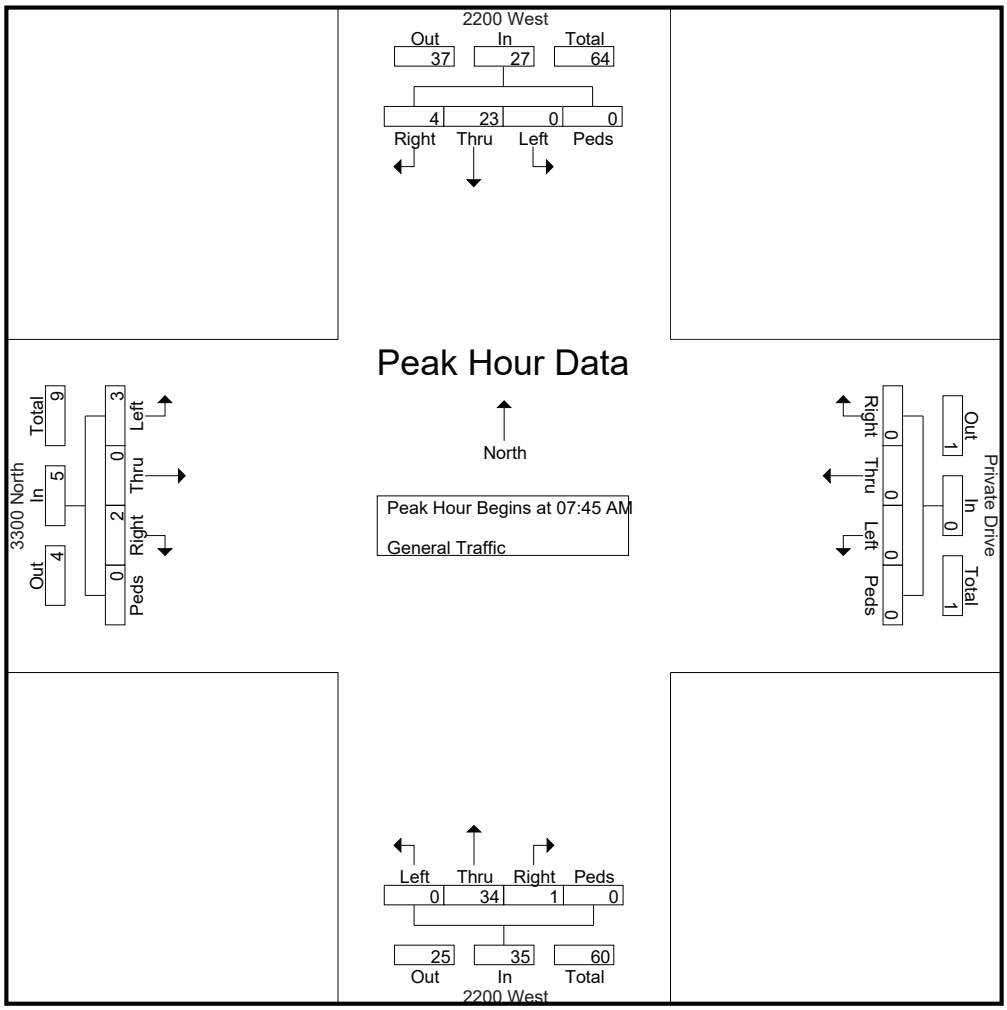
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2200 West / 3300 North
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 3300 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 3

	2200 West From North					Private Drive From East					2200 West From South					3300 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**2**	5	0	0	7	0	0	0	0	0	0	**15**	0	0	**15**	0	0	0	0	0	22
08:00 AM	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	9
08:15 AM	1	**12**	0	0	**13**	0	0	0	0	0	0	7	0	0	7	0	0	**3**	0	**3**	**23**
08:30 AM	1	3	0	0	4	0	0	0	0	0	**1**	6	0	0	7	**2**	0	0	0	2	13
Total Volume	4	23	0	0	27	0	0	0	0	0	1	34	0	0	35	2	0	3	0	5	67
% App. Total	14.8	85.2	0	0		0	0	0	0		2.9	97.1	0	0		40	0	60	0		
PHF	.500	.479	.000	.000	.519	.000	.000	.000	.000	.000	.250	.567	.000	.000	.583	.250	.000	.250	.000	.417	.728



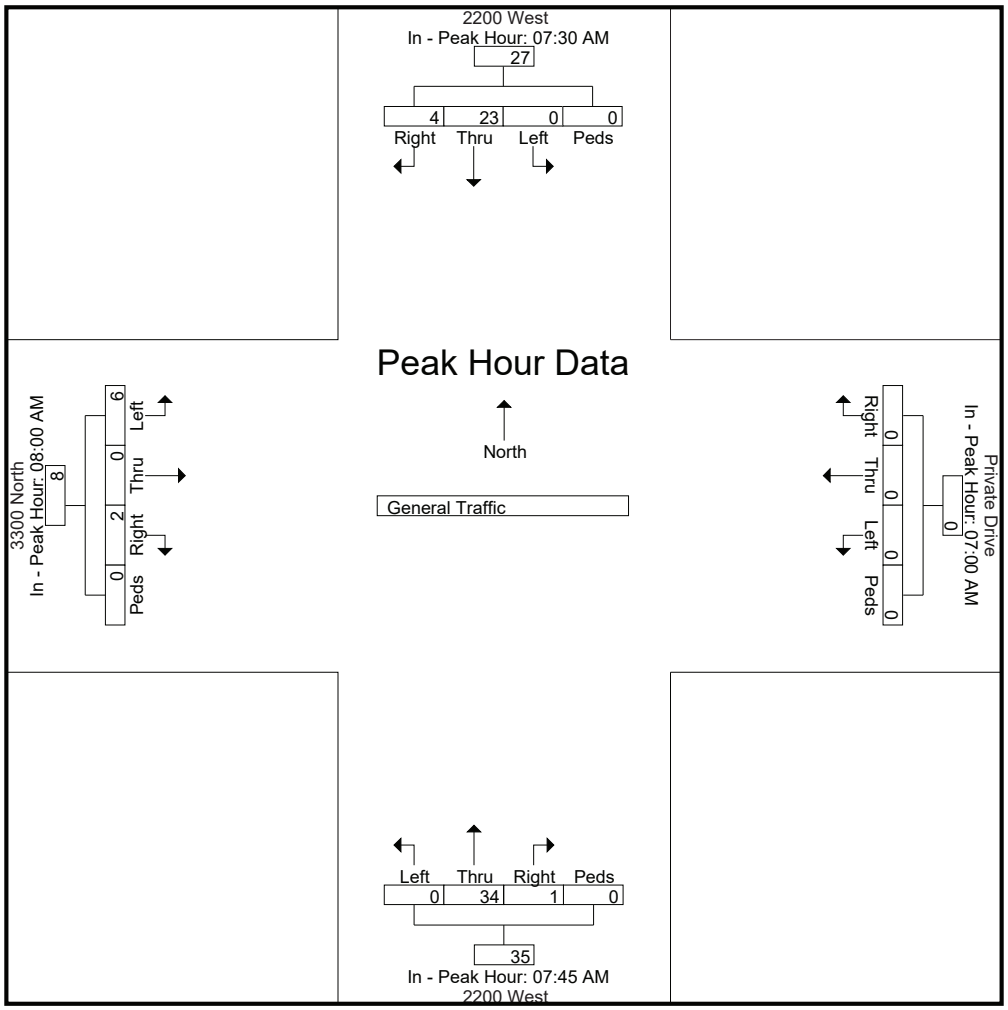
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2200 West / 3300 North
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 3300 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 4

	2200 West From North					Private Drive From East					2200 West From South					3300 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30 AM					07:00 AM					07:45 AM					08:00 AM					
+0 mins.	1	3	0	0	4	0	0	0	0	0	0	**15**	0	0	**15**	0	0	0	0	0	
+15 mins.	**2**	5	0	0	7	0	0	0	0	0	0	6	0	0	6	0	0	**3**	0	**3**	
+30 mins.	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	**2**	0	0	0	2	
+45 mins.	1	**12**	0	0	**13**	0	0	0	0	0	**1**	6	0	0	7	0	0	3	0	3	
Total Volume	4	23	0	0	27	0	0	0	0	0	1	34	0	0	35	2	0	6	0	8	
% App. Total	14.8	85.2	0	0		0	0	0	0		2.9	97.1	0	0		25	0	75	0		
PHF	.500	.479	.000	.000	.519	.000	.000	.000	.000	.000	.250	.567	.000	.000	.583	.250	.000	.500	.000	.667	



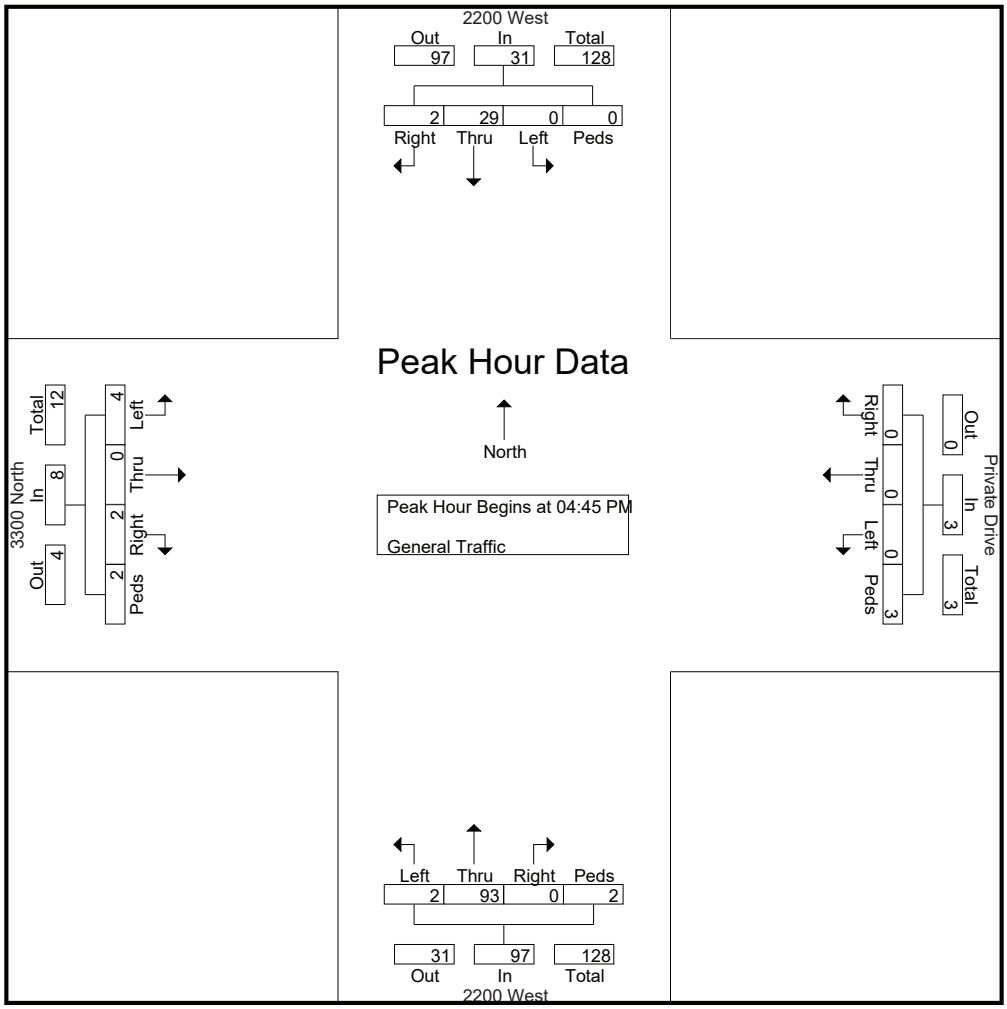
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2200 West / 3300 North
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 3300 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 5

	2200 West From North					Private Drive From East					2200 West From South					3300 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**1**	**10**	0	0	**11**	0	0	0	0	0	0	21	**1**	0	22	**2**	0	**1**	0	**3**	**36**
05:00 PM	0	7	0	0	7	0	0	0	1	1	0	25	0	0	25	0	0	1	**2**	3	36
05:15 PM	1	4	0	0	5	0	0	0	0	0	0	**28**	0	**2**	**30**	0	0	1	0	1	36
05:30 PM	0	8	0	0	8	0	0	0	**2**	**2**	0	19	1	0	20	0	0	1	0	1	31
Total Volume	2	29	0	0	31	0	0	0	3	3	0	93	2	2	97	2	0	4	2	8	139
% App. Total	6.5	93.5	0	0		0	0	0	100		0	95.9	2.1	2.1		25	0	50	25		
PHF	.500	.725	.000	.000	.705	.000	.000	.000	.375	.375	.000	.830	.500	.250	.808	.250	.000	1.00	.250	.667	.965



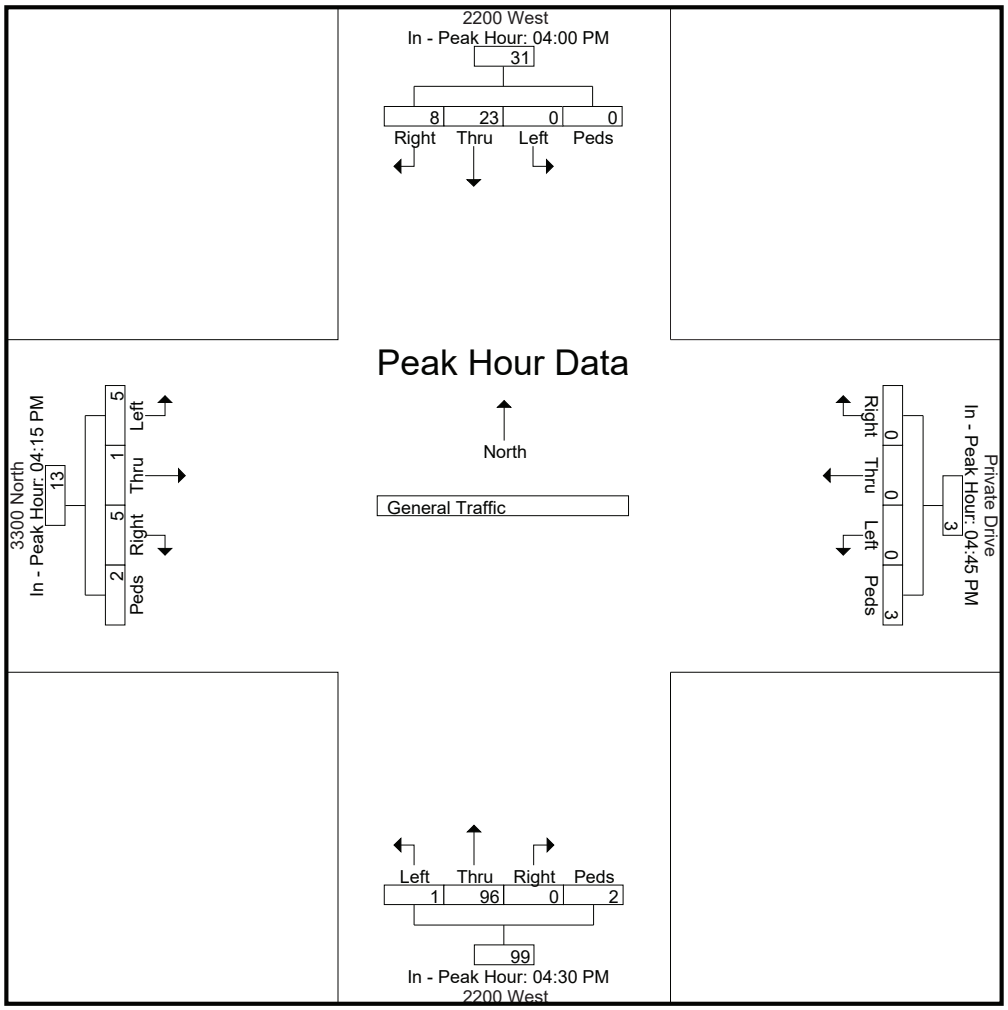
L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2200 West / 3300 North
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 3300 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 6

	2200 West From North					Private Drive From East					2200 West From South					3300 North From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:00 PM					04:45 PM					04:30 PM					04:15 PM					
+0 mins.	2	6	0	0	8	0	0	0	0	0	0	22	0	0	22	**2**	0	1	0	3	
+15 mins.	**3**	6	0	0	9	0	0	0	1	1	0	21	**1**	0	22	1	**1**	**2**	0	**4**	
+30 mins.	2	1	0	0	3	0	0	0	0	0	0	25	0	0	25	2	0	1	0	3	
+45 mins.	1	**10**	0	0	**11**	0	0	0	**2**	**2**	0	**28**	0	**2**	**30**	0	0	1	**2**	3	
Total Volume	8	23	0	0	31	0	0	0	3	3	0	96	1	2	99	5	1	5	2	13	
% App. Total	25.8	74.2	0	0		0	0	0	100		0	97	1	2		38.5	7.7	38.5	15.4		
PHF	.667	.575	.000	.000	.705	.000	.000	.000	.375	.375	.000	.857	.250	.250	.825	.625	.250	.625	.250	.813	



L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 413-2993

Study: WCG0066
Intersection: 2200 West / 3300 North
City, State: Salt Lake, Utah
Control: Stop Sign

File Name : 3300 North & 2200 West
Site Code : 00000000
Start Date : 9/30/2021
Page No : 7

Image 1

APPENDIX C: SIMTRAFFIC LOS AND QUEUEING REPORTS

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.2	0.7	3.1	0.1	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.0	2.2	0.8	2.5	1.5	0.6	9.4	11.0	5.0	12.6	12.1	2.6

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	1.1
Total Del/Veh (s)	2.8

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0		0.1	0.1	0.1
Total Del/Veh (s)	0.4	0.9	1.5	1.1	1.0		2.1	2.4	1.0

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.5	1.9	0.8	0.2	0.2	0.7

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	NBL	NBR	SER	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1	0.1
Total Del/Veh (s)	0.1	2.5	0.7	3.5	0.5

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	4.9

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	R	L	R	LTR	LTR
Maximum Queue (ft)	15	10	4	81	4	90	88
Average Queue (ft)	1	0	0	24	0	34	30
95th Queue (ft)	7	6	4	62	3	72	74
Link Distance (ft)		3932	3932			1568	7952
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150			150	130		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 3200 West & 2100 North

Movement	WB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	5	21	17
Average Queue (ft)	0	2	1
95th Queue (ft)	4	14	10
Link Distance (ft)		496	10648
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 2200 West & 3300 North

Movement	EB
Directions Served	LR
Maximum Queue (ft)	46
Average Queue (ft)	6
95th Queue (ft)	29
Link Distance (ft)	3436
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	NB	SE
Directions Served	LR	LR
Maximum Queue (ft)	3	18
Average Queue (ft)	0	1
95th Queue (ft)	3	10
Link Distance (ft)	1128	164
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.5	0.4	3.4	0.3	0.3	0.3	0.1	0.1	0.1
Total Del/Veh (s)	3.8	3.8	0.8	1.8	1.0	0.3	12.6	14.4	9.2	12.9	12.8	10.1

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	5.6

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	WBT	WBR	NBR	SBL	All
Denied Del/Veh (s)		0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)		1.1	0.8	0.4	3.1	5.3	1.1

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	1.6	4.7	1.6	0.2	0.3	1.4

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	NBL	NBT	NBR	SER	All
Denied Del/Veh (s)	0.1	0.0		0.0	0.1	0.0
Total Del/Veh (s)	0.2	1.6		1.9	2.9	1.5

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	8.9

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	R	L	T	R	LTR	LTR
Maximum Queue (ft)	17	2	2	41	2	9	189	148
Average Queue (ft)	1	0	0	5	0	0	82	53
95th Queue (ft)	11	3	2	25	2	7	147	108
Link Distance (ft)		3932	3932		1433		1568	7952
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150		130		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 2: 3200 West & 2100 North

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	24	39
Average Queue (ft)	1	2
95th Queue (ft)	11	17
Link Distance (ft)	496	10648
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	51	9
Average Queue (ft)	6	0
95th Queue (ft)	30	9
Link Distance (ft)	3436	1444
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	SE
Directions Served	LR
Maximum Queue (ft)	21
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	164
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	1.0	3.1	0.1	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.2	2.4	0.9	3.1	2.3	1.2	11.7	16.6	6.3	15.7	14.5	17.2

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	1.3
Total Del/Veh (s)	3.9

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBR	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	1.0	0.9	0.9	1.2	1.2	3.6	2.8	1.1

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.4	2.1	0.5	0.4	0.1	0.6

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	NBL	NBR	SER	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1	0.1
Total Del/Veh (s)	0.4	0.9	0.7	2.7	0.5

14: 2200 West & 2900 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.8	3.4	4.3	2.4	1.2	0.8	3.1

16: 2200 West & Access Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	2.9	4.8	2.4	0.9	1.1	2.3

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	7.1

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	R	L	T	R	LTR	LTR
Maximum Queue (ft)	47	8	2	84	4	17	100	138
Average Queue (ft)	3	0	0	25	0	1	40	50
95th Queue (ft)	21	2	2	62	3	8	81	103
Link Distance (ft)		3932	3932		1433		1568	4425
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150			150		130		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 2: 3200 West & 2100 North

Movement	WB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	3	26	18
Average Queue (ft)	0	1	1
95th Queue (ft)	2	11	11
Link Distance (ft)		496	10648
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 2200 West & 3300 North

Movement	EB
Directions Served	LR
Maximum Queue (ft)	56
Average Queue (ft)	6
95th Queue (ft)	31
Link Distance (ft)	3436
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	SE
Directions Served	LR
Maximum Queue (ft)	18
Average Queue (ft)	1
95th Queue (ft)	8
Link Distance (ft)	164
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: 2200 West & 2900 North

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	53	75	80	2
Average Queue (ft)	8	28	10	0
95th Queue (ft)	34	67	46	2
Link Distance (ft)		3057	2122	1280
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: 2200 West & Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	51	38
Average Queue (ft)	8	3
95th Queue (ft)	35	21
Link Distance (ft)	1480	4425
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	0.5	3.4	0.3	0.3	0.3	0.1	0.1	0.0
Total Del/Veh (s)	4.3	4.2	1.3	2.6	1.6	0.6	22.3	25.2	18.8	23.0	23.1	16.3

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	11.0

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	WBT	WBR	NBR	SBL	All
Denied Del/Veh (s)		0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)		1.1	1.0	1.1	3.8	11.4	1.1

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.1	1.4	2.4	1.4	0.2	0.1	1.1

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	NBL	NBR	SER	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.2	3.2	1.8	2.4	1.5

14: 2200 West & 2900 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	5.4	4.5	4.1	2.5	0.5	0.2	3.4

16: 2200 West & Access Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.0	3.1	3.3	2.6	1.2	1.8	2.1

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	14.6

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	R	LTR	LTR
Maximum Queue (ft)	39	14	47	4	35	291	237
Average Queue (ft)	2	1	6	0	1	111	104
95th Queue (ft)	18	7	27	3	17	256	194
Link Distance (ft)		3932		1433		1568	4425
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		150		130		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 3200 West & 2100 North

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	27	56
Average Queue (ft)	1	4
95th Queue (ft)	12	29
Link Distance (ft)	496	10648
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 2200 West & 3300 North

Movement	EB
Directions Served	LR
Maximum Queue (ft)	51
Average Queue (ft)	6
95th Queue (ft)	29
Link Distance (ft)	3436
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	SE
Directions Served	LR
Maximum Queue (ft)	13
Average Queue (ft)	1
95th Queue (ft)	7
Link Distance (ft)	164
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: 2200 West & 2900 North

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	67	105	54
Average Queue (ft)	22	54	4
95th Queue (ft)	57	88	28
Link Distance (ft)		2963	2122
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 2200 West & Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	67	14
Average Queue (ft)	21	1
95th Queue (ft)	55	9
Link Distance (ft)	1344	4425
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.2	0.8	3.1	0.2	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	3.3	2.4	1.0	3.0	1.8	0.8	12.1	12.9	5.4	13.5	13.0	6.8

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	1.1
Total Del/Veh (s)	3.4

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.0	0.0		0.1	0.1	0.1
Total Del/Veh (s)	1.3	1.0		1.2	0.7		1.8	3.1	1.1

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.8	2.3	1.2	0.3	0.2	1.1

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	NBL	NBT	NBR	SER	All
Denied Del/Veh (s)	0.1	0.0		0.0	0.1	0.0
Total Del/Veh (s)	0.3	0.4		1.1	2.6	0.8

Total Network Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	6.4

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	R	LTR	LTR
Maximum Queue (ft)	25	6	80	2	6	109	115
Average Queue (ft)	2	0	28	0	0	40	39
95th Queue (ft)	16	5	67	2	5	83	85
Link Distance (ft)		3932		1433		1568	7952
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		150		130		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 3200 West & 2100 North

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	3	2	24	24
Average Queue (ft)	0	0	2	1
95th Queue (ft)	3	3	13	11
Link Distance (ft)			496	10648
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150	150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 2200 West & 3300 North

Movement	EB
Directions Served	LR
Maximum Queue (ft)	57
Average Queue (ft)	9
95th Queue (ft)	35
Link Distance (ft)	3436
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	SE
Directions Served	LR
Maximum Queue (ft)	15
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	164
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	0.5	3.3	0.3	0.3	0.3	0.1	0.1	0.1
Total Del/Veh (s)	2.8	4.2	1.6	2.9	1.3	0.5	16.7	19.0	13.5	17.3	15.1	10.2

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	7.6

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	WBT	WBR	NBR	SBL	All
Denied Del/Veh (s)		0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)		1.4	1.1	0.5	2.4	7.8	1.3

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.1	1.8	4.4	1.8	0.4	0.3	1.6

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	NBL	NBR	SER	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.4	2.9	2.2	2.9	1.7

Total Network Performance

Denied Del/Veh (s)	0.6
Total Del/Veh (s)	11.2

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	R	LTR	LTR
Maximum Queue (ft)	45	12	60	4	30	272	152
Average Queue (ft)	2	0	11	0	1	102	64
95th Queue (ft)	19	7	39	3	16	200	120
Link Distance (ft)		3932		1433		1568	7952
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		150		130		
Storage Blk Time (%)					0		
Queuing Penalty (veh)					0		

Intersection: 2: 3200 West & 2100 North

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	23	46
Average Queue (ft)	1	3
95th Queue (ft)	10	21
Link Distance (ft)	496	10648
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	57	13
Average Queue (ft)	11	1
95th Queue (ft)	40	9
Link Distance (ft)	3436	1444
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	WB	SE
Directions Served	LR	LR
Maximum Queue (ft)	3	16
Average Queue (ft)	0	1
95th Queue (ft)	3	8
Link Distance (ft)	2250	164
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.5	1.9	3.4	2.0	0.2	0.2	0.1	0.0	0.1
Total Del/Veh (s)	32.9	8.8	2.1	19.0	13.2	9.9	20.7	17.8	6.3	20.1	13.5	6.5

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	1.9
Total Del/Veh (s)	13.0

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.0	0.0		0.1	0.1	0.1
Total Del/Veh (s)	2.1	1.2		3.8	4.7		1.9	3.4	2.4

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	2.6	0.5	0.8	0.7	0.8

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	NBL	NBR	SER	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.1	0.1
Total Del/Veh (s)	1.0	3.0	0.8	2.6	1.0

14: 2200 West & Access Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.6	3.8	9.0	7.3	1.5	1.4	6.2

16: 2200 West & 2900 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	19.7	5.1	10.7	10.1	3.0	2.2	8.7

Total Network Performance

Denied Del/Veh (s)	1.7
Total Del/Veh (s)	23.7

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	L	T	R
Maximum Queue (ft)	109	144	32	176	188	215	69	124	113	124	73	70
Average Queue (ft)	32	45	3	68	57	107	19	51	30	63	18	15
95th Queue (ft)	82	109	17	138	133	185	56	95	85	102	56	50
Link Distance (ft)		3907	3907		1421			1570			4425	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150		130	100		200	200		200
Storage Blk Time (%)	0	0		1	0	3	0	1				
Queuing Penalty (veh)	1	0		5	2	11	0	0				

Intersection: 2: 3200 West & 2100 North

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	5	5	27	15
Average Queue (ft)	0	0	2	1
95th Queue (ft)	4	3	14	11
Link Distance (ft)			496	10648
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150	150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 2200 West & 3300 North

Movement	EB
Directions Served	LR
Maximum Queue (ft)	67
Average Queue (ft)	11
95th Queue (ft)	42
Link Distance (ft)	3436
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	WB	NB	SE
Directions Served	LR	LR	LR
Maximum Queue (ft)	8	7	16
Average Queue (ft)	0	0	1
95th Queue (ft)	8	0	8
Link Distance (ft)	2250	1128	164
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: 2200 West & Access

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	86	100
Average Queue (ft)	40	12
95th Queue (ft)	76	60
Link Distance (ft)	1679	4425
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: 2200 West & 2900 North

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	86	102	259	52
Average Queue (ft)	28	51	109	5
95th Queue (ft)	70	89	221	27
Link Distance (ft)		3503	2112	1290
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 19

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.5	1.0	3.5	2.5	0.4	0.4	0.5	0.3	0.5
Total Del/Veh (s)	33.4	23.0	2.9	32.7	21.1	6.5	34.6	36.1	21.6	34.2	15.9	9.8

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	23.8

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	WBT	WBR	NBR	SBL	All
Denied Del/Veh (s)		0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)		1.3	4.0	3.5	2.2	7.0	2.4

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.1	2.1	3.5	1.5	0.5	0.5	1.3

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	NBL	NBR	SER	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.7	2.6	2.5	2.9	2.0

5: 2200 West & 2900 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.5	0.5	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	15.2	11.5	6.9	6.2	1.8	1.0	9.0

14: 2200 West & Access Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.3	6.4	9.4	6.5	2.8	1.8	4.9

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	31.2

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	L	T	R
Maximum Queue (ft)	92	286	42	87	201	173	189	372	272	325	219	65
Average Queue (ft)	17	130	7	23	76	66	42	169	146	166	32	16
95th Queue (ft)	60	244	27	65	159	122	123	306	239	266	114	48
Link Distance (ft)		3907	3907		1421			1570			4425	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150		130	100		200	200		200
Storage Blk Time (%)		5			2	0	0	24	2	4	0	
Queuing Penalty (veh)		1			5	1	1	9	2	4	0	

Intersection: 2: 3200 West & 2100 North

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	21	36
Average Queue (ft)	2	2
95th Queue (ft)	13	19
Link Distance (ft)	496	10648
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	50	19
Average Queue (ft)	9	1
95th Queue (ft)	35	9
Link Distance (ft)	3436	1444
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	WB	NB	SE
Directions Served	LR	LR	LR
Maximum Queue (ft)	8	14	18
Average Queue (ft)	0	1	1
95th Queue (ft)	5	9	9
Link Distance (ft)	2250	1128	164
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: 2200 West & 2900 North

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	129	238	162	11
Average Queue (ft)	58	108	39	1
95th Queue (ft)	105	176	116	7
Link Distance (ft)		3433	2122	1280
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200			
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 14: 2200 West & Access

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	103	137	8
Average Queue (ft)	50	28	0
95th Queue (ft)	88	96	8
Link Distance (ft)	1579	4425	2122
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 24

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.4	1.3	3.3	2.4	0.3	0.3	0.0	0.0	0.0
Total Del/Veh (s)	17.1	9.6	4.4	24.0	11.6	4.9	31.4	30.2	17.4	34.4	24.4	8.9

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	1.3
Total Del/Veh (s)	15.9

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.3	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	3.5	1.5	1.1	3.9	3.8	3.2	8.8	3.1	7.7	5.1	2.6

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	2.6	3.6	2.3	0.6	0.3	1.7

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	WBR	NBL	NBT	NBR	SEL	SER	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.9	0.5	3.3	1.3	2.8	7.0	3.2	2.1

14: 2200 West & Access Performance by movement

Movement	NBT	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	3.6	2.3	3.2

16: 2200 West & 2900 North Performance by movement

Movement	NBT	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.6	0.5	1.7

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	20.9

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	TR	L	L	T	R
Maximum Queue (ft)	62	112	134	264	317	150	127	268	80	101	130	71
Average Queue (ft)	11	44	42	118	93	37	50	120	17	41	41	15
95th Queue (ft)	41	94	100	220	228	92	109	224	58	83	98	50
Link Distance (ft)		3907	3907		1421			1570			4425	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150		130	200		200	200		200
Storage Blk Time (%)		0		7	2	0		2			0	
Queuing Penalty (veh)		0		30	7	0		1			0	

Intersection: 2: 3200 West & 2100 North

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	25	15	55	62
Average Queue (ft)	1	1	11	12
95th Queue (ft)	14	9	40	44
Link Distance (ft)			496	10648
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150	150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	49	13
Average Queue (ft)	9	1
95th Queue (ft)	35	9
Link Distance (ft)	3436	1443
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	NB	SE
Directions Served	LR	LR
Maximum Queue (ft)	15	51
Average Queue (ft)	1	10
95th Queue (ft)	9	36
Link Distance (ft)	1128	164
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: 2200 West & Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 16: 2200 West & 2900 North

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 38

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	1.2	3.4	2.3	0.4	0.4	0.5	0.1	0.5
Total Del/Veh (s)	20.0	13.6	7.6	36.8	16.5	6.3	28.1	40.0	27.8	44.9	22.5	8.3

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	22.2

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	3.5	1.8	1.8	6.1	4.3	4.9	8.3	2.8	9.6	5.2	3.0

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3	2.5	4.6	3.1	0.7	0.6	2.2

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	WBL	WBR	NBL	NBR	SEL	SER	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	1.1	0.8	5.5	4.1	7.0	4.0	3.0

5: 2200 West & 2900 North Performance by movement

Movement	NBT	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	3.5	0.5	2.4

14: 2200 West & Access Performance by movement

Movement	NBT	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	5.1	2.7	4.2

Total Network Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	28.5

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	TR	L	L	T	R
Maximum Queue (ft)	82	163	166	270	400	154	226	451	112	126	169	69
Average Queue (ft)	18	68	67	127	125	45	47	217	40	58	63	18
95th Queue (ft)	54	136	137	233	312	101	132	378	90	109	137	55
Link Distance (ft)		3907	3907		1421			1570			4425	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150		130	200		200	200		200
Storage Blk Time (%)		1		11	4	0		15		0	0	
Queuing Penalty (veh)		0		50	14	0		7		0	0	

Intersection: 2: 3200 West & 2100 North

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	30	18	56	68
Average Queue (ft)	1	1	10	12
95th Queue (ft)	13	10	39	44
Link Distance (ft)			496	10648
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150	150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	60	14
Average Queue (ft)	11	0
95th Queue (ft)	39	8
Link Distance (ft)	3436	1443
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	WB	NB	SE
Directions Served	LR	LR	LR
Maximum Queue (ft)	25	26	49
Average Queue (ft)	1	1	9
95th Queue (ft)	14	17	36
Link Distance (ft)	2250	1128	164
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: 2200 West & 2900 North

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 14: 2200 West & Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 72

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.6	0.0	0.0	2.5	0.8	0.6	2.4	0.5	2.3	1.2	0.2	1.2
Total Del/Veh (s)	132.1	14.9	7.5	84.6	33.8	16.3	34.8	34.8	7.7	32.8	18.2	5.4

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	30.6

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	2.2	1.7	0.7	6.4	4.8	4.6	9.3	3.1	6.9	4.6	3.1

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.7	3.0	4.5	1.8	0.8	0.4	1.4

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.1	0.1	0.6	0.3	0.0	0.0	0.3
Total Del/Veh (s)	0.5	0.3	3.6	1.4	8.1	6.2	3.7

14: 2200 West & Access Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.8	4.1	7.1	4.0	2.4	2.5	4.1

16: 2200 West & 2950 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.9	4.2	6.4	3.1	1.0	0.6	3.9

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	35.1

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	R	L	L	T
Maximum Queue (ft)	224	199	203	300	804	532	137	215	105	163	191	126
Average Queue (ft)	87	74	77	214	296	191	54	102	50	74	101	39
95th Queue (ft)	197	154	157	349	755	446	109	185	90	142	164	95
Link Distance (ft)		3901	3901		1417	1417		1570				1877
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150			200		200	200	200	
Storage Blk Time (%)	13	0		45	5			1		0	0	
Queuing Penalty (veh)	26	0		131	13			1		0	0	

Intersection: 1: 2200 West & 2100 North

Movement	SB
Directions Served	R
Maximum Queue (ft)	82
Average Queue (ft)	20
95th Queue (ft)	59
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: 3200 West & 2100 North

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	L	TR
Maximum Queue (ft)	19	34	54	46	51
Average Queue (ft)	1	2	10	5	5
95th Queue (ft)	9	16	38	26	26
Link Distance (ft)			496		10648
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	150		200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	56	19
Average Queue (ft)	9	1
95th Queue (ft)	36	10
Link Distance (ft)	3430	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	4	72	43	154
Average Queue (ft)	0	11	5	75
95th Queue (ft)	2	47	25	123
Link Distance (ft)	1720			1138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		200	200	
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 14: 2200 West & Access

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	81	89	4
Average Queue (ft)	33	21	0
95th Queue (ft)	72	64	3
Link Distance (ft)	1673		2112
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		200	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: 2200 West & 2950 North

Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	61	104	132	19
Average Queue (ft)	9	41	42	1
95th Queue (ft)	37	81	101	10
Link Distance (ft)		2430		478
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200		200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 171

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	2.8	0.6	0.4	2.7	0.8	2.6	2.4	1.3	2.5
Total Del/Veh (s)	53.2	38.8	26.7	35.1	25.0	5.2	50.5	49.9	22.9	44.4	23.3	7.4

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	1.4
Total Del/Veh (s)	31.4

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	2.2	1.8	1.8	7.7	4.7	5.2	9.2	3.2	7.1	4.3	3.2

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.3	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.7	2.3	3.8	2.7	1.0	1.0	2.1

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.2	0.1	0.6	0.3	0.0	0.0	0.2
Total Del/Veh (s)	1.4	0.7	4.1	1.2	11.9	9.9	5.9

5: 2200 West & 2900 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.3	0.2	0.0	0.0	0.0	0.1
Total Del/Veh (s)	8.5	8.9	5.9	3.5	1.1	0.5	4.9

14: 2200 West & Access Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.0	6.8	7.6	3.3	3.2	2.0	3.9

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	37.2

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	R	L	L	T
Maximum Queue (ft)	113	268	300	275	354	161	150	259	326	325	448	723
Average Queue (ft)	42	147	161	134	157	60	64	112	140	247	288	160
95th Queue (ft)	95	235	261	242	284	123	129	214	256	358	444	533
Link Distance (ft)		3901	3901		1417	1417		1570				1999
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150			200		200	200	200	
Storage Blk Time (%)	0	9		7	9		0	2	3	14	24	0
Queuing Penalty (veh)	0	4		20	17		1	5	6	29	51	1

Intersection: 1: 2200 West & 2100 North

Movement	SB
Directions Served	R
Maximum Queue (ft)	122
Average Queue (ft)	31
95th Queue (ft)	89
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: 3200 West & 2100 North

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	L	TR
Maximum Queue (ft)	16	30	49	40	58
Average Queue (ft)	0	2	9	4	7
95th Queue (ft)	6	13	35	23	32
Link Distance (ft)			496		10648
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	150		200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	59	18
Average Queue (ft)	9	1
95th Queue (ft)	36	9
Link Distance (ft)	3430	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	6	113	42	217
Average Queue (ft)	0	29	4	108
95th Queue (ft)	5	78	22	180
Link Distance (ft)	2313			1137
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		200	200	
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 5: 2200 West & 2900 North

Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	68	168	88	6
Average Queue (ft)	17	86	19	0
95th Queue (ft)	54	141	61	6
Link Distance (ft)		3427		418
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200		200	
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 14: 2200 West & Access

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	128	77	7
Average Queue (ft)	62	16	0
95th Queue (ft)	107	52	7
Link Distance (ft)	1573		2122
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		200	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 135

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	7.0	6.1	6.8	2.4	0.5	2.4	1.4	0.2	1.4
Total Del/Veh (s)	50.0	10.8	6.1	48.0	31.2	23.1	37.0	34.0	6.8	37.2	22.7	6.1

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	3.9
Total Del/Veh (s)	26.4

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	3.9	1.6	0.9	2.4	1.4	0.8	9.4	3.8	7.1	3.5	1.6

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	2.2	3.8	1.9	0.8	0.7	1.5

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.1	0.1	0.8	0.4	0.0	0.0	0.3
Total Del/Veh (s)	0.5	0.1	3.8	1.6	8.3	6.3	3.8

14: 2200 West & Access Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.8	3.6	5.4	2.8	2.5	1.8	2.8

16: 2200 West & 2950 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	3.5	4.4	2.3	0.8	0.5	2.1

19: 2100 North Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	8.6	2.1	6.1	7.2	26.7	6.1	6.4

Total Network Performance

Denied Del/Veh (s)	3.6
Total Del/Veh (s)	32.0

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	R	L	L	T
Maximum Queue (ft)	84	133	152	296	1087	230	144	232	108	162	180	135
Average Queue (ft)	23	50	58	162	272	140	55	93	47	58	82	50
95th Queue (ft)	68	105	124	288	731	254	113	175	87	127	146	106
Link Distance (ft)		2617	2617		1417			1570				1877
Upstream Blk Time (%)					1							
Queuing Penalty (veh)					0							
Storage Bay Dist (ft)	150			150		130	200		200	200	200	
Storage Blk Time (%)	0	0		15	11	3		1		0	0	
Queuing Penalty (veh)	1	0		158	83	27		1		0	0	

Intersection: 1: 2200 West & 2100 North

Movement	SB
Directions Served	R
Maximum Queue (ft)	69
Average Queue (ft)	17
95th Queue (ft)	53
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: 3200 West & 2100 North

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	L	TR
Maximum Queue (ft)	18	22	57	35	52
Average Queue (ft)	1	2	10	4	7
95th Queue (ft)	11	12	38	22	33
Link Distance (ft)			496		10648
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	150		200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	52	12
Average Queue (ft)	10	0
95th Queue (ft)	36	6
Link Distance (ft)	3430	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	78	40	138
Average Queue (ft)	11	4	74
95th Queue (ft)	47	23	119
Link Distance (ft)			1138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200	200	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: 2200 West & Access

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	70	34
Average Queue (ft)	17	3
95th Queue (ft)	53	20
Link Distance (ft)	1673	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 16: 2200 West & 2950 North

Movement	EB	EB	NB
Directions Served	L	R	L
Maximum Queue (ft)	46	73	62
Average Queue (ft)	6	20	9
95th Queue (ft)	29	59	41
Link Distance (ft)		2430	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200		200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 19: 2100 North

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	79	71	91	68	78	104	133	42
Average Queue (ft)	18	12	23	13	15	28	52	6
95th Queue (ft)	56	45	68	45	53	74	111	27
Link Distance (ft)		1217	1217	2617	2617			9167
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100					100	200	
Storage Blk Time (%)	0	0			0	0		
Queuing Penalty (veh)	0	0			0	0		

Network Summary

Network wide Queuing Penalty: 270

1: 2200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.0	3.3	1.7	3.3	2.6	0.8	2.7	2.5	1.0	2.6
Total Del/Veh (s)	45.5	35.4	30.4	34.4	20.3	7.2	49.6	52.8	23.3	47.7	26.7	5.6

1: 2200 West & 2100 North Performance by movement

Movement	All
Denied Del/Veh (s)	1.7
Total Del/Veh (s)	31.1

2: 3200 West & 2100 North Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.3	0.1	0.1	0.3	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	4.2	1.7	1.3	5.9	5.4	4.8	7.9	3.4	8.1	4.5	3.4

3: 2200 West & 3300 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.5	2.0	4.7	2.9	1.0	1.3	2.2

4: 2200 West & Cudahy Lane (3500 North) Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.2	0.3	0.6	0.3	0.0	0.0	0.2
Total Del/Veh (s)	1.3	1.2	4.2	1.2	9.6	10.5	6.1

5: 2200 West & 2900 North Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.2	0.3	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.0	4.8	5.5	3.2	0.8	0.5	2.7

14: 2200 West & Access Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.1	3.6	5.3	2.8	2.8	2.9	2.9

22: 2100 North & 2900 West Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1
Total Del/Veh (s)	28.2	19.8	21.6	9.3	12.6	7.7	18.1

Total Network Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	42.0

Intersection: 1: 2200 West & 2100 North

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T	R	L	L	T
Maximum Queue (ft)	174	358	371	289	379	203	189	330	352	312	379	291
Average Queue (ft)	34	189	197	132	173	61	59	119	148	181	216	99
95th Queue (ft)	115	304	317	236	309	134	138	258	274	291	340	219
Link Distance (ft)		2615	2615		1417			1570				1999
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	150			150		200	200		200	200	200	
Storage Blk Time (%)	0	16		8	9	0	0	3	5	4	13	1
Queuing Penalty (veh)	0	5		55	43	0	1	10	8	7	23	3

Intersection: 1: 2200 West & 2100 North

Movement	SB
Directions Served	R
Maximum Queue (ft)	81
Average Queue (ft)	23
95th Queue (ft)	64
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: 3200 West & 2100 North

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	L	TR
Maximum Queue (ft)	18	26	49	46	51
Average Queue (ft)	1	1	10	4	7
95th Queue (ft)	9	12	37	24	32
Link Distance (ft)			496		10648
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	150		200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: 2200 West & 3300 North

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	58	16
Average Queue (ft)	10	1
95th Queue (ft)	38	9
Link Distance (ft)	3430	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 2200 West & Cudahy Lane (3500 North)

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	14	99	35	219
Average Queue (ft)	0	35	4	112
95th Queue (ft)	7	84	22	184
Link Distance (ft)	2313			1137
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		200	200	
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 5: 2200 West & 2900 North

Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	59	91	42	4
Average Queue (ft)	15	40	4	0
95th Queue (ft)	48	78	26	5
Link Distance (ft)		3427		418
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200		200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: 2200 West & Access

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	72	27
Average Queue (ft)	27	2
95th Queue (ft)	64	15
Link Distance (ft)	1573	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 22: 2100 North & 2900 West

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	75	211	235	210	236	179	204	57
Average Queue (ft)	13	105	121	95	107	42	77	9
95th Queue (ft)	48	172	193	174	196	112	159	35
Link Distance (ft)		1219	1219	2615	2615			5402
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	100					100	200	
Storage Blk Time (%)	0	8			8	0	0	
Queuing Penalty (veh)	0	1			7	0	0	

Network Summary

Network wide Queuing Penalty: 166

FRONTIER CORPORATION USA
Environmental Consultants

Swaner Property
Approximately 420.07 Acres Project Area

Aquatic Resources and Wetlands Delineation Technical Report

Salt Lake City, Salt Lake County, Utah

Sections 9 and 16, Township 1 North, Range 1 West
Salt Lake Base and Meridian

Prepared For:

Scannell Properties, LLC
294 Grove Lane East, Suite 140
Wayzata, Minnesota 55391

Adam Frankenberg, Project Manager
(952) 913-5785

Prepared By:

Frontier Corporation USA
221 N. Gateway Drive, Suite B
Providence, Utah 84332

Dennis Wenger, Sr. Wetlands Ecologist
(435) 753-9502

September 2021 (UPDATED)

TABLE OF CONTENTS

List of Figures

List of Tables

Appendices

1.0 INTRODUCTION

1.1 Project Description

Frontier Corporation USA (Frontier) completed an aquatic resources and wetlands delineation on behalf of Scannell Properties, LLC for an approximately 420.07-acre Project Area located in Salt Lake City, Salt Lake County, Utah. The Project Area is located on the west side of the Jordan River, approximately 0.30 miles west of U.S. Interstate Highway 215 (I-215) (Figure 1). The Project Area is situated in portions of Sections 9 and 16 in Township 1 South, Range 2 West, Salt Lake Base and Meridian (SLB&M) (Figure 2a). The approximate street address for the Project Area is 2200 West 3200 North (Figure 2b).

The Project Area borders the Great Salt Lake shore lands, approximately 0.76 miles east of the Great Salt Lake (Figure 2a). Native surface topography ranges between approximately 4,215 feet and 4,222 feet and slopes east to west. The Project Area is bordered by 2200 West to the east, 3200 West to the west, and undeveloped ranch land and farm land to the north and south (Figure 2b). The Project Area is mostly unimproved rangeland that is currently used for livestock grazing and includes an old ranch house, several outbuildings, and an abandoned farm pond. An approximately 4,214 feet segment of the Rudy Drain stream channel crosses the southwestern portion of the Project Area (Figure 3). The Rudy Drain is an excavated channel that conveys irrigation water diverted from the Reclamation Ditch irrigation canal to duck clubs west of the Project Area (Figure 2a).

The excavated Rudy Drain stream channel, and four palustrine emergent wetlands totaling 9.81 acres bordering the Rudy Drain, were identified and delineated within the Project Area (Figure 3).

The purpose of this aquatic resources and waters of the U.S. delineation technical report is to provide the necessary documentation to obtain a preliminary jurisdictional determination (PJD) from the U.S. Army Corps of Engineers (USACE) verifying the results of this delineation report. The PJD is needed for assessing potential USACE permitting requirements and planning the future subdivision and development of the Project Area with State and Local agencies. A jurisdictional determination request form is provided in Appendix A of this report.

1.2 Directions to Project Area

From Bountiful, Utah, travel south on U.S. Interstate Highway 15 (I-15). In 3.2 miles, take Exit 313 for U.S. Interstate Highway 215 (I-215). Continue south on I-215 for 2.7 miles, then take Exit 25 for 2100 North. Travel west on 2100 North for approximately 0.3 mile before turning right (north) onto 2200 West. Continue north on 2200 West for 1.0 mile. A gated entrance on the west side of 2200 West can be used to access the Project Area (Figure 2b).

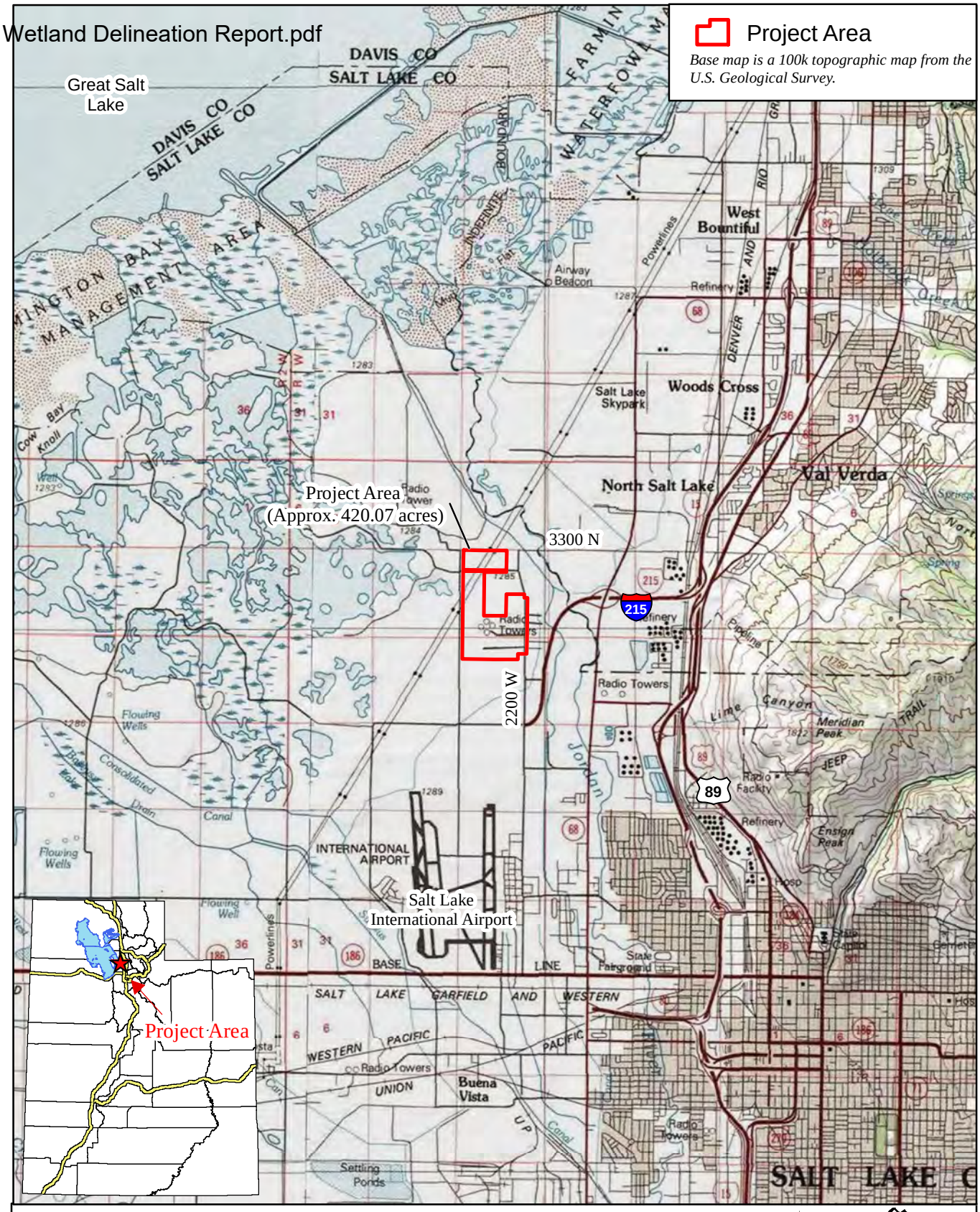


Figure 1. Site Vicinity Map
1:100,000 Scale Topographic Base.

N W E S

0 0.75 1.5 Miles

1 inch = 1.58 miles

FRONTIER CORPORATION USA
Environmental Consultants
221 N. Gateway Drive Suite B
Providence UT, 84332
(435) 753-9502

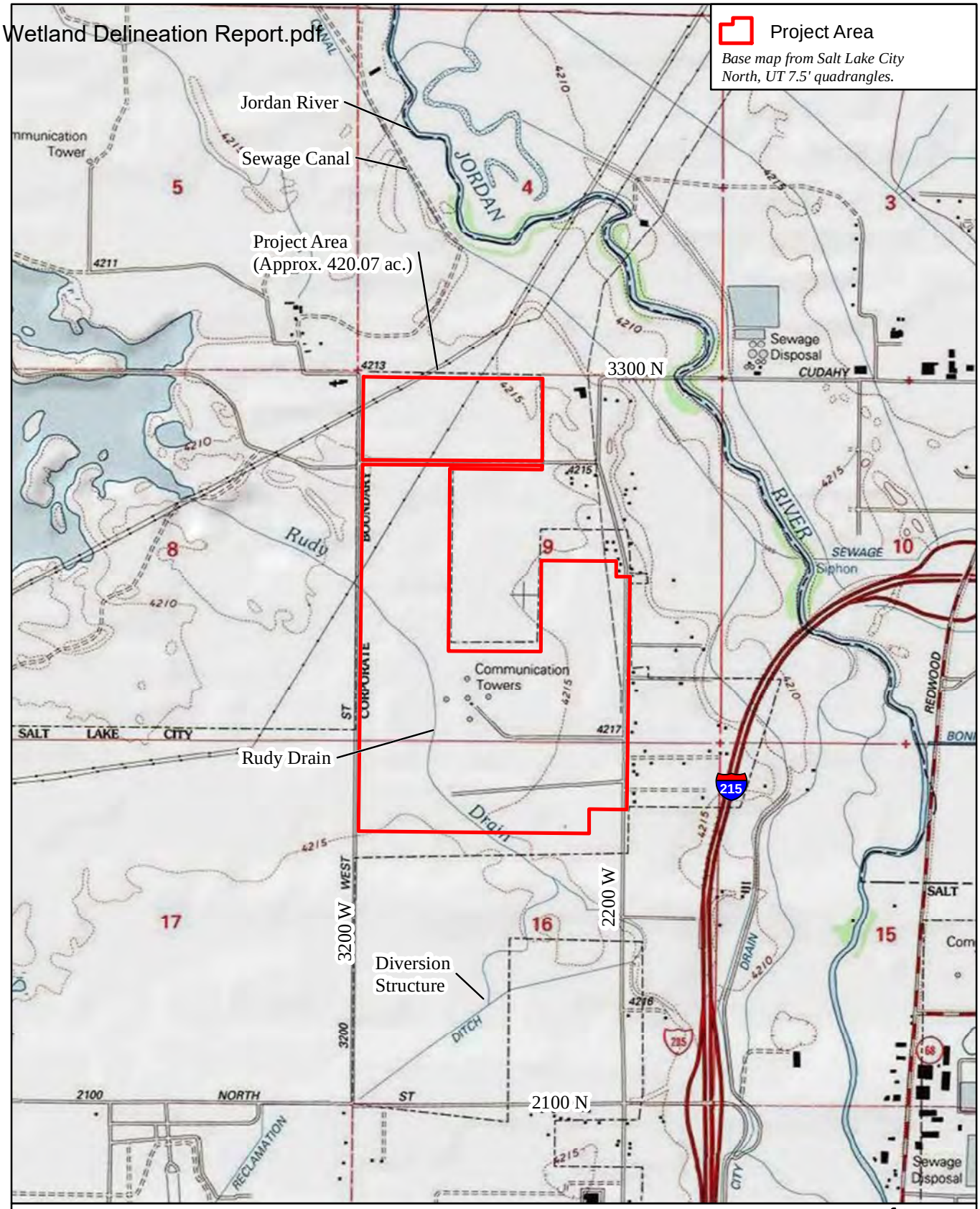


Figure 2a. Project Area Location Map
1:24,000 Scale Topographic Base.

N W E S

0 1,000 2,000 Feet

1 inch = 2,000 feet

FRONTIER CORPORATION USA
Environmental Consultants
221 N. Gateway Drive Suite B
Providence UT, 84332
(435) 753-9502

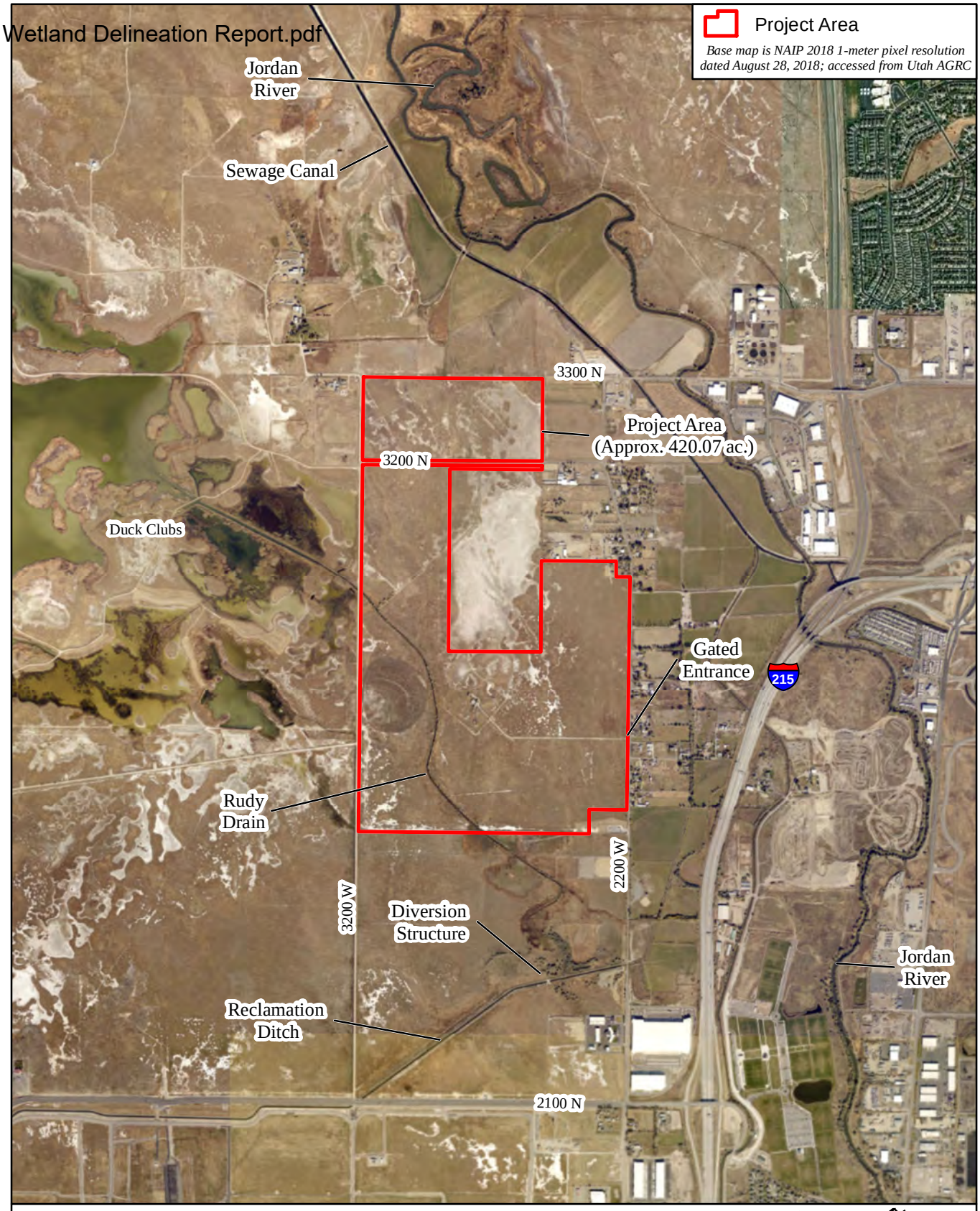


Figure 2b. Project Area Location Map
1:24,000 Scale Aerial Base.

N
W E
S

0 1,000 2,000 Feet

1 inch = 2,000 feet

FRONTIER CORPORATION USA
Environmental Consultants
221 N. Gateway Drive Suite B
Providence UT, 84332
(435) 753-9502

Wetlands	Wetland Habitat Type	Size (acres)	Length (feet)
Wetland A	Palustrine emergent marsh and wet meadow	2.40	-
Wetland B	Palustrine emergent marsh and wet meadow	5.40	-
Wetland C	Palustrine emergent saline wet meadow	0.95	-
Wetland D	Palustrine emergent saline wet meadow	1.06	-
	Total:	**9.81**	-
Water Features	**Aquatic Habitat Type**	**Size (acres)**	**Length (feet)**
Rudy Drain	Excavated stream channel	1.48	4,214

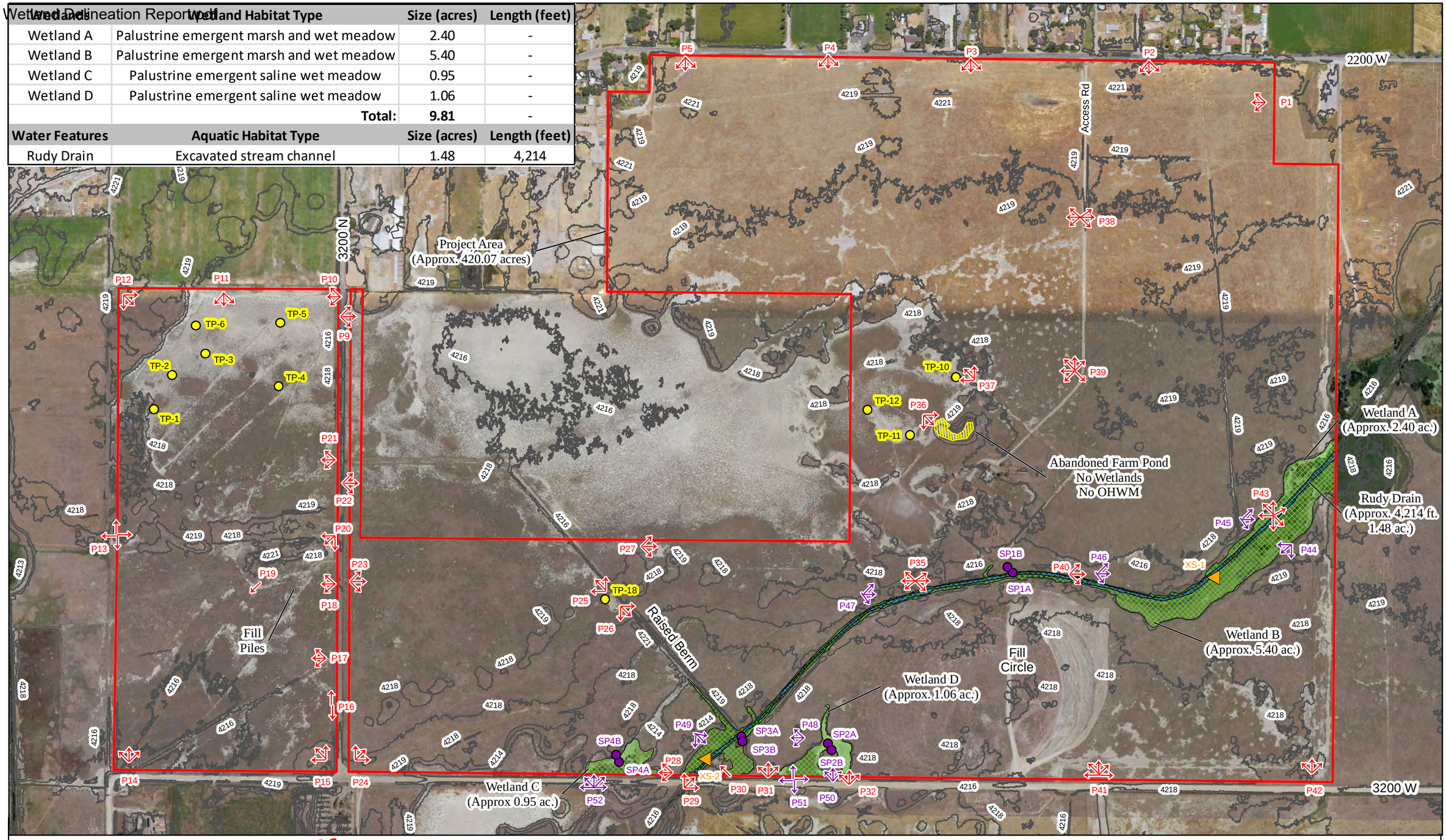


Figure 3. Delineation Survey Map
Map Date: 01/27/2021
Map By: P. McGuire
Aerial Imagery: Google Earth: Landsat / Copernicus
Imagery Date: September 11, 2020

Project Area
Rudy Drain
Wetlands
Abandoned Farm Pond
Test Pits
Sample Locations
OHWM Sample Points
Contour Intervals (1 ft.)
April 2021 Photo Location & View Direction
August 2021 Photo Location & View Direction

N

0 250 500 Feet
1 inch = 500 feet

FRONTIER CORPORATION USA
Environmental Consultants
221 N. Gateway Drive Suite B
Providence UT, 84332
(435) 753-9502

1.3 Scope of the Wetlands Investigation

The scope of the wetlands investigation included:

- Review of existing U.S. Geological Survey (USGS) mapping data, U.S. Department of Agriculture - Natural Resources Conservation Service (USADA-NRCS) Soil Survey data, and National Wetland Inventory (NWI) mapping data.
- Site inspections to identify, delineate and survey the locations of wetlands, streams, ponds and other potential waters of the U.S.
- Fieldwork to collect wetland and water features delineation data and photo document site conditions.
- Assessment of potential tributary or hydrologic connections between the Project Area and the Great Salt Lake.
- Preparation of this delineation technical report in accordance with USACE reporting and mapping standards.

1.4 Property Ownership

The Project Area is on land controlled by Scannell Properties. Adam Frankenberg is the contact person for Scannell Properties.

Adam Frankenberg, Project Manger
Scannell Properties, LLC
294 Grove Lane East, Suite 140
Wayzata, Minnesota 55391

Cell Phone: (952)913-5785
Email: adamf@scannellproperties.com

Scannell Properties is seeking a preliminary jurisdictional determination (PJD) to confirm the delineation results documented in this report. A jurisdictional determination request form is provided in Appendix A.

2.0 METHODS

2.1 Wetlands Delineation

Frontier scientists completed site inspections to delineate wetland boundaries and to document existing site conditions at the Project in April and August, 2021.

The presence or absence of wetlands was evaluated in accordance with the three-parameter approach (hydrology, soils, and vegetation) specified in the 1987 *Corps of Engineers Wetlands*

Delineation Manual (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008). Sample points were established, as needed, to characterize existing hydrological, soil, and vegetative conditions within the Project Area.

The presence or absence of hydrological indicators (e.g., standing water, alluvial deposits, root zone oxidation, drainage patterns, etc.) was noted at each sample point. Environmental changes in the vicinity that may have altered local hydrology (e.g., irrigation canals, drainage ditches, excavation, and earth moving activities, etc.) were also noted.

Soil pits were dug at each sample point to characterize soil profiles and soil/water conditions. Many of the pits were dug with a hydraulic track hoe to depths greater than 30 inches deep. Soil profiles were compared to soil unit descriptions provided in the Soil Survey for the area (USDA-SCS 1968). Soil horizonation, texture, moisture content, depth to saturation, and/or standing water were noted for each soil pit. The presence or absence of particulate organic matter, organic matter staining or streaking, redoximorphic features, and gleying were also noted if found. Soil colors were determined with *Munsell Soil Color Charts* (X-Rite 2009).

Plant species that occurred within an approximately 5-foot radius at each sample point were recorded. The relative occurrence of dominant species was estimated visually. Dominant plant species were identified in accordance with the USACE's 50/20 Rule. Plant identification was determined using: *Vascular Plants of Northern Utah, an Identification Manual* (Shaw 1989), *Weeds of the West* (Whitson et al. 2006), and *U.S. Department of Agriculture Natural Resources Conservation Service Plants Database* (USDA-NRCS 2021). The USACE's Arid West 2018 Regional Wetland Plant List (USACE 2018) was used to determine wetland indicator status for each species. The *USDA-NRCS Plants Database* taxonomic nomenclature was used for species not listed on the USACE's 2018 Arid West Regional Wetland Plant List.

A total of 18 delineation sample points were completed to document existing site conditions. This included eight paired sample points to delineate Wetlands A, B, C, and D boundaries and ten sample points at test pits that were excavated with a backhoe in areas that were shown as potential playa wetlands on the NWI mapping data (Figure 3). The ten test pits ranged from 38 to 46 inches in depth. Test pits were dug in April to document depth-to-groundwater. The hydrologic, soil, and vegetative data was recorded at each sample point and was transcribed onto USACE Wetland Determination Data Forms - Arid West Region (Version 2.0) (Appendix B). Of the 18 delineation sample points, 10 had 38- to 46-inch deep soil pits that were dug with a back hoe in areas that could potentially be classified as wetlands.

Appendix C contains photographs of the site taken during the delineation site inspections. Photos depict current site conditions throughout the Project Area as well as delineation sample points. The photographs provide a photo record that will help the reader better visualize the existing site conditions at the time the delineation fieldwork was completed.

The delineated wetland boundaries were marked in the field and surveyed by Frontier using a sub-meter Trimble Geo-7x GPS unit. The delineation survey data was incorporated into a GIS

database to produce the wetland delineation survey maps for the Project Area. Soil Survey map data and NWI map data were obtained through online databases and were also incorporated into the GIS database to prepare Soil Survey and NWI map figures.

2.2 Waters of the U.S. Ordinary High Water Mark Assessment

A segment of the Rudy Drain stream channel is located within the Project Area boundaries. The channel was delineated based on the presence of an ordinary high water mark (OHWM). OHWM datasheets were completed at two sample points along the Rudy Drain channel to document delineated boundaries (Figure 3).

The evaluation of OHWM indicators included:

- Evidence of fluctuating water levels and/or a distinct waterline.
- Sediment sorting.
- Distinct topographical breaks on stream or pond banks.
- Distinct breaks in vegetation caused by flowing or ponded water.
- Deposition of water-borne debris and/or wracking.
- Scouring and/or shelving on channel banks or pond banks.
- Water stains on vegetation, rocks, culverts and other structures.

Cross-sectional dimensions and the presence/absence of OHWM indicators were documented on a standardized USACE OHWM data sheet (Appendix B). Photos of the OHWM sample points are also included in the photo logs (Appendix C).

2.3 Jurisdictional Assessment

Delineated wetland and aquatic resources were evaluated for potential hydrologic or tributary connections between the Project Area and a traditional navigable water (TNW) (i.e., the Great Salt Lake) by reviewing USGS 7.5 minute topographic quadrangle maps, NWI map data, and Google Earth aerial imagery.

3.0 EXISTING SITE CONDITIONS

Approximately 4,214 linear feet (1.48 acres) of the excavated **Rudy Drain stream channel** was delineated within the Project Area boundaries (Figure 3, Table 1). This is a shallow, silty bottom channel that appears to be regularly dredged. Within the Project Area, the OHWM ranges from 19.5 to 23.25 feet wide and 3.0 to 2.5 feet deep depending on location along the drain channel. The channel conveys irrigation water that is diverted from the Reclamation Ditch irrigation canal approximately 0.40 mile south of the Project Area (Figure 2b).

Table 1. Wetlands and water features delineated within the Project Area.

Wetlands	Wetland Habitat Type	Size (acres)	Length (feet)
Wetland A	Palustrine emergent marsh and wet meadow	2.40	-
Wetland B	Palustrine emergent marsh and wet meadow	5.40	-
Wetland C	Palustrine emergent saline wet meadow	0.95	-
Wetland D	Palustrine emergent saline wet meadow	1.06	-
	Total	**9.81**	-
Water Features	**Aquatic Habitat Type**	**Size (acres)**	**Length (feet)**
Rudy Drain	Excavated stream channel	1.48	4,214

Two of the delineated wetlands (A & B) border the Rudy Drain channel. Russian olive trees are found along the wetland/upland border. For the purpose of this delineation report, the wetlands were delineated separately on the east and west sides of the drain channel.

Wetland A (2.40 acres) and **Wetland B** (5.40 acres) are palustrine emergent marsh and wet meadow that borders the Rudy Drain. Water from Rudy Drain is the main source of hydrology for Wetlands A and B. Wetland plant species observed in Wetlands A and B include: narrowleaf cattail (Typha angustifolia), common reed (Phragmites australis), saltgrass (Distichlis spicata), Baltic rush (Juncus balticus), foxtail barley (Hordeum jubatum), and annual rabbitsfoot grass (Polypogon monspeliensis).

Wetland C (0.95 acres) and **Wetland D** (1.06 acres) are sparsely vegetated palustrine emergent saline wet meadow wetlands that border the west boundary of the Project Area to the north and south of Rudy Drain. A seasonally high water table and water from Rudy Drain are the primary sources of hydrology for Wetlands C and D. An off-site roadside ditch runs along the western Project Area boundary and connects Wetland C to Wetland D. A breach in the roadside ditch allows potential flows from the Rudy Drain into Wetland D. Wetland soils were dry at the time of the August 2021 site inspections; however, saturation is assumed during the normal Spring growing season. Common wetland plant species include iodinebush (Allenrolfea occidentalis), saltgrass (Distichlis spicata), and western seepweed (Suaeda occidentalis).

An **abandoned man-made farm pond** (0.24 acres) is located on the east side of an existing ranch house. No wetlands were observed in association with the abandoned pond. The pond was dry and had no evidence of an OHWM that would be indicative of recent or active use. It appears the pond was fed by an old artesian well.

3.1 Soils

The USDA-NRCS Soil Survey data indicate that the Project Area is underlain by three soil units (Figure 4):

Jo - Jordan-Saltair complex, 0 to 1 percent slopes
Lk - Leland fine sandy loam, 0 to 1 percent slopes
SPL – Saltair-Playas-Lasil complex, 0 to 1 percent slopes

Project Area

Salt Lake Area Soil Survey

Soil units acquired from the NRCS web soil survey at: http://websoilsurvey.nrcs.usda.gov/

Soil Units

Jo- Jordan-Saltair complex, 0 to 1 percent slopes*
Lk- Leland fine sandy loam, 0 to 1 percent slopes*
SPL- Saltair-Playas-Lasil complex, 0 to 1 percent slopes*
*Soil units included in the Salt Lake Area hydric soils list

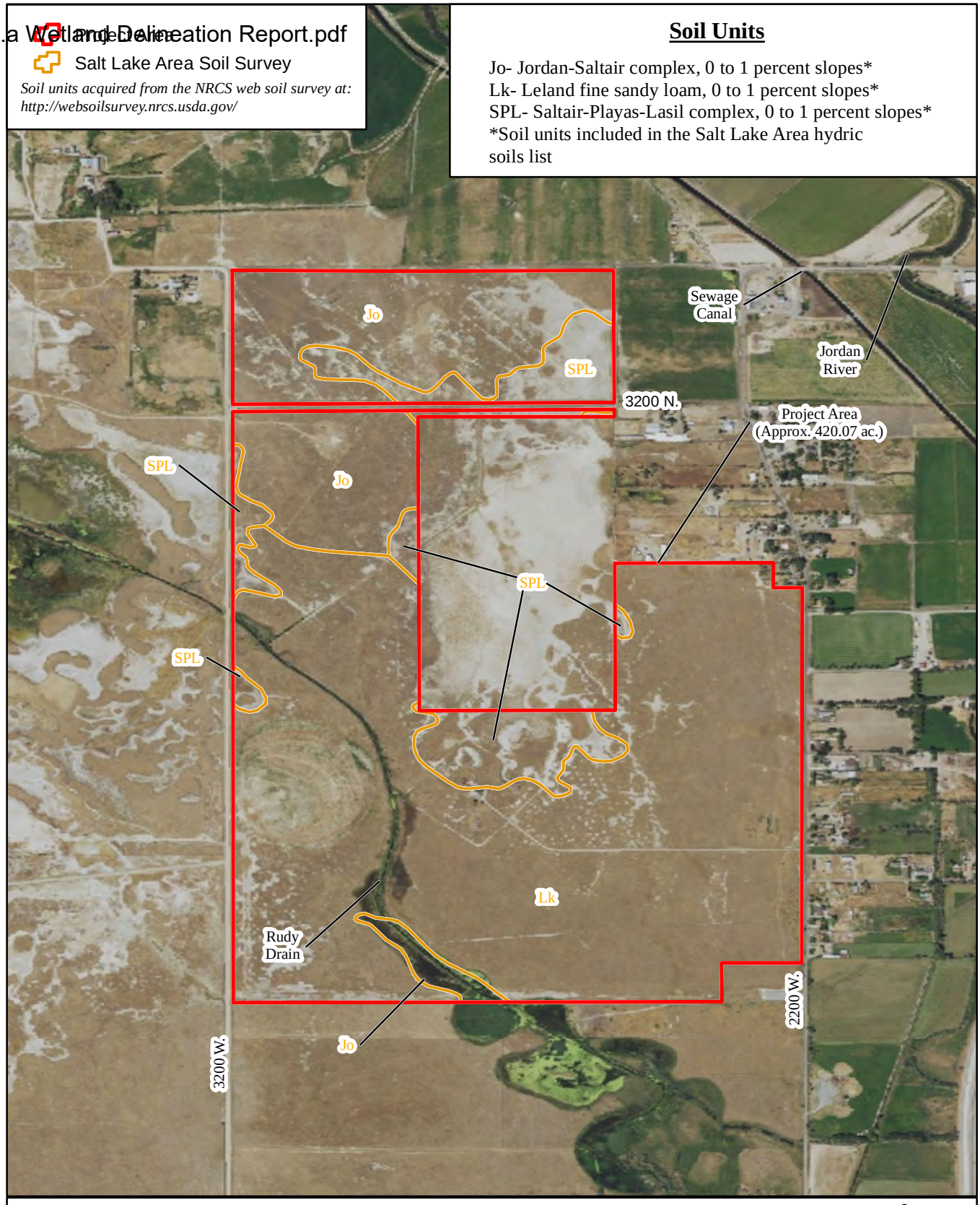


Figure 4. Soil Survey Map

0 630 1,260 Feet

1 inch = 1,250 feet

N W E S

Date Prepared: September 15, 2021
Map Preparer: P. McGuire
Aerial Image Source: NAIP Imagery
Aerial Image Date: August 28, 2018

FRONTIER CORPORATION USA
Environmental Consultants
221 N. Gateway Drive Suite B
Providence UT, 84332
(435) 753-9502

The soil survey mapping data was obtained online from the USDA-NRCS website http://websoilsurvey.nrcs.usda.gov/. Each soil unit was cross-referenced with the National Hydric Soils List http://soils.usda.gov/use/hydric. All of the soil units within the Project Area are included on the Hydric Soils List for the Salt Lake Area soil survey.

All three soil units are included on the Utah Hydric Soil List. Soils included on the hydric soils list typically have poor drainage characteristics and tend to have a prevalence of supporting wetland conditions if ample water sources are present. The USDA indicates that "caution must be used when comparing the list of hydric components to soil survey maps. Many of the soils on the list have ranges in water table depths that allow the soil component to range from hydric to non-hydric depending on the location of the soil within the landscape as described in the map unit. Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but they are not a substitute for observations made during on-site investigations."

The following descriptions for the three soil units are from the *Soil Survey of Salt lake Area, Utah* (USDA-SCS 1968).

Jordan-Saltair complex, 0 to 1 percent slopes (Jo). This soil occurs on lake plains. The parent material is lacustrine deposits. The soil is somewhat poorly drained. In a typical profile, the surface layer (0 to 2 inches) is silt loam, underlain with silty clay loam (2 to 9 inches), silty clay (9 to 43 inches), and silt loam (43 to 60 inches). The depth to the water table is approximately 30 to 48 inches below the surface.

Leland fine sandy loam, 0 to 1 percent slopes (Lk). This soil occurs on lake plains. Parent material is lacustrine deposits. The soil is somewhat poorly drained and has very low to moderately low permeability. In a typical profile, the surface layer (0 to 8 inches) is a fine sandy loam, underlain with sandy clay loam (8 to 15 inches), clay loam (15 to 28 inches), silty clay loam (28 to 35 inches), and fine sand (35 to 60 inches). The depth to the water table is approximately 30 to 48 inches below the surface.

Saltair-Playas-Lasil complex, 0 to 1 percent slopes (SPL). This soil occurs on lake plains. Parent material is lacustrine deposits derived from mixed sources. The soil is poorly drained and has very low to moderately low permeability. In a typical profile, the surface layer (0 to 20 inches) is a silty clay loam, underlain with silt loam (20 to 30 inches), and silty clay loam (30 to 60 inches). The depth to the water table is approximately 10 to 20 inches below the surface.

Soil profiles observed at the delineation sample points generally matched the soil unit descriptions.

Soil profiles observed in the wetland sample points ranged from clay, silty clay, clay loam, silt loam, and sand. Typical soil colors at the wetland sample points included: 10YR 6/2, 10YR 5/2, 10 YR 4/1, 10YR 2/2, 5Y 6/2, and 5Y 4/2. Soils at the wetland sample points met the Depleted Matrix (F3) and Depleted Below Dark Surface (A11) hydric soils indicator criteria.

Soils profiles observed in the upland paired sample points contained clay, clay loam, and silt loam. None of the paired upland sample points met the wetland delineation criteria for hydric soils or hydrology. Soils were dry in the upper profile with water tables deeper than 18 inches below surface. Typical soil colors at the upland paired sample points included: 10 YR 4/2, 10YR 3/2, 10YR 4/3, and 10YR 3/3.

Soil profiles observed in the ten excavated test pits contained clay, silty clay, silt loam, and sand. None of the test pit samples met the wetland delineation criteria for hydric soils and none of the test pits had evidence of surface water hydrology. Soils in the upper profiles of the test pits were dry with water tables deeper than 38 inches below the surface when measured in April 2021. Depleted soil layers or layers with distinct redox are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels and are not representative of current hydrology conditions to indicate hydric soils criteria. Typical soil colors at the upland test pits included: 5Y 5/3, 5Y 6/2, 2.5Y 5/2, and 10 YR 4/2.

3.2 Vegetation

A list of the upland and wetland plant species observed in the Project Area and their assigned wetland indicator status is provided in Table 2.

Table 2. Common plant species observed in the Project Area.

Upland Plant Species[1]	Scientific Name[1]	USACE Arid West Indicator Status[1]
bulbous bluegrass	*Poa bulbosa*	FACU
bull thistle	*Cirsium vulgare*	FACU
chicory	*Cichorium intybus*	FACU
clasping pepperweed	*Lepidium perfoliatum*	FACU
common dandelion	*Taraxacum officinale*	FACU
curly-cup gumweed	*Grindelia squarrosa*	FACU
great mullein	*Verbascum thapsus*	FACU
greasewood	*Sarcobatus vermiculatus*	FACU
lamb's quarters	*Chenopodium album*	FACU
wall barley	*Hordeum murinum*	FACU
cheatgrass	*Bromus tectorum*	UPL
hoary cress (white top)	*Cardaria draba*	UPL
intermediate wheatgrass	*Thinopyrum intermedium*	UPL
Scotch cottonthistle	*Onopordum acanthium*	UPL
Wetland Indicator Plant Species[1]	**Scientific Name[1]**	**USACE Arid West Indicator Status[1]**
black medick	*Medicago lupulina*	FAC
broadleaf pepperweed	*Lepidium latifolium*	FAC
coastal saltgrass	*Distichlis spicata*	FAC
curly dock	*Rumex crispus*	FAC
fox-tail barley	*Hordeum jubatum*	FAC
prostrate knotweed	*Polygonum aviculare*	FAC

Wetland Indicator Plant Species[1]	Scientific Name[1]	USACE Arid West Indicator Status[1]
quackgrass	*Elymus repens*	FAC
Russian olive	*Elaeagnus angustifolia*	FAC
alkali grass	*Puccinellia distans*	FACW
annual rabbit's-foot grass	*Polypogon monspeliensis*	FACW
Baltic rush	*Juncus balticus*	FACW
common reed	*Phragmites australis*	FACW
iodine bush	*Allenrolfea occidentalis*	FACW
lady's thumb	*Persicaria maculosa*	FACW
verrucose seapurslane	*Sesuvium verrucosum*	FACW
western seepweed	*Suaeda occidentalis*	FACW
Chairmaker's bulrush	*Schoenoplectus americanus*	OBL
common three-square	*Schoenoplectus pungens*	OBL
narrowleaf cattail	*Typha angustifolia*	OBL

Indicator Category [2]		Definition
Obligate (OBL)	Hydrophyte	Almost always occur in wetlands
Facultative Wetland (FACW)	Hydrophyte	Usually occur in wetlands; but may occur in non-wetlands
Facultative (FAC)	Hydrophyte	Occur in wetlands and non-wetlands
Facultative Upland (FACU)	Non-hydrophyte	Usually occur in non-wetlands, but may occur in wetlands
Upland (UPL)	Non-hydrophyte	Almost never occur in wetlands

1 Common names and scientific names as per USACE 2018 Regional Wetland Plant List.
2 Indicator statuses as identified in the USACE 2018 Regional Wetland Plant List.

3.3 Hydrology

The Rudy Drain stream channel has relatively permanent flows. Surface flows from the drain channel are the primary sources of hydrology for the four delineated wetlands (Wetlands A, B, C, and D).

The remainder of the Project Area shows no evidence of recent irrigation and receives water by seasonal surface runoff from precipitation and irrigation drainage from adjacent farm fields. Review of historic Google Earth imagery shows winter saturation on the playa-like areas in the northern and central portions of the Project Area. These areas have clay soils with very low permeability. Winter saturation is not indicative of a high water table or wetland hydrology during the growing season according to the data collected from the test pits in these areas.

The ten soil test pits dug with a backhoe were dry with no water table or soil saturation at the time of the April 23 and August 09, 2021 site inspections (Table 3). There is no evidence of an OHWM that would be indicative of a playa pond. Sparse vegetation cover is due to hyper saline soils and not seasonal ponding.

Table 3. Water table depths at excavated test pits April & August 2021.

Excavated Test Pit Sample Points	Location	Pit Depth (Inches)	Depth to Water Table April 2021	Depth to Water Table August 2021
TP-1	Upland	44	Dry	Dry
TP-2	Upland	46	Dry	Dry
TP-3	Upland	43	Dry	Dry
TP-4	Upland	43	Dry	Dry
TP-5	Upland	45	Dry	Dry
TP-6	Upland	39	Dry	Dry
TP-10	Upland	38	Dry	Dry
TP-11	Upland	45	Dry	Dry
TP-12	Upland	42	Dry	Dry
TP-18	Upland	42	Dry	Dry

4.0 NATIONAL WETLAND INVENTORY DATA

Figure 5 shows the NWI mapping data that was obtained from the USFWS website: www.fws.gov/wetlands/Wetlands-Mapper.html. The NWI mapping was originally completed by the photo-interpolation of high altitude, color infrared aerial photography flown in the 1980s.

The NWI data uses the Cowardin classification system (Cowardin et al., 1979). The NWI data shows one PEM1/USA (Palustrine Emergent Persistent/Unconsolidated Shore, Temporarily Flooded) wetland, one PEM1C (Palustrine Emergent Persistent, Seasonally Flooded) wetland, one PEM5C (Palustrine Emergent Persistent, Phragmites australis, Seasonally Flooded) wetland, two PUSA (Palustrine Unconsolidated Shoreline, Temporarily Flooded) wetlands, and one R2UBGx (Riverine Lower Perennial Unconsolidated Bottom, Intermittently Exposed, Excavated) wetland within the Project Area boundaries.

- PEM1/USA wetland roughly correlates to the extent of the saline playa-like areas in the northern and central portions of the Project Area. No wetlands were identified in these locations; test pit data collected in these areas did not meet the wetland delineation criteria.

- PEM1C wetland generally correlates to the larger southern portion of Wetland A along Rudy Drain.

- PEM5C wetland generally correlates to the larger southern portion of Wetland B along Rudy Drain.

- PUSA wetlands roughly correlate with the locations of Wetlands C and D at the western boundary of the Project Area.

- R2UBGx follows the flow path of the Rudy Drain Stream channel.

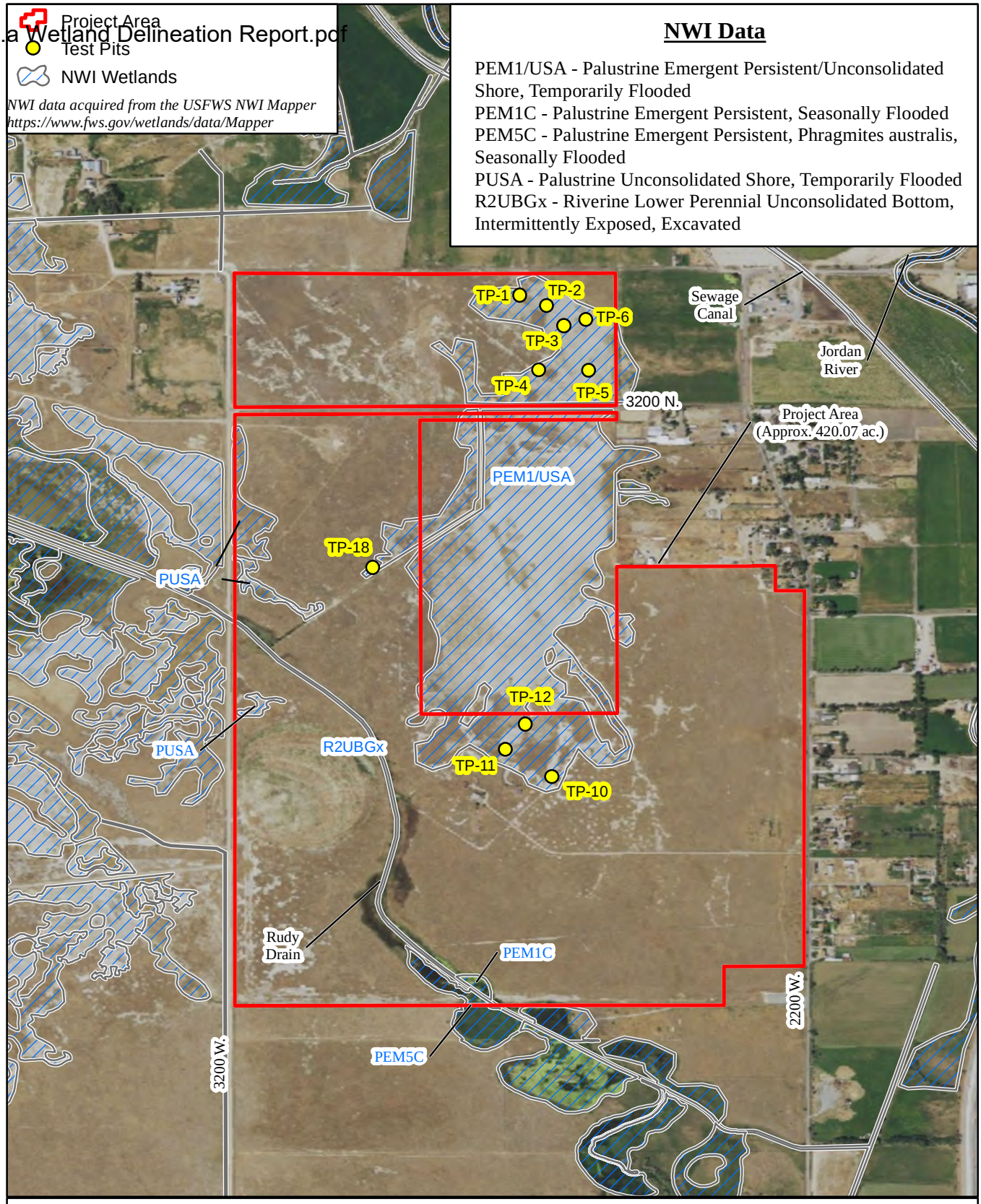


Figure 5. National Wetlands Inventory Map

0 625 1,250 Feet

1 inch = 1,250 feet

N W E S

Date Prepared: September 15, 2021
Map Preparer: P. McGuire
Aerial Image Source: NAIP Imagery
Aerial Image Date: August 28, 2018

FRONTIER CORPORATION USA
Environmental Consultants
221 N. Gateway Drive Suite B
Providence UT, 84332
(435) 753-9502

5.0 JURISDICTIONAL ASSESSMENT

The National Hydrography Dataset (NHD) includes the mapping of the Nation's surface water drainage network of rivers, streams, lakes, ponds, dams, reservoirs and other water features. NHD data were obtained from the USGS National Geospatial Program, National Map database (http://viewer.nationalmap.gov). The NHD flow paths for the general vicinity of the Project Area are shown on Figure 6. The NHD flow paths show the major drainage patterns and potential tributary connections to the Great Salt Lake.

NHD flow paths are shown along the western portion of the Project Area and outside the south Project Area boundary. The northwest flow path correlates with the Rudy Drain. The NHD data generally matches the surface water drainages shown on the USGS 7.5' topographic quadrangle

mapping (Figure 2a) and confirms that the Rudy Drain is the only surface water flow path in the general area, and that there are no other tributary streams in or adjacent to the Project Area.

The Rudy Drain appears to have been excavated in an old Jordan River meander that connects to wetlands bordering the Great Salt Lake. The river meander contains Wetlands A, B, C, and D. Rudy Drain and Wetlands A, B, C, and D all have drainage connections to the wetlands bordering the Great Salt Lake west of the Project Area. These aquatic resource features would therefore likely be classified as jurisdictional wetlands. None of the playa-like areas that were sampled with test pits have any drainage connections to the Rudy Drain.

6.0 SUMMARY

Frontier completed an aquatic resources and wetlands delineation on behalf of Scannell Properties LLC for an approximately 420.07-acre Project Area located in Salt Lake City, Salt Lake County, Utah. The Project Area is located on the west side of the Jordan River, approximately 0.30 miles west of I-215 (Figure 1). The Project Area is situated in portion of Sections 9 and 16 in Township 1 South, Range 2 West, SLB&M (Figure 2a). The approximate street address for the Project Area is 2200 West 3200 North (Figure 2b).

The Project Area is mostly unimproved rangeland that is currently used for livestock grazing and includes an old ranch house, several outbuildings, and an abandoned farm pond. A segment of the Rudy Drain excavated stream channel crosses the southwestern portion of the Project Area (Figure 3).

Approximately 4,214 feet of the Rudy Drain stream channel and four wetlands (Wetland A, B, C, and D) totaling 11.29 acres were delineated in the Project Area (Figure 3, Table 1). The Rudy Drain stream channel is a potential jurisdictional water of the U.S. because it has a tributary connection to the wetlands bordering the Great Salt Lake west of the Project Area (Figure 1). Wetlands A, B, C, and D are potentially jurisdictional because these wetlands are physically

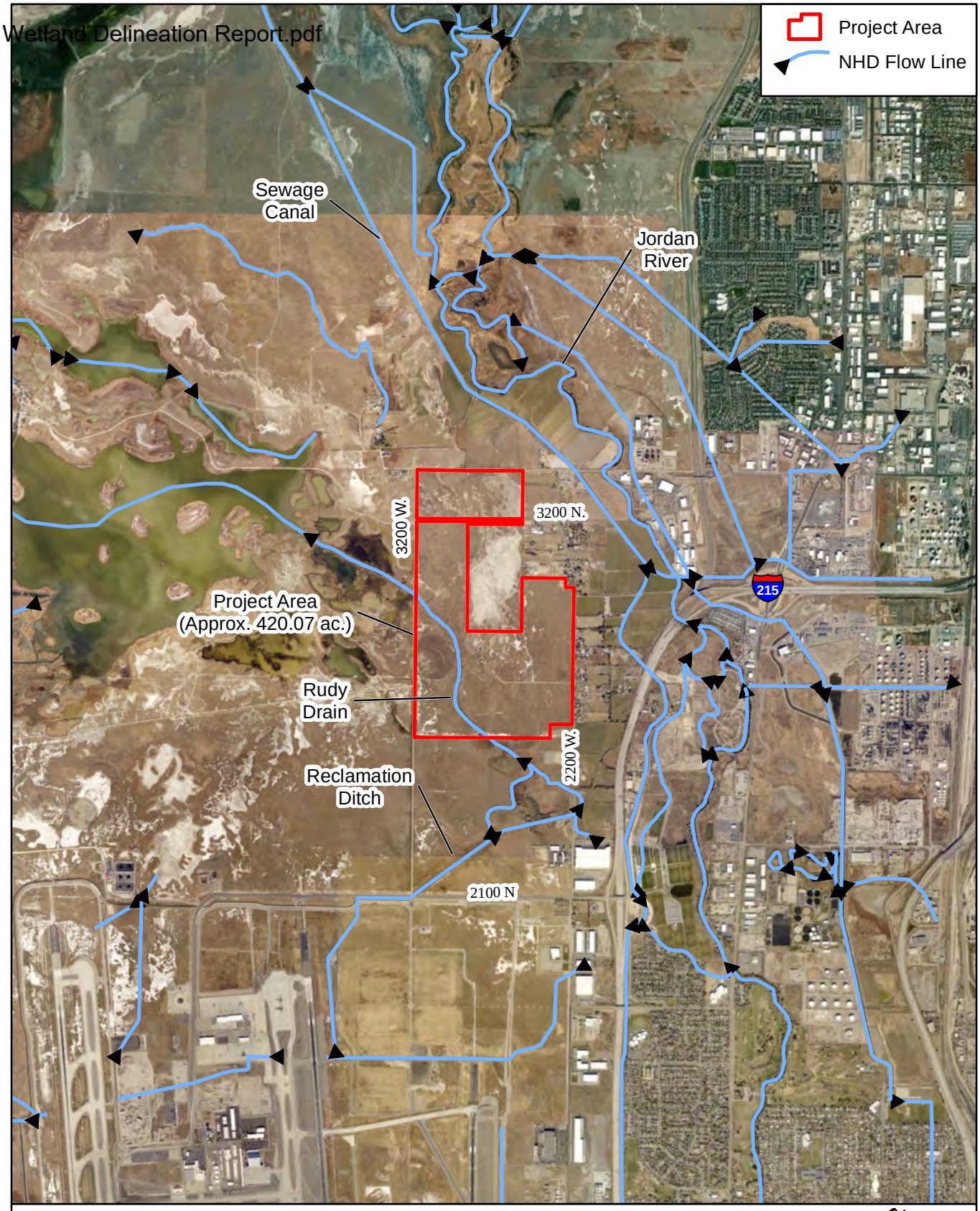


Figure 6. National Hydrography Dataset Map

Hydrography Data from USGS National Hydrography Dataset.

N W E S

0 1,700 3,400 Feet

1 inch = 3,400 feet

FRONTIER CORPORATION USA
Environmental Consultants
221 N. Gateway Drive Suite B
Providence UT, 84332
(435) 753-9502

adjacent to the Rudy Drain channel (Figure 3). The remainder of the Project Area is saline rangeland and upland pasture fields.

On behalf of Scannell Properties LLC, Frontier is requesting a preliminary jurisdictional determination (PJD) to confirm the delineation results documented in this report. A jurisdictional determination request form is provided in Appendix A granting the USACE permission to enter the Project Area to review the delineation results.

7.0 REFERENCES CITED

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Dept. of Interior U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C. FWS/OBS79/31.

Shaw, R. J. 1989. *Vascular Plants of Northern Utah: an Identification Manual.* Utah State University Press, Logan, UT

U.S. Army Corps of Engineers (USACE). 1987. *Corps of Engineers Wetlands Delineation Manual.* Wetlands Research Program Technical Report Y-87-1. Environmental Laboratory. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

USACE. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). ERDC/EL TR-08-28.* Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USACE. 2018. *Arid West 2018 Regional Wetland Plant List.* U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory (CRREL). http://wetland-plants.usace.army.mil/nwpl_static/v34/home/home.html

U.S. Department of Agriculture Soil Conservation Service (USDA-SCS). 1968. *Soil Survey Salt Lake Area, Utah*. U.S. Dept. of Agriculture Soil Conservation Service in cooperation with Utah Agriculture Experiment Station. U.S. Govt. Printing Office, Washington, D.C.

U.S. Department of Agriculture Natural Resources Conservation Service (USDA-NRCS). 2021. *USDA-NRCS Plants Database*. http://plants.usda.gov. Accessed August 2021.

Utah Automated Geographic Reference Center (Utah AGRC). 2021. *Utah GIS Portal.* Map and aerial imagery data obtained online at: http://gis.utah.gov.

Whitson, Tom D., Larry C. Burrill, Steven A. Dewey, David W. Cudney, B.E. Nelson, Richard D. Lee, and Robert Parker. Whitson, Tom D. (ed.). 2006. *Weeds of the West*. 9th ed. Laramie: University of Wyoming. ISBN: 0-941570-13-4.

X-Rite. 2009. *Munsell Soil Color Charts*. Produced by Munsell Color, Grand Rapids, MI.

APPENDIX A

Request for Aquatic Resources Delineation Verification

REQUEST FOR AQUATIC RESOURCES DELINEATION VERIFICATION

OR JURISDICTIONAL DETERMINATION

A separate jurisdictional determination (JD) is not necessary to process a permit. An Approved Jurisdictional Determination (AJD) is required to definitively determine the extent of waters of the U.S. and is generally used to disclaim jurisdiction over aquatic resources that are not waters of the U.S., in cases where the review area contains no aquatic resources, and in cases when the recipient wishes to challenge the water of the U.S. determination on appeal. Either an Aquatic Resources Delineation Verification or a Preliminary Jurisdictional Determination (PJD) may be used when the recipient wishes to assume that aquatic resources are waters of the U.S. for the purposes of permitting. In some circumstances an AJD may require more information, a greater level of effort, and more time to produce. If you are unsure which product to request, please speak with your project manager or call the Sacramento District's general information line at (916) 557-5250.

I am requesting the product indicated below from the U.S. Army Corps of Engineers, Sacramento District, for the review area located at:

Street Address: 2200 West 3200 North City: Salt Lake City County: Salt Lake
State: UT Zip: 84116 Section: 09 & 16 Township: 1 South Range: 2 West
Latitude (decimal degrees): 40.828852° Longitude (decimal degrees): -111.961475°
The approximate size of the review area for the JD is 420.07 acres. **(Please attach location map)**

Choose one:
- ○ I own the review area
- ○ I hold an easement or development rights over the review area
- ○ I lease the review area
- ○ I plan to purchase the review area
- ◉ I am an agent/consultant acting on behalf of the requestor
- ○ Other:

Choose one product:
- ○ I am requesting an Aquatic Resources Delineation Verification
- ○ I am requesting an Approved JD
- ◉ I am requesting a Preliminary JD
- ○ I am requesting additional information to inform my decision about which product to request

Reason for request: (check all that apply)
- ☑ I need information concerning aquatic resources within the review area for planning purposes.
- ☐ I intend to construct/develop a project or perform activities in this review area which would be designed to avoid all aquatic resources.
- ☐ I intend to construct/develop a project or perform activities in this review area which would be designed to avoid those aquatic resources determined to be waters of the U.S.
- ☐ I intend to construct/develop a project or perform activities in this review area which may require authorization from the Corps; this request is accompanied by my permit application.
- ☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district's list of navigable waters under Section 10 of the Rivers and Harbors Act of 1899 and/or is subject to the ebb and flow of the tide.
- ☐ My lender, insurer, investors, local unit of government, etc. has indicated that an aquatic resources delineation verification is inadequate and is requiring a jurisdictional determination.
- ☐ I intend to contest jurisdiction over particular aquatic resources and request the Corps confirm that these aquatic resources are or are not waters of the U.S.
- ☐ I believe that the review area may be comprised entirely of dry land.
- ☑ Other: Abandoned man-made farm pond present. This feature does not meet aquatic resource delineation criteria.

Attached Information:
- ☑ Maps depicting the general location and aquatic resources within the review area consistent with Map and Drawing Standards for the South Pacific Division Regulatory Program (Public Notice February 2016, http://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/651327/updated-map-and-drawing-standards/)
- ☑ Aquatic Resources Delineation Report, if available, consistent with the Sacramento District's Minimum Standards for Acceptance (Public Notice January 2016, http://1.usa.gov/1V68IYa)

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the review area. Your signature shall be an affirmation that you possess the requisite property rights for this request on the subject property.

*Signature: Dennis Wenger Date: 09/21/2021
Name: Dennis Wenger on behalf of Scannell Properties, LLC Company name: Frontier Corporation USA
Address: 221 N. Gateway Drive, Suite B
Telephone: 435-753-9502 Email: dwenger@frontiercorp.net

***Authorities:** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

APPENDIX B

Wetland Determination Datasheets

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/04/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: SP1A
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: Range: S9, T1N, R1W	**WETLAND A**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.828604	Long: -111.963637	Datum: WGS 84
Soil Map Unit Name: Leland fine sandy loam, 0 to 1 percent slopes	NWI classification: R2UBGx	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation N ,Soil N , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?**	**Yes:X No:**
Hydric Soil Present?	Yes: X	No:		
Wetland Hydrology Present?	Yes: X	No:		

Remarks: Sample Point 1 A (SP1A) located in Wetland A. Wetland A is a thin ribbon of wetland adjacent to Rudy Drain. SP1A is approximately two feet lower in elevation than upland SP1B.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size:_____)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Herb Stratum (Plot Size:___5 ft.__)			
1. *Pesicaria maculosa*	25	Y	FACW
2. *Medicago lupulina*	20	Y	FAC
3. *Typha angustifolia*	10	N	OBL
4. *Thinopyrum intermedium*	2	N	UPL
5. *Cichorium intybus*	1	N	FACU
6. *Chenopodium album*	Trace	N	FACU
7.			
8.			
	58	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species:	10	x 1 =	10
FACW species:	25	x 2 =	50
FAC species:	20	x 3 =	60
FACU species:	1	x 4 =	4
UPL species:	2	x 5 =	10
Column Totals:	58 (A)		134 (B)

Prevalence Index = B/A = 2.31

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X No:**

Remarks: Wetland A plant community is mix of marsh and wet meadow plant species.

SOILS

Sampling Point: SP1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **WETLAND A**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1						Clay	Shells present, no redox
6-18+	10YR 5/2	79	7.5YR 5/8	1	C	M	Silty Clay	
6-18+	Gley1 4/N	20					Silty Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			**Indicators for Problematic Hydric Soils[3]:**
	Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
	Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
	Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
	Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
	Stratified Layers (A5) (**LRR C**)	X Depleted Matrix (F3)	Other (Explain in Remarks)
	1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
	Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
	Thick Dark Surface (A12)	Redox Depressions (F8)	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
	Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
	Sandy Gleyed Matrix (S4)		

Restrictive Layer (if present):		
Type:		
Depth (inches):	**Hydric Soil Present?**	**Yes:X** **No:**

Remarks: Soils saturated at a depth of 3 inches below the surface. Redox beginning at 6 inches below the surface. Soils meet the hydric soil indicator criteria for Depleted Matrix (F3).

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (any one indicator is sufficient)			Secondary Indicators (2 or more required)
	Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
X	High Water Table (A2) (Assumed)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
	Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
	Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
	Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
	Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
	Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
	Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes:	___	No	X	Depth (inches):		
Water Table Present?	Yes:	X	No	___	Depth (inches):	16	**Wetland Hydrology Present?** **Yes:X** **No:**
Saturation Present? (incl. capillary fringe)	Yes:	X	No		Depth (inches):	3	

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Water table at 16 inches below surface assumed to be within 12 inches of soil surface during Spring growing season. Saturation beginning at 3 inches below the surface.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/04/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: SP1B
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.828626	Long: -111.963610	Datum: WGS 84
Soil Map Unit Name: Leland fine sandy loam, 0 to 1 percent slopes	NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation N ,Soil N , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes:	No: X	**Is the Sampled Area within a Wetland?**	**Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X		
Wetland Hydrology Present?	Yes:	No: X		

Remarks: Sample Point 1B (SP1B) taken in upland adjacent to Wetland A. SP1B is approximately two feet higher in elevation than Wetland SP1A.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size:_____)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1. *Thinopyrum intermedium*	40	Y	UPL
2. *Distichlis spicata*	15	Y	FAC
3. *Polygonum aviculare*	Trace	N	FAC
4.			
5.			
6.			
7.			
8.			
	55	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	0	x 2 =	0	
FAC species:	15	x 3 =	45	
FACU species:	0	x 4 =	0	
UPL species:	40	x 5 =	200	
Column Totals:	55	(A)	245	(B)

Prevalence Index = B/A = 4.45

Hydrophytic Vegetation Indicators:

Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes:** **No: X**

Remarks: Plant community does not meet Dominance Test or Prevalence Index for hydrophytic vegetation. Saltgrass is growing rhizomatously upslope out of Wetland A and into uplands.

SOILS

Sampling Point: SP1B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	100					Silt loam	No redox
13-18+	10YR 3/2	80					Clay	
13-18+	10YR 6/3	20					Clay	No redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Hard pan

Depth (inches): 13

Hydric Soil Present? **Yes:** **No: X**

Remarks: Clay hard pan beginning at 13 inches below the surface. Entire soil profile was dry and friable. No hydric soil indicators present. No redox present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes: ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes:** **No: X**
Water Table Present?	Yes: ___	No X	Depth (inches): ___		
Saturation Present? (incl. capillary fringe)	Yes: ___	No X	Depth (inches): ___		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Sample point SP1B is approximately 2 feet higher in elevation compared to Wetland Sample Point SP1A.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/04/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: SP2A
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**WETLAND D**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.831324	Long: -111.967012	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PUSA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation N ,Soil N , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?**	**Yes: X** **No:**
Hydric Soil Present?	Yes: X	No:		
Wetland Hydrology Present?	Yes: X	No:		

Remarks: Sample Point 2A (SP2A) was taken in saline wet meadow Wetland D with saline soils. SP2A is approximately 2 feet lower in elevation than adjacent upland SP2B.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	3	Y	FACW
2.			
3.			
4.			
	3	= Total Cover	
Herb Stratum (Plot Size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 97 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:	
OBL species: 0	x 1 =	0
FACW species: 3	x 2 =	6
FAC species: 0	x 3 =	0
FACU species: 0	x 4 =	0
UPL species: 0	x 5 =	0
Column Totals: 3 (A)		6 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Saltgrass is predominant in other portions of Wetland D. Sparse vegetation, soils are hyper saline.

SOILS

Sampling Point: SP2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **WETLAND D**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 5/2	99	7.5YR 4/6	1	C	M	Silty clay	Dry
7-9	7.5YR 4/6	100					Sand	Dry
9-18+	5Y 6/2	80	7.5YR 5/8	20	C	M	Clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			**Indicators for Problematic Hydric Soils[3]:**
	Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
	Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
	Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
	Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
	Stratified Layers (A5) (**LRR C**)	X Depleted Matrix (F3)	Other (Explain in Remarks)
	1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
	Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
	Thick Dark Surface (A12)	Redox Depressions (F8)	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
	Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
	Sandy Gleyed Matrix (S4)		

Restrictive Layer (if present):		
Type:		
Depth (inches):	**Hydric Soil Present?**	**Yes: X No:**

Remarks: Soils meet hydric soil criteria for Depleted Matrix (F3). Distinct redox present beginning at 9 inches below the surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)			Secondary Indicators (2 or more required)
	Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
X	High Water Table (A2) (Assumed)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3) (Assumed)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
	Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
	Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
	Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
	Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
	Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
	Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes:	____	No	X	Depth (inches):	____	
Water Table Present?	Yes:	____	No	X	Depth (inches):	____	**Wetland Hydrology Present?** **Yes: X No:**
Saturation Present? (incl. capillary fringe)	Yes:		No	X	Depth (inches):		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present during 08/04/2021 site inspection. Seasonally high water table and soil saturation during the early Spring growing season is assumed due to hydric soil indicators and proximity to the Rudy Drain.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/04/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: SP2B
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.831268	Long: -111.967138	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation N ,Soil N , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes:	No: X	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: Upland Sample Point 2B (SP2B) taken in upland adjacent to Wetland D. SP2B is approximately 2 feet higher in elevation than adjacent Wetland SP2A.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size:___10ft___)			
1. *Sarcobatus vermiculatus*	10	Y	FACU
2. *Allenrolfea occidentalis*	5	Y	FACW
3.			
4.			
	15	= Total Cover	
Herb Stratum (Plot Size:___5 ft.__)			
1. *Bromus tectorum*	20	Y	UPL
2. *Poa bulbosa*	1	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	21	= Total Cover	
Woody Vine Stratum (Plot Size:____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species:	0	x 1 =	0
FACW species:	5	x 2 =	10
FAC species:	0	x 3 =	0
FACU species:	11	x 4 =	44
UPL species:	20	x 5 =	100
Column Totals:	36 (A)		154 (B)

Prevalence Index = B/A = 4.28

Hydrophytic Vegetation Indicators:

Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes:** **No: X**

Remarks: Presence of Iodine bush is likely due to soil salinity and not soil saturation because upland SP2B is two feet higher than Wetland SP2A.

SOILS

Sampling Point: SP2B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 4/3	100	No redox				Silt loam	Dry/Friable
15-18+	10YR 3/3	100	No redox				Clay loam	Dry/Friable

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Hard pan

Depth (inches): 15

Hydric Soil Present? **Yes:** **No: X**

Remarks: Soils are dry and friable. Hard pan beginning at 15 inches below the surface. No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes: ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes:** **No: X**
Water Table Present?	Yes: ___	No X	Depth (inches): ___		
Saturation Present? (incl. capillary fringe)	Yes: ___	No X	Depth (inches): ___		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/04/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: SP3A
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**WETLAND B**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.832604°	Long: -111.966897°	Datum: WGS 84
Soil Map Unit Name: Leland fine sandy loam, 0 to 1 percent slopes	NWI classification: R2UBGx	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation N ,Soil N , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?**	**Yes: X** **No:**
Hydric Soil Present?	Yes: X	No:		
Wetland Hydrology Present?	Yes: X	No:		

Remarks: Wetland SP3A sampled in Wetland B adjacent to Rudy Drain. SP3A is approximately 2.5 feet lower in elevation than adjacent Upland SP3B.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Elaeagnus angustifolia*	5	Y	FAC
2.			
3.			
4.			
	5	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1. *Hordeum jubatum*	50	Y	FAC
2. *Schoenoplectus americanus*	10	N	OBL
3. *Polygonum aviculare*	5	N	FAC
4. *Persicaria maculosa*	10	N	FACW
5. *Thinopyrum intermedium*	2	N	UPL
6.			
7.			
8.			
	77	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	10	x 1 =	10	
FACW species:	10	x 2 =	20	
FAC species:	60	x 3 =	180	
FACU species:	0	x 4 =	0	
UPL species:	2	x 5 =	10	
Column Totals:	82	(A)	220	(B)

Prevalence Index = B/A = 2.68

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Foxtail barley and Russian Olive are the dominant plants species at this sample point location in Wetland B.

SOILS

Sampling Point: SP3A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **WETLAND B**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100					Silty clay	Shells present, no redox
5-18+	5Y 6/2	97	7.5YR 5/8	3	C	M	Silty clay	Saturated @ 10 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			**Indicators for Problematic Hydric Soils[3]:**
	Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
	Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
	Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
	Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
	Stratified Layers (A5) (**LRR C**)	X Depleted Matrix (F3)	Other (Explain in Remarks)
	1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
X	Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
	Thick Dark Surface (A12)	Redox Depressions (F8)	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
	Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
	Sandy Gleyed Matrix (S4)		

Restrictive Layer (if present):		
Type:		
Depth (inches):	**Hydric Soil Present?**	**Yes: X** **No:**

Remarks: Soils meet the hydric soil indicator criteria for Depleted Matrix (F3) and Depleted Below Dark Surface (A11). Soils were saturated beginning at a depth of 10 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)			Secondary Indicators (2 or more required)
	Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
	High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
	Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
	Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
	Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
	Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
	Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
	Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes:	____	No	X	Depth (inches):		
Water Table Present?	Yes:	____	No	X	Depth (inches):		**Wetland Hydrology Present?** **Yes: X** **No:**
Saturation Present? (incl. capillary fringe)	Yes:	X	No		Depth (inches):	10	

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saturation at 10 inches. No water table observed at the time of the 08/04/2021 site inspection.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/04/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: SP3B
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range:	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.832589°	Long: -111.966996°	Datum: WGS 84
Soil Map Unit Name: Leland fine sandy loam, 0 to 1 percent slopes	NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation N ,Soil N , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes:	No:	X	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No:	X	
Wetland Hydrology Present?	Yes:	No:	X	

Remarks: Sample Point 3B (SP3B) is located in upland adjacent to Wetland B. SP3B is approximately 2.5 higher in elevation than adjacent Wetland SP3A near Rudy Drain.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size:_____)			
1.			
2.			
3.			
4.			
	0	= Total Cover	
Herb Stratum (Plot Size:___5 ft.__)			
1. *Thinopyrum intermedium*	25	Y	UPL
2. *Lepidium latifolium*	15	Y	FAC
3. *Chenopodium album*	5	N	FACU
4.			
5.			
6.			
7.			
8.			
	45	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	0	x 2 =	0	
FAC species:	15	x 3 =	45	
FACU species:	5	x 4 =	20	
UPL species:	25	x 5 =	125	
Column Totals:	45	(A)	190	(B)

Prevalence Index = B/A = 4.22

Hydrophytic Vegetation Indicators:

- Dominance Test >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes:** **No: X**

Remarks: There is a distinct topographic break between the higher upland plant community and lower wetland plant community.

SOILS

Sampling Point: SP3B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18+	10YR 4/2	100					Sandy loam	Dry, no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: No redox. Soils were dry and friable. No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes: ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes:** **No: X**
Water Table Present?	Yes: ___	No X	Depth (inches): ___		
Saturation Present? (incl. capillary fringe)	Yes: ___	No X	Depth (inches): ___		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present at the time of the 08/04/2021 site inspection.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/05/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: SP4A
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**WETLAND C**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.834417°	Long: -111.967419°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PUSA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation N ,Soil N , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?**	**Yes: X** **No:**
Hydric Soil Present?	Yes: X	No:		
Wetland Hydrology Present?	Yes: X	No:		

Remarks: Sample Point 4A (SP4A) sampled within Wetland C. Wetland C has hyper saline soils with a sparse plant community. Wetland SP4A is approximately 2 feet lower in elevation than adjacent Upland SP4B.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	3	Y	FACW
2.			
3.			
4.			
	3	= Total Cover	
Herb Stratum (Plot Size:____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:____)			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum 97	% Cover of Biotic Crust		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species:	0	x 1 =	0
FACW species:	3	x 2 =	6
FAC species:	0	x 3 =	0
FACU species:	0	x 4 =	0
UPL species:	0	x 5 =	0
Column Totals:	3 (A)		6 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Presence of sparse, salt tolerant (halophytic) Iodine bush is a result of hyper saline soils in the area. Saltgrass is prevalent in other portions of Wetland C.

SOILS

Sampling Point: SP4A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **WETLAND C**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4.5	5Y 4/2	100					Silty clay	Dry, no redox
4.5-18+	5Y 6/2	90	10YR 5/6	10	C	M	Clay	Dry

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			**Indicators for Problematic Hydric Soils[3]:**
	Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
	Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
	Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
	Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
	Stratified Layers (A5) (**LRR C**)	X Depleted Matrix (F3)	Other (Explain in Remarks)
	1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
	Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
	Thick Dark Surface (A12)	Redox Depressions (F8)	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
	Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
	Sandy Gleyed Matrix (S4)		

Restrictive Layer (if present):		
Type:		
Depth (inches):	**Hydric Soil Present?**	**Yes: X** **No:**

Remarks: Soils meet hydric soil criteria for Depleted Matrix (F3). Distinct redox present beginning at 4.5 inches below the surface.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (any one indicator is sufficient)			Secondary Indicators (2 or more required)
	Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
X	High Water Table (A2) (Assumed)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
X	Saturation (A3) (Assumed)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
	Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
	Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
	Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
	Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
	Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
	Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes:	____	No	X	Depth (inches):		
Water Table Present?	Yes:	____	No	X	Depth (inches):	**Wetland Hydrology Present?**	**Yes: X** **No:**
Saturation Present? (incl. capillary fringe)	Yes:		No	X	Depth (inches):		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology present at the time of the 08/04/2021 site inspection. Seasonally high water table and soil saturation are assumed present during early Spring growing season due to presence of hydric soils indicators and proximity to the Rudy Drain.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/04/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: SP4B
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.834463°	Long: -111.967284°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: None	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation N ,Soil N , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes:	No: X	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: Sample Point 4B (SP4B) taken in upland adjacent to Wetland C. SP4B is approximately 2 feet higher in elevation than adjacent Wetland SP4A.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Sarcobatus vermiculatus*	5	Y	FACU
2. *Allenrolfea occidentalis*	5	N	FACW
3.			
4.			
	10	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1. *Hordeum murinum*	15	Y	FACU
2. *Bromus tectorum*	10	Y	UPL
3. *Lepidium perfoliatum*	5	N	FACU
4. *Poa bulbosa*	3	N	FACU
5. *Grindelia squarrosa*	Trace	N	FACU
6.			
7.			
8.			
	33	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 55 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	5	x 2 =	10	
FAC species:	0	x 3 =	0	
FACU species:	30	x 4 =	120	
UPL species:	10	x 5 =	50	
Column Totals:	45	(A)	180	(B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- Dominance Test >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes:** **No: X**

Remarks: There is a distinct topographic break between higher upland plant community and lower adjacent wetland plant community.

SOILS

Sampling Point: SP4B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18+	10YR 4/2	100					Silt loam	Dry, no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		**Indicators for Problematic Hydric Soils[3]:**
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Restrictive Layer (if present):		
Type:	**Hydric Soil Present?**	**Yes:** **No: X**
Depth (inches):		

Remarks: Soils are dry and friable. No redox or hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes:	___	No	X	Depth (inches):		
Water Table Present?	Yes:	___	No	X	Depth (inches):	**Wetland Hydrology Present?**	**Yes:** **No: X**
Saturation Present? (incl. capillary fringe)	Yes:		No	X	Depth (inches):		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-1
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.841379°	Long: -111.960620°	Datum: WGS 84
Soil Map Unit Name: Jordan-Saltair complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-1 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	1	Y	FACW
2.			
3.			
4.			
	0	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	1	x 2 =	1	
FAC species:	0	x 3 =	0	
FACU species:	0	x 4 =	0	
UPL species:	0	x 5 =	0	
Column Totals:	0	(A)	0	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic).

SOILS

Sampling Point: TP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21	5Y 5/3	98	7.5YR 5/8	2	C	M	Silty loam	Distinct redox
21-33+	5Y 5/3	95	7.5YR 5/8	5	C	M	Clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Distinct redox concentrations are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels. Soil texture changes at 21 inches below the surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes:	___	No	X	Depth (inches):	
Water Table Present?	Yes:	___	No	X	Depth (inches):	
Saturation Present? (incl. capillary fringe)	Yes:		No	X	Depth (inches):	

Wetland Hydrology Present? **Yes:** **No: X**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to a depth of at least 33 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-2
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.841115°	Long: -111.959952°	Datum: WGS 84
Soil Map Unit Name: Jordan-Saltair complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes:	No: X	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-2 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	3	Y	FACW
2.			
3.			
4.			
	3	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1. *Hordeum murinum*	1	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 99 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species:	0	x 1 =	0
FACW species:	3	x 2 =	6
FAC species:	0	x 3 =	0
FACU species:	1	x 4 =	4
UPL species:	0	x 5 =	0
Column Totals:	4	(A)	10 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes:** **No: X**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic). Plant community meets Prevalence Index but not Dominance Test for Hydrophytic Vegetation.

SOILS

Sampling Point: TP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	5Y 5/3	99	10YR 5/8	1	C	M	Silt loam	Dry
20-33+	5Y 5/3	95	10YR 5/8	5	C	M	Clay	Distinct Redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Distinct redox concentrations are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels. Soil texture changes at 20 inches below the surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes: ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes:** **No: X**
Water Table Present?	Yes: ___	No X	Depth (inches): ___		
Saturation Present? (incl. capillary fringe)	Yes: ___	No X	Depth (inches): ___		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to a depth of at least 33 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-3
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.840624°	Long: -111.959525°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-3 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	2	Y	FACW
2.			
3.			
4.			
	2	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species:	0	x 1 =	0
FACW species:	2	x 2 =	4
FAC species:	0	x 3 =	0
FACU species:	0	x 4 =	0
UPL species:	0	x 5 =	0
Column Totals:	2 (A)		4 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic).

SOILS

Sampling Point: TP-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	5Y 6/2	99	10YR 5/8	1	C	M	Silty Clay	Distinct redox
18-31+	7.5YR 5/3	97	7.5YR 4/6	3	C	M	Clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Depleted matrix and redox are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes: ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes:** **No: X**
Water Table Present?	Yes: ___	No X	Depth (inches): ___		
Saturation Present? (incl. capillary fringe)	Yes: ___	No X	Depth (inches): ___		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to at least a depth of 31 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-4
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.839530°	Long: -111.960151°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes:	No: X	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-4 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	2	Y	FACW
2.			
3.			
4.			
	2	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1. *Hordeum murinum*	1	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 99 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	2	x 2 =	4	
FAC species:	0	x 3 =	0	
FACU species:	1	x 4 =	4	
UPL species:	0	x 5 =	0	
Column Totals:	3	(A)	8	(B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes:** **No: X**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic). Plant community meets Prevalence Index but not Dominance Test for Hydrophytic Vegetation.

SOILS

Sampling Point: TP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	5Y 6/2	99	10YR 5/8	1	C	M	Silty Clay	Distinct redox
14-27+	2.5Y 5/2	99	10YR 5/8	2	C	M	Silt	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Depleted matrix and redox are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes: ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes:** **No: X**
Water Table Present?	Yes: ___	No X	Depth (inches): ___		
Saturation Present? (incl. capillary fringe)	Yes: ___	No X	Depth (inches): ___		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to a depth at least 27 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-5
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.839519°	Long: -111.958910°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-5 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	2	Y	FACW
2.			
3.			
4.			
	2	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	2	x 2 =	4	
FAC species:	0	x 3 =	0	
FACU species:	0	x 4 =	0	
UPL species:	0	x 5 =	0	
Column Totals:	2	(A)	4	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic).

SOILS

Sampling Point: TP- 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 4/2	100					Silt loam	Dry, no redox
15-33+	10YR 5/2	90	7.5YR 5/8	10	C	M	Clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Depleted matrix and redox are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Secondary Indicators (2 or more required)

Field Observations:

Surface Water Present?	Yes: ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes:** **No: X**
Water Table Present?	Yes: ___	No X	Depth (inches): ___		
Saturation Present? (incl. capillary fringe)	Yes: ___	No X	Depth (inches): ___		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to at least a depth of 33 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-6
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.840770°	Long: -111.958979°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-6 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	4	Y	FACW
2.			
3.			
4.			
	4	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	4	x 2 =	8	
FAC species:	0	x 3 =	0	
FACU species:	0	x 4 =	0	
UPL species:	0	x 5 =	0	
Column Totals:	4	(A)	8	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic).

SOILS

Sampling Point: TP-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K:2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-22	5Y 6/2	98	10YR 5/6	2	C	M	Silty clay	
22-33+	10YR 5/3	97	7.5YR 5/8	3	C	M	Clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Indicators for Problematic Hydric Soils[3]:

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Depleted matrix and redox are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes: ___	No X	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes:** **No: X**
Water Table Present?	Yes: ___	No X	Depth (inches): ___		
Saturation Present? (incl. capillary fringe)	Yes: ___	No X	Depth (inches): ___		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to at least a depth of 33 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-10
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.829478°	Long: -111.959826°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-10 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	3	Y	FACW
2.			
3.			
4.			
	3	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	3	x 2 =	6	
FAC species:	0	x 3 =	0	
FACU species:	0	x 4 =	0	
UPL species:	0	x 5 =	0	
Column Totals:	3	(A)	6	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic).

SOILS

Sampling Point: TP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	2.5Y 5/3	100	No redox				Silty clay	Dry
19-20.5	2.5Y 4/4	100	No redox				Sandy clay	Dry
20.5-32+	5Y 6/2	99	7.5YR 4/6	2	C	M	Silty clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (**LRR C**)
- 1 cm Muck (A9) (**LRR D**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Depleted matrix and redox are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (**Nonriverine**)
- Sediment Deposits (B2) (**Nonriverine**)
- Drift Deposits (B3) (**Nonriverine**)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (**Riverine**)
- Sediment Deposits (B2) (**Riverine**)
- Drift Deposits (B3) (**Riverine**)
- Drainage patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes: ____ No X Depth (inches): ____

Water Table Present? Yes: ____ No X Depth (inches): ____

Saturation Present? (incl. capillary fringe) Yes: ____ No X Depth (inches): ____

Wetland Hydrology Present? **Yes:** **No: X**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to at least a depth of 32 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-11
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.830151°	Long: -111.960965°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-11 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	1	Y	FACW
2.			
3.			
4.			
	1	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species:	0	x 1 =	0
FACW species:	1	x 2 =	2
FAC species:	0	x 3 =	0
FACU species:	0	x 4 =	0
UPL species:	0	x 5 =	0
Column Totals:	1	(A)	2 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic).

SOILS

Sampling Point: TP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 4/2	60	No redox				Silty clay	Dry
	7.5YR 5/4	40	No redox				Silty clay	Dry
11-33	5Y 5/3	97	7.5YR 5/8	3	C	M	Clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (**LRR C**)
- 1 cm Muck (A9) (**LRR D**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Distinct redox concentrations are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (**Nonriverine**)
- Sediment Deposits (B2) (**Nonriverine**)
- Drift Deposits (B3) (**Nonriverine**)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (**Riverine**)
- Sediment Deposits (B2) (**Riverine**)
- Drift Deposits (B3) (**Riverine**)
- Drainage patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes: ____ No X Depth (inches): ____

Water Table Present? Yes: ____ No X Depth (inches): ____

Saturation Present? (incl. capillary fringe) Yes: ____ No X Depth (inches): ____

Wetland Hydrology Present? **Yes:** **No: X**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to at least a depth of 33 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

K.2.a Wetland Delineation Report.pdf

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-12
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.830785°	Long: -111.960483°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes:	No: X	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-12 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	3	Y	FACW
2.			
3.			
4.			
	3	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1. *Hordeum murinum*	1	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	1	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum 99	% Cover of Biotic Crust		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	3	x 2 =	6	
FAC species:	0	x 3 =	0	
FACU species:	1	x 4 =	4	
UPL species:	0	x 5 =	0	
Column Totals:	4	(A)	10	(B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

- Dominance Test >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes:** **No: X**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic). Plant community meets Prevalence Index, but not Dominance Test for Hydrophytic Vegetation.

SOILS

Sampling Point: TP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y 5/2	100	No redox				Silty clay	Dry
8-23	5Y 5/3	98	10YR 5/8	2	C	M	Silty clay	Distinct redox
23-26	10YR 4/6	100	No redox				Sand	Dry
26-33+	5Y 5/2	85	7.5YR 5/8	15	C	M	Silty clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		**Indicators for Problematic Hydric Soils[3]:**
Histosol (A1)	Sandy Redox (S5)	1 cm Muck (A9) (**LRR C**)
Histic Epipedon (A2)	Stripped Matrix (S6)	2 cm Muck (A10) (**LRR B**)
Black Histic (A3)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Red Parent Material (TF2)
Stratified Layers (A5) (**LRR C**)	Depleted Matrix (F3)	Other (Explain in Remarks)
1 cm Muck (A9) (**LRR D**)	Redox Dark Surface (F6)	
Depleted Below Dark Surface (A11)	Depleted Dark Surface (F7)	
Thick Dark Surface (A12)	Redox Depressions (F8)	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Sandy Mucky Mineral (S1)	Vernal Pools (F9)	
Sandy Gleyed Matrix (S4)		

Restrictive Layer (if present):		
Type:	**Hydric Soil Present?**	**Yes:** **No: X**
Depth (inches):		

Remarks: Depleted matrix and redox are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels. Distinct sand layer from 23-26 inches below the surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (**Riverine**)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (**Riverine**)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (**Riverine**)
Water Marks (B1) (**Nonriverine**)	Hydrogen Sulfide Odor (C1)	Drainage patterns (B10)
Sediment Deposits (B2) (**Nonriverine**)	Oxidized Rhizospheres along Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3) (**Nonriverine**)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Plowed Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery	Thin Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes:	___	No	X	Depth (inches):		
Water Table Present?	Yes:	___	No	X	Depth (inches):	**Wetland Hydrology Present?**	**Yes:** **No: X**
Saturation Present? (incl. capillary fringe)	Yes:		No	X	Depth (inches):		

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to at least a depth of 32 inches below the surface. No evidence of surface water OHWM indicative of seasonal ponding.

WETLAND DETERMINATION DATA FORM - Arid West Region – Version 2.0

K.2.a Wetland Delineation Report.pdf

Project/Site: Swaner Property	City/County: Salt Lake City/Salt Lake	Sampling Date: 08/09/2021
Applicant/Owner: Scannell Properties	State: Utah	Sampling Point: TP-18
Investigator(s): J. Eddings; P. McGuire	Section, Township, Range: S9, T1N, R1W	**UPLAND**
Landform (hillslope, terrace, etc.): Historic Lake Plain	Local relief (concave, convex, none): None	Slope (%): 1
Subregion (LRR): Interior Deserts (LRRD) Lat: 40.834649°	Long: -111.964244°	Datum: WGS 84
Soil Map Unit Name: Saltair-Playas-Lasil complex, 0 to 1 percent slopes	NWI classification: PEM1/USA	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes: X No:	(If no, explain in Remarks.)	
Are Vegetation N ,Soil N , or Hydrology N Significantly disturbed?	Are "Normal Circumstances" present? Yes: X	No:
Are Vegetation Y ,Soil Y , or Hydrology N Naturally problematic?	(If needed, explain any answers in Remarks.)	

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes: X	No:	**Is the Sampled Area within a Wetland?** **Yes:** **No: X**
Hydric Soil Present?	Yes:	No: X	
Wetland Hydrology Present?	Yes:	No: X	

Remarks: TP-18 sampled within sparsely vegetated playa area of the Project Area. Problematic vegetation and soils: plant community is halophytic and not hydrophytic in this case. Soils have relic redox from past prehistoric lake levels not representative of current hydrology conditions.

VEGETATION - Use scientific names of plants

Tree Stratum (Plot Size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot Size: 10 ft.)			
1. *Allenrolfea occidentalis*	1	Y	FACW
2.			
3.			
4.			
	1	= Total Cover	
Herb Stratum (Plot Size: 5 ft.)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot Size:_____)			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:		
OBL species:	0	x 1 =	0	
FACW species:	1	x 2 =	2	
FAC species:	0	x 3 =	0	
FACU species:	0	x 4 =	0	
UPL species:	0	x 5 =	0	
Column Totals:	1	(A)	2	(B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X Dominance Test >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes: X** **No:**

Remarks: Surrounding area is sparsely vegetated. Plant community is salt-tolerant (halophytic) and not indicative of tolerance to prolonged soil saturation (hydrophytic).

SOILS

Sampling Point: TP-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) **UPLAND**

K.2.a Wetland Delineation Report.pdf

Depth (inches)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 3/3	100	No redox				Silty clay	Dry
6-24	2.5Y 6/3	100	No redox				Silty clay	Dry
24-29	2.5Y 5/4	100	No redox				Sand	Dry
29-35	5Y 5/3	95	7.5YR 4/6	5	C	M	Silty clay	Distinct redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS+Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (**LRR C**)
- 1 cm Muck (A9) (**LRR D**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes:** **No: X**

Remarks: Distinct redox concentrations are relic of past lake bottom associated with the prehistoric Great Salt Lake water levels. Distinct sand layer from 24-29 inches below the surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (**Nonriverine**)
- Sediment Deposits (B2) (**Nonriverine**)
- Drift Deposits (B3) (**Nonriverine**)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (**Riverine**)
- Sediment Deposits (B2) (**Riverine**)
- Drift Deposits (B3) (**Riverine**)
- Drainage patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes: ____ No X Depth (inches): ____

Water Table Present? Yes: ____ No X Depth (inches): ____

Saturation Present? (incl. capillary fringe) Yes: ____ No X Depth (inches): ____

Wetland Hydrology Present? **Yes:** **No: X**

Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present. Soils are dry to at least a depth of 35 inches below the surface.

OHWM Delineation Cover Sheet Page 1 of 2

Rudy Drain

Project: Swaner Property Delineation **Date:** 8/4/2021

Location: Salt Lake City, Salt Lake County **Investigator(s):** J. Eddings, P. McGuire

Sample Point Coordinates: LAT: 40.825636; LON: -111.963677

Project Description: The Swaner Property mostly consists of unimproved rangeland that is currently used for livestock grazing. The Project Area is situated between the Jordan River to the east, and the Great Salt Lake to the west. A segment of Rudy Drain crosses the southwest portion of the Project Area.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Rudy Drain appears to be regularly dredged. Rudy Drain had flowing water in a Southeast to Northwest direction at the time of the August 4th, 2021 on-site inspection. Aquatic vegetation was observed growing on the drain channel bottom.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Review of Google Earth Aerial Imagery.

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

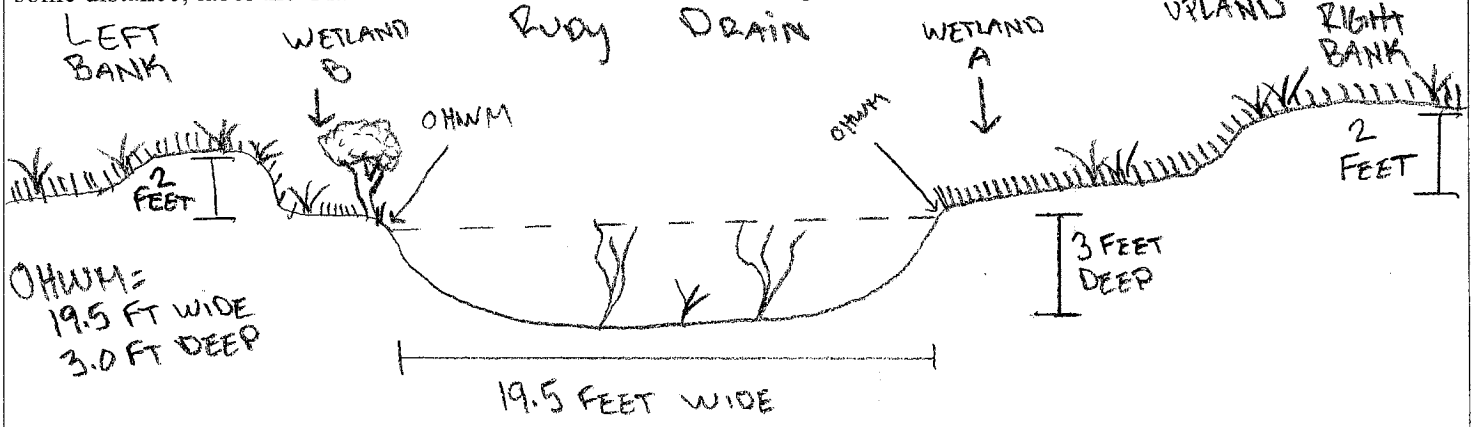
List and describe any other supporting information received/acquired:

- Site inspection on August 4, 2021.
- See Photos of Rudy Drain on Photolog Page of delineation report.

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet #: Ruby Drain XS-1 **OHWM Delineation Datasheet** Page 2 of 2

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☒ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	100	—	—	—	—	Y
Below OHWM	100	—	—	—	—	Y

Notes/Description: Flowing water too murky to see sediment texture below OHWM.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	5	10	85	0
Below OHWM	0	0	10	90

Notes/Description: Aquatic vegetation growing on channel bed. Foxtail barley, Lady's thumb, Curly dock, and Russian olive growing adjacent to channel.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- Distinct topographic break.
- Distinct shift in vegetation

OHWM Delineation Cover Sheet Page 1 of 2

Project: Swaner Property Delineation **Date:** 8/4/2021

Location: Salt Lake City, Salt Lake County **Investigator(s):** J. Eddings, P. McGuire

SAMPLE POINT COORDINATES: LAT: 40.833153°; LON: -111.967340°

Project Description: The Swaner Property mostly consists of Unimproved rangeland that is currently used for livestock grazing. The Project Area is situated between the Jordan River to the east, and the Great Salt Lake to the west. A segment of Rudy Drain crosses the southwest portion of the Project Area.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

Rudy Drain appears to be regularly dredged. Rudy Drain had flowing water in a Southeast to northwest direction at the time of the August 4, 2021 on-site inspection. Aquatic vegetation was observed growing on the drain channel bottom.

Off-site Information

Remotely sensed image(s) acquired? ☒ **Yes** ☐ **No** [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

Review of Google Earth Aerial Imagery.

Hydrologic/hydraulic information acquired? ☐ **Yes** ☒ **No** [If yes, attach information to datasheet(s) and describe below.] Description:

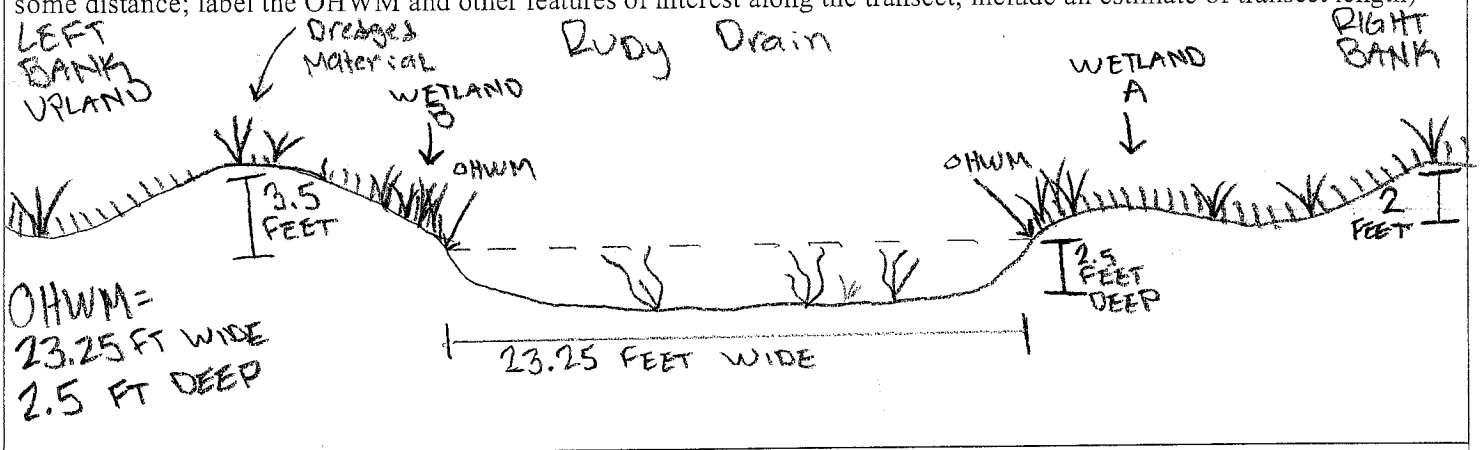
List and describe any other supporting information received/acquired:

- Site inspection on August 4, 2021.
- See Photos of Rudy Drain on photolog page of delineation report.

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Datasheet #: Rudy Drain Y52 **OHWM Delineation Datasheet** Page 2 of 2

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp (> 60°) | ☐ Moderate (30–60°) | ☐ Gentle (< 30°) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	80	20	0	0	0	Y
Below OHWM	100	0	0	0	0	Y

Notes/Description: Flowing water too murky to see sediment texture below OHWM.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	0	5	70	25
Below OHWM	0	0	20	80

Notes/Description: Aquatic vegetation growing on channel bed. Foxtail barley, annual rabbit's-foot grass, narrowleaf cattail, clasping Pepperweed, and intermediate Wheatgrass growing on channel banks and adjacent uplands.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- Distinct topographic break.
- Distinct shift in vegetation.

APPENDIX C

Project Area Photos:

Photo logs 1 to 15 taken in April 2021

Photo logs 16 to 19 taken in August 2021

Photo logs 20 – 24 paired sample point photos taken in August 2021

Photo logs 25 – 28 excavated test pit photos taken in April 2021

Photo logs 29 – 32 excavated test pit photos taken in August 2021

Swaner Property - Approximately 420.07 acres
Salt Lake City, Salt Lake County, Utah
Photo/Sample Points ID & Coordinates

Sample/Photo ID	Latitude	Longitude
SP1A	40.828604°	-111.963637°
SP1B	40.828626°	-111.963610°
SP2A	40.831324°	-111.967012°
SP2B	40.831268°	-111.967138°
SP3A	40.832604°	-111.966897°
SP3B	40.832589°	-111.966996°
SP4A	40.834417°	-111.967419°
SP4B	40.834463°	-111.967284°
XS-1	40.825636°	-111.963677°
XS-2	40.833153°	-111.967340°
TP-1	40.841379°	-111.960620°
TP-2	40.841115°	-111.959952°
TP-3	40.840624°	-111.959525°
TP-4	40.839530°	-111.960151°
TP-5	40.839519°	-111.958910°
TP-6	40.840770°	-111.958979°
TP-10	40.829478°	-111.959826°
TP-11	40.830151°	-111.960965°
TP-12	40.830785°	-111.960483°
TP-18	40.834649°	-111.964244°
P1	40.825193°	-111.953838°
P2	40.826732°	-111.953658°
P3	40.829375°	-111.953581°
P4	40.831512°	-111.953546°
P5	40.833499°	-111.953566°
P9	40.838599°	-111.958519°
P10	40.838644°	-111.958380°
P11	40.840789°	-111.958632°
P12	40.841987°	-111.958239°
P13	40.842026°	-111.963357°
P14	40.841779°	-111.967761°
P15	40.838624°	-111.967592°
P16	40.838616°	-111.965982°
P17	40.838615°	-111.965423°
P18	40.838607°	-111.963995°
P19	40.839959°	-111.964082°
P20	40.838620°	-111.962575°
P21	40.838631°	-111.961572°
P22	40.838603°	-111.961572°
P23	40.838644°	-111.963581°
P24	40.838475°	-111.967542°
P25	40.834647°	-111.964263°
P26	40.834418°	-111.964264°
P27	40.834236°	-111.963475°

Swaner Property - Approximately 420.07 acres
Salt Lake City, Salt Lake County, Utah
Photo/Sample Points ID & Coordinates

Photo ID	Latitude	Longitude
P28	40.833697	-111.967692
P29	40.833437°	-111.967771°
P30	40.832635°	-111.967820°
P31	40.832285°	-111.967759°
P32	40.830975°	-111.967710°
P35	40.830672°	-111.964430°
P36	40.829799°	-111.960894°
P37	40.829304°	-111.959954°
P38	40.827613°	-111.957199°
P39	40.827637°	-111.959905°
P40	40.827623°	-111.963930°
P41	40.827385°	-111.967737°
P42	40.824082°	-111.967701°
P43	40.824450°	-111.962230°
P44	40.824182°	-111.962620°
P45	40.825008°	-111.962595°
P46	40.827689°	-111.963677°
P47	40.830572°	-111.964234°
P48	40.832621°	-111.966966°
P49	40.833049°	-111.966910°
P50	40.831204°	-111.967003°
P51	40.831994°	-111.967561°
P52	40.834408°	-111.967685°

Swaner Property
Approximately 420.07-acre Project Area
Salt Lake City, Salt Lake County, Utah
Photos taken April 20, 2021 - Photolog 1

Photo 1. North view of uplands located in the southeast portion of the Project Area. Photo taken from southeast corner of Project Area. Wheatgrass, greasewood, and other upland vegetation observed.

Photo 2. West view of uplands located in the southeastern portion of the Project Area. Photo taken from east boundary of Project Area. Wheatgrass, greasewood, and other upland vegetation observed.

Photo 3. West view of uplands located in the southeastern portion of the Project Area. Photo taken from east boundary of Project Area. No wetlands or stream channels present.

Photo 4. West view uplands located in the eastern portion of the Project Area. Photo taken from east boundary of Project Area.

Photo 5. West view uplands located in the eastern portion of the Project Area. Photo taken from east boundary of Project Area. No wetlands or stream channels prsent.

Photo 9. South view of uplands located in the northeastern portion of the Project Area. Photo taken from 3200 N. No streams or channels observed.

Photo 10. North view of playa-like are located in the northeastern portion of the Project Area. No wetlands, streams or channels observed. No sign of ponding observed.

Photo 11. West view from eastern boundary of the Project Area. Playa-like area had no sign of ponding and test pits had water tables deeper than 36 inches on April 23, 2021.

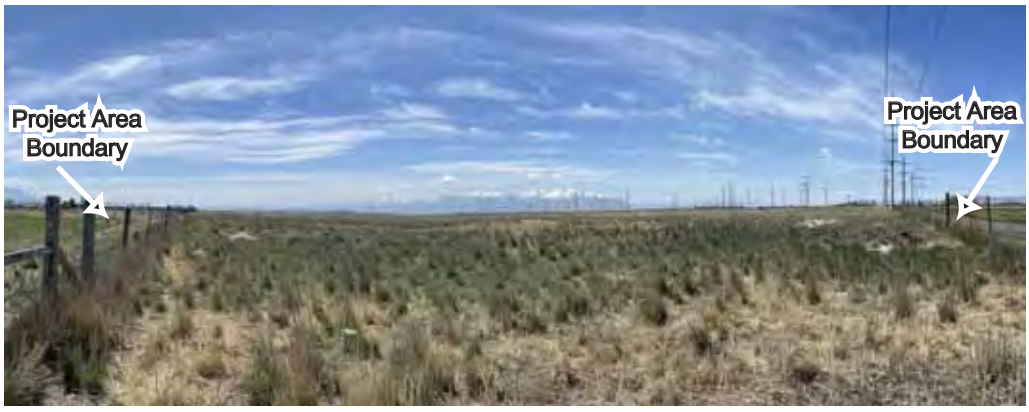


Photo 12. Southwest view of upland in the northeast corner of Project Area.

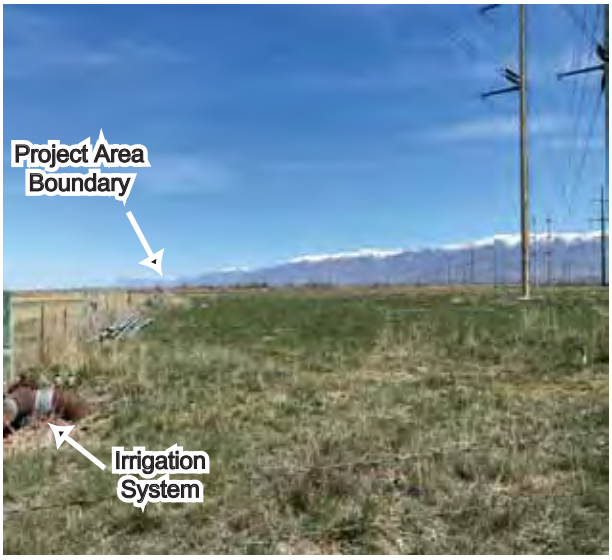


Photo 13a. North view of Project Area and pressurized irrigation system located along the north boundary of the Project Area.

Photo 13b. East view of Project Area uplands located along the north boundary of the Project Area.

Photo 13c. South view of Project Area uplands taken from the north boundary of the Project Area.

Photo 13d. West view of Project Area uplands taken from the north boundary of the Project Area.

Photo 14. East view of uplands located in the northwestern portion of the Project Area. No wetlands, streams or channels observed.

Photo 15. South view of uplands located in the northwestern portion of the Project Area. No wetlands, streams or channels observed.

Photo 16a. East view along Project Area boundary. No wetlands, streams or channels observed.

Photo 16b. West view along Project Area boundary. No wetlands, streams or channels observed.

Photo 17. North view of uplands located in the northwestern portion of the Project Area. No wetlands, streams or channels observed.

Photo 18. North view of uplands and fill piles located in the northern portion of the Project Area. No wetlands, streams or channels observed.

Photo 19. Northwest view of old irrigation ditch located in the northwestern portion of the Project Area. No wetlands, streams or channels observed.

Photo 20. Northwest view of uplands and fill piles located in the northern portion of the Project Area. No wetlands, streams or channels observed.

Photo 21. North view of uplands located in the northern portion of the Project Area. No wetlands, streams or channels observed.

Photo 22. South view of raised berm located in the northern portion of the Project Area. No wetlands, streams or channels observed.

Photo 23. South view of uplands located in the northern portion of the Project Area. No wetlands, streams or channels observed.

Photo 24. Southeast view of uplands located in the northwestern portion of the Project Area. No wetlands, streams or channels observed.

Photo 25. Northeast view of raised berm located in the central portion of the Project Area. No wetlands, streams or channels observed.

Photo 26. Southwest view of the raised berm located in the central portion of the Project Area. Wheatgrass, greasewood, and other upland vegetation observed.

Photo 27. Southwest view of upland lake terrace located in the central portion of the Project Area. Wheatgrass, greasewood, and other upland vegetation observed. No wetlands, stream channels, or ponds observed.

Photo 28. East view of Wetland C located along the western portion of the Project Area. Wetland vegetation occurs in low-lying area that is likely an old meander of the Jordan River. Plant community is saline wet meadow.

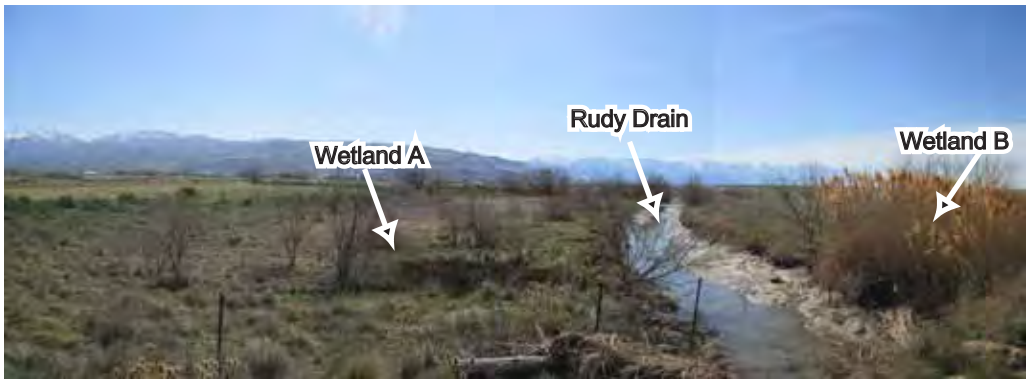


Photo 29. Southeast view of the Rudy Drain and adjacent Wetlands A & B. Photo taken along the west boundary of the Project Area. Rudy Drain is an excavated channel within what is likely an old meander of the Jordan River.

Photo 30. Northeast view of Wetland B located along the western boundary of the Project Area. Plant community is saline wet meadow.

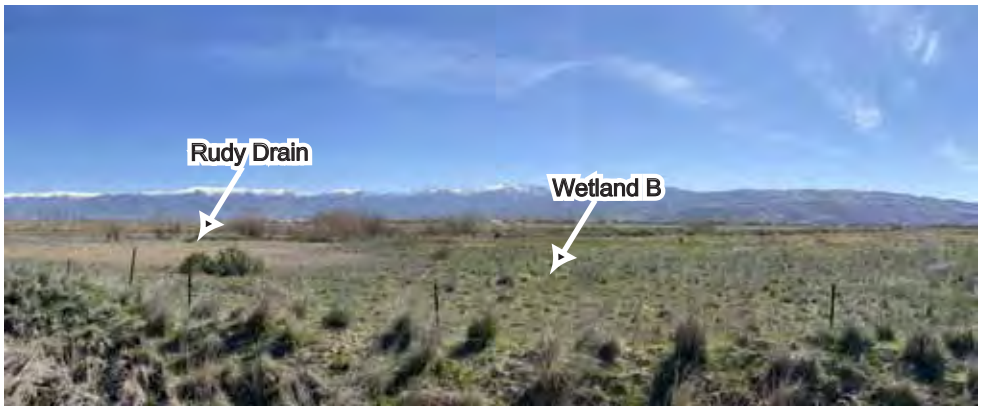


Photo 31. East view of Wetland B along west boundary of the Project Area.

Photo 32. East view of Wetland D and surrounding uplands located along the western boundary of the Project Area. Situated in low-lying ground that is likely an old meander of the Jordan River. Plant community is saline wet meadow.

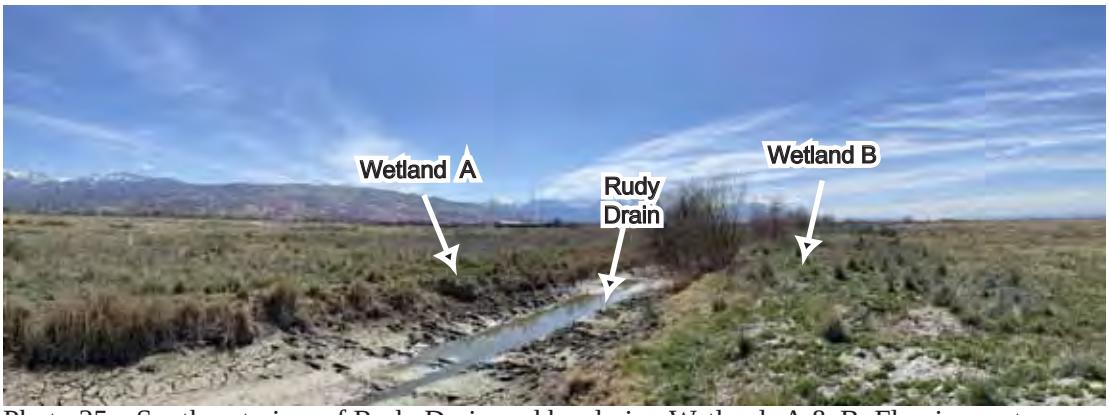


Photo 35a. Southeast view of Rudy Drain and bordering Wetlands A & B. Flowing water observed in Rudy Drain. Wetlands consists of both marsh and saline wet meadow plant species.

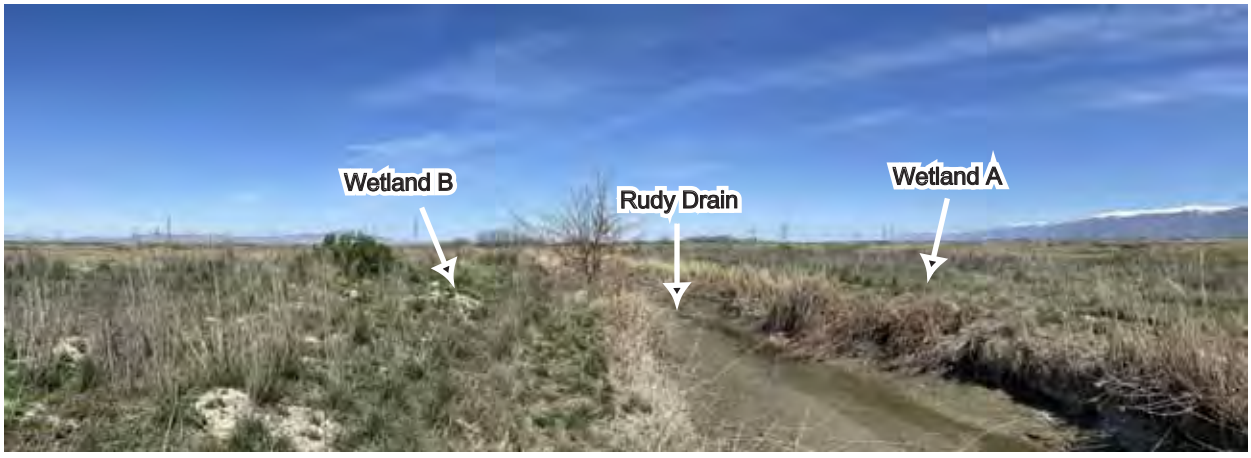


Photo 35b. North view of Rudy Drain and bordering Wetlands A & B.

Photo 36. Southwest view of abandoned farm pond centrally located within the Project Area. No wetlands, streams or channels observed. No sign of recent ponding.

Photo 37. Northeast view of uplands located in the southern portion of the Project Area. No wetlands, streams or channels observed.

Photo 38a. South view of uplands located in the southeastern portion of the Project Area. No wetlands, streams or channels observed.

Photo 38b. North view of uplands located in the southeastern portion of the Project Area. No wetlands, streams or channels observed. Wheatgrass, greasewood, and other upland vegetation observed.

Photo 39a. Southwest view of uplands located in the southern portion of the Project Area. No wetlands, streams or channels observed.

Photo 39b. Northeast view of uplands located in the southern portion of the Project Area. No wetlands, streams or channels observed.

Photo 40. South view of the Rudy Drain and surrounding Wetlands A and B. Photo taken in the southwestern portion of the Project Area. Both the Rudy Drain and Wetlands A and B are likely associated with an old meander of the Jordan River.

Photo 41a. Northeast view of uplands located in the southwestern portion of the Project Area.

Photo 41b. Southeast view of uplands located in the southwestern portion of the Project Area. No wetland or stream channels present.

Photo 42. East view of uplands located within the southwestern portion of the Project Area.

Photo 43a. Southeast view of Rudy Drain and surrounding Wetlands A and B located in the southern portion of the Project Area.

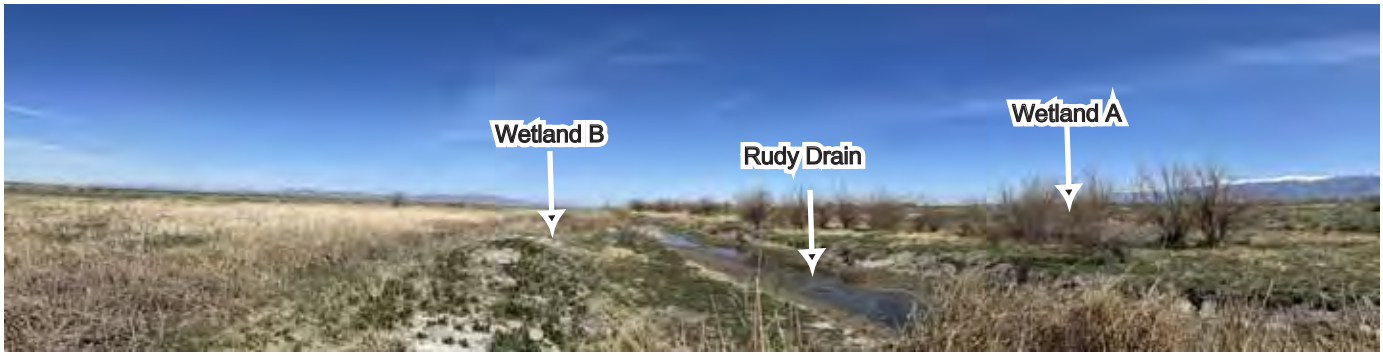


Photo 43b. Northwest view of Rudy Drain and surrounding Wetlands A and B located in the southern portion of the Project Area.

Photo 44. Northwest view of flagged Wetland B boundary near the south Project Area boundary. Wetland B is a narrow strip of wetland adjacent to the west bank of the Rudy Drain Stream Channel.

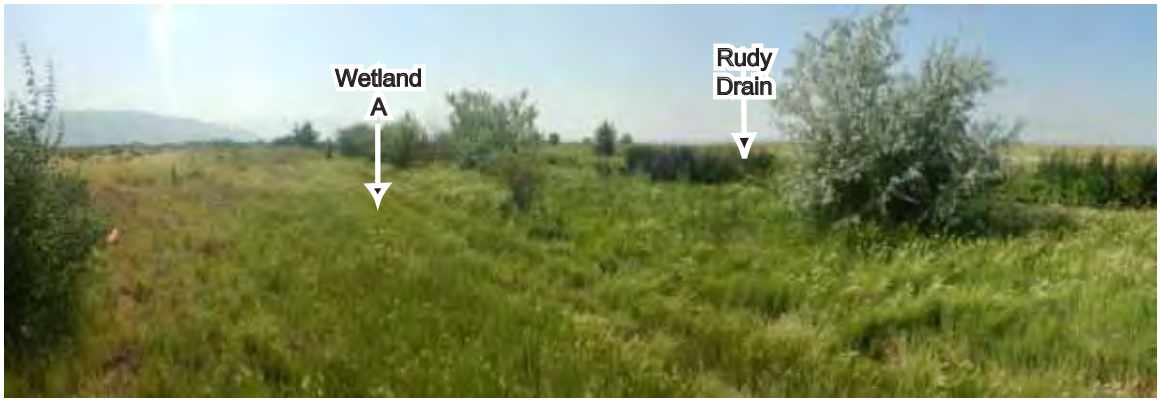


Photo 45. South view of flagged Wetland A boundary near the south Project Area boundary. Wetland A is a narrow strip of wetland adjacent to the east bank of the Rudy Drain Stream Channel.

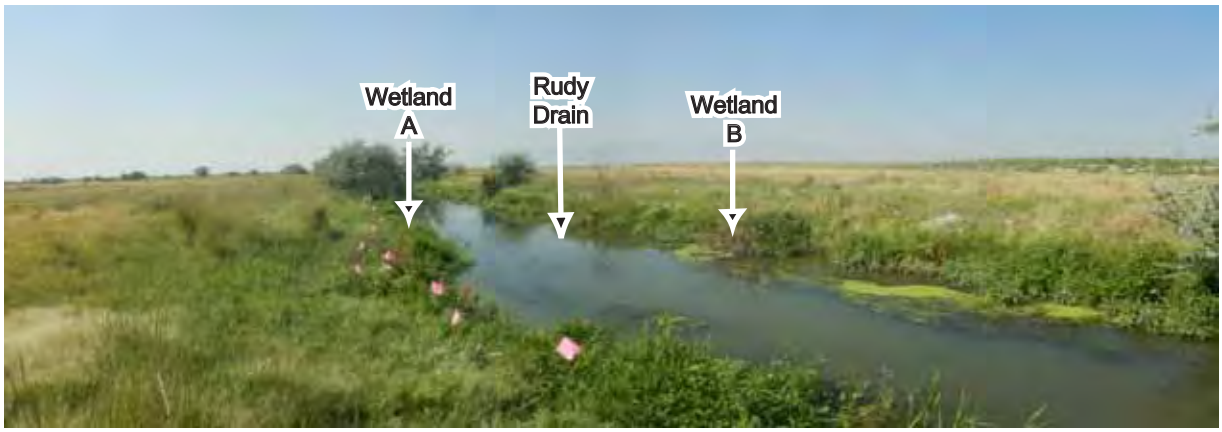


Photo 46. South view of flagged Wetland A and B boundaries adjacent to the south central portion of Rudy Drain near the abandoned farm.

Photo 47. South view of flagged Wetland A and B boundaries adjacent to the north central portion of Rudy Drain.

Photo 48. East view of flagged Wetland B boundary adjacent to Rudy Drain near the location of SP3A and SP3B.

Photo 49. West view of flagged Wetland A boundary adjacent to Rudy Drain near the west Project Area boundary.

Photo 50. East view of flagged Wetland D boundary near west Project Area boundary. Wetland D is a low-lying playa-like area with saline soils and sparse vegetation.

Photo 51a. North view of roadside ditch that runs outside of the west Project Area boundary.

Photo 51b. East view of breach in roadside ditch that allows potential flows into Wetland D.

Photo 51c. South view of roadside ditch. Ditch was dry at the time of the August 5, 2021 on-site inspection.

Photo 51d. West view of breach in roadside ditch that allows potential flows into Wetland D.

Photo 52a. East view of Wetland C near the west Project Area boundary. Wetland C is a low-lying playa-like area with saline soils and sparse vegetation.

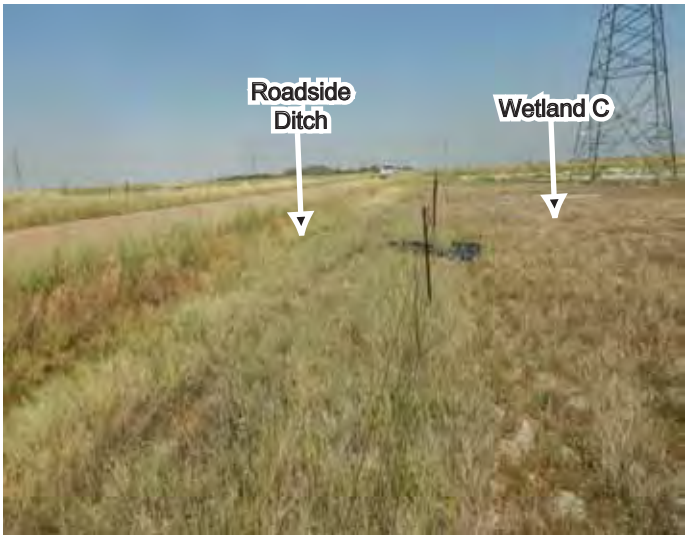


Photo 52b. North view of roadside ditch that runs outside of the west Project Area boundary. Ditch allows potential flows into Wetland C.

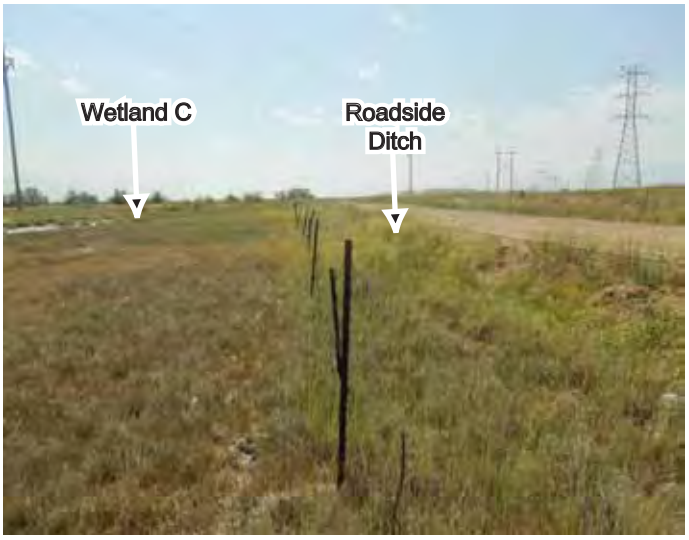


Photo 52c. South view of roadside ditch. Ditch was dry at the time of the August 5, 2021 on-site inspection.

K.2.a Wetland Delineation Report.pdf

Sample Point 1A (SP1A). Overview of Wetland A soil profile. Saturated at 3 inches below the surface.

SP1A. Overview of SP1A Wetland A vegetation plot.

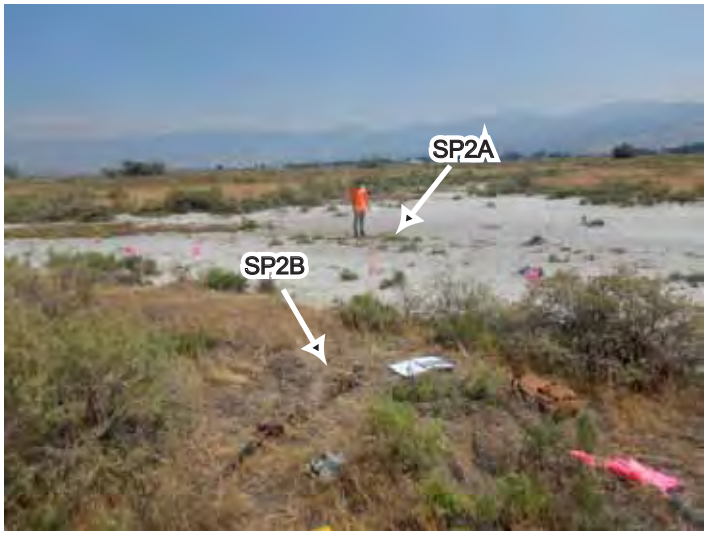
Sample Point 1B (SP1B). Overview of upland soil pit. No hydric soil or hydrology indicators present.

SP1B. Overview of SP1B vegetation plot in adjacent upland. SP1B is approximately 2.0 feet higher in elevation than SP1A.

Sample Point 2A (SP2A). Overview of Wetland D soil profile.

SP2A. Overview of SP2A vegetation plot in Wetland D. Sparsely vegetated.

Sample Point 2B (SP2B). Upland soil profile. No hydric soil or hydrology indicators present.



SP2B. Overview of upland vegetation plot. SP2B is approximately 2.0 feet higher in elevation than SP2A.

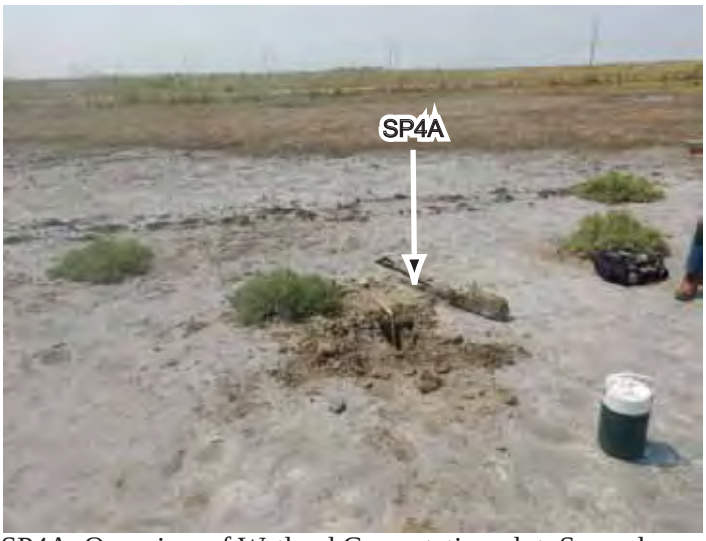
Sample Point 3A (SP3A). Overview of Wetland B soil profile.Saturated at 10 inches below the surface.

SP3A. Overview of Wetland B vegetation plot.

Sample Point 3B (SP3B). Upland soil pit and profile. No hydric soil or hydrology indicators present.

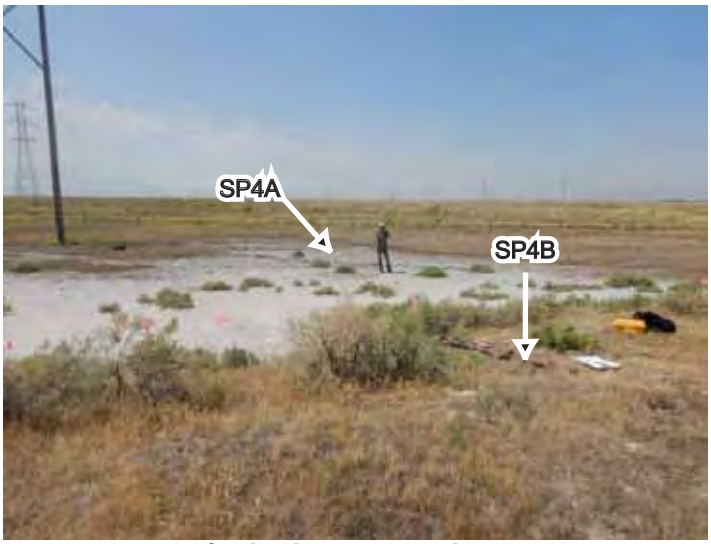
SP3B. Overview of upland vegetation plot. SP3B is approximately 2.5 feet higher in elevation than SP3A.

Sample Point 4A (SP4A). Overview of Wetland C soil profile.



SP4A. Overview of Wetland C vegetation plot. Sparsely vegetated.

Sample Point 4B (SP4B). Upland soil profile. No hydric soils or hydrology indicators present.



SP4B. Overview of upland vegetation plot. SP4B is approximately 2.0 feet higher in elevation than SP4A.

OHWM Cross-section 1 (XS-1) East view of XS-1 on Rudy Drain Stream Channel. OHWM is 19.5 feet wide and 3.0 feet deep.

XS-1. Southeast up-gradient view of Rudy Drain Stream Channel.

XS-1. Northwest down-gradient view of Rudy Drain Stream Channel.

OHWM Cross-section 2 (XS-2). South view of XS-2 on Rudy Drain Stream Channel. OHWM is 23.25 feet wide and 2.5 feet deep.

XS-2.East up-gradient view of Rudy Drain Stream Channel.

XS-2. West down-gradient view of Rudy Drain Stream Channel.

Test Pit 1. Close up view of Test Pit 1. No evidence of water table to 44 inches.

Test Pit 1. North landscape overview of Test Pit 1.

Test Pit 2. Close-up view of Test Pit 2. No evidence of water table to 46 inches.

Test Pit 2. North landscape overview of Test Pit 2.

Test Pit 3. Close-up view of Test Pit 3. No evidence of water table to 43 inches.

Test Pit 3. North landscape overview of Test Pit 3.

Test Pit 4. Close up view of Test Pit 4. No evidence of water table to 43 inches.

Test Pit 4. North landscape overview of Test Pit 4.

Test Pit 5. Close up view of Test Pit 5. No evidence of water table to 45 inches.

Test Pit 5. North landscape overview of Test Pit 5.

Test Pit 6. Close up view of Test Pit 6. No evidence of water table to 39 inches.

Test Pit 6. North landscape overview of Test Pit 6.

Test Pit 10. Close up view of Test Pit 10. No evidence of water table to 38 inches.

Test Pit 10. South landscape overview of Test Pit 10.

Test Pit 11. Close-up view of Test Pit 11. No evidence of water table to 45 inches.

Test Pit 11. North landscape overview of Test Pit 11.

Test Pit 12. Close-up view of Test Pit 12. No evidence of water table to 42 inches.

Test Pit 12. North landscape overview of Test Pit 12.

Test Pit 18. Close up view of Test Pit 18. No evidence of water table to 42 inches.

Test Pit 18. North landscape overview of Test Pit 18.

Test Pit 1. Landscape overview of Test Pit 1.
No evidence of water table to 33 inches.

Test Pit 1. West landscape view from Test Pit 1.

Test Pit 2. Landscape overview of Test Pit 2.
No evidence of water table to 33 inches.

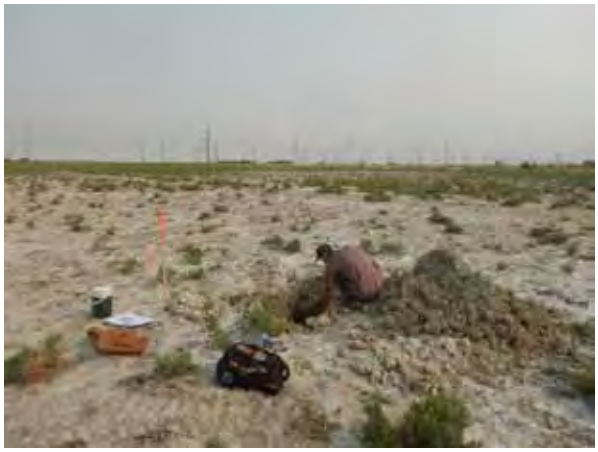
Test Pit 2. North landscape view from Test Pit 2.

Test Pit 3. Landscape overview of Test Pit 3.
No evidence of water table to 31 inches.

Test Pit 3. East landscape view from Test Pit 3.

Test Pit 4. Landscape overview of Test Pit 4.
No evidence of water table to 27 inches.

Test Pit 4. South landscape view from Test Pit 4.

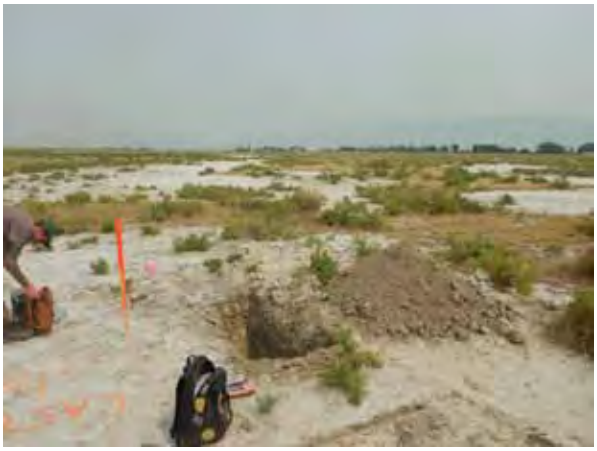


Test Pit 5. Landscape overview of Test Pit 5.
No evidence of water table to 33 inches.

Test Pit 5. South landscape view from Test Pit 5.

Test Pit 6. Landscape overview of Test Pit 6.
No evidence of water table to 33 inches.

Test Pit 6. North landscape view from Test Pit 6.

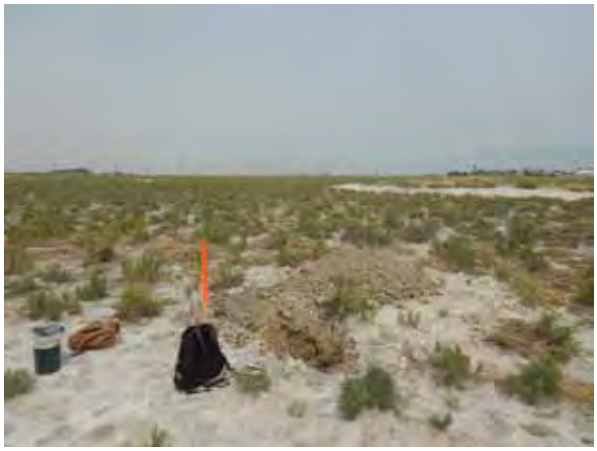


Test Pit 10. Landscape overview of Test Pit 10.
No evidence of water table to 32 inches.

Test Pit 10. South landscape view from Test Pit 10.

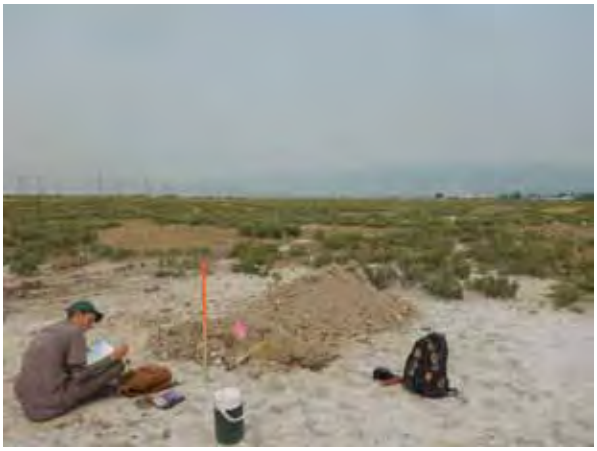
Test Pit 11. Landscape overview of Test Pit 11.
No evidence of water table to 33 inches.

Test Pit 11. West landscape view from Test Pit 11.



Test Pit 12. Landscape overview of Test Pit 12.
No evidence of water table to 32 inches.

Test Pit 12. East landscape view from Test Pit 12.



Test Pit 18. Landscape overview of Test Pit 18. No evidence of water table to 35 inches.

Test Pit 18. East landscape view from of Test Pit 18.

RP WETLANDS & WATERFOWL

Mark Wilson
Scannell Properties
294 Grove Lane East, ste 140
Wayzata, MN 55391

Re: Scannell Salt Lake City Project.

Dear Mark

This is to serve as Proof that the Machine Lake Mitigation Bank has sufficient credits to mitigate potential wetland impacts on the Scannell Property north of the Salt Lake City Airport. In discussing with Dennis Wenger of Frontier Corp the Palustrine Wetland Complex your firm is dealing with is a mixture of our Saline Wet Meadow Credits and Fresh Water Palustrine-Marsh Credits. We have approximately 40.76 and Saline Wet Meadow Credits available and 28.73 Fresh Marsh Complex credits.

We look forward to the opportunity to assist your team in completing any requirements of mitigating wetlands that would be required on a USACE 404 Permit.

Sincerely,

Adam L Adams
Sales Manager
Machine Lake Mitigation Bank
801.556.9008

K.2.c Wetland_Proof of Submittal to Army Corps.pdf
Adam Frankenberg

From: Dennis Wenger <dwenger@frontiercorp.net>
Sent: Wednesday, September 29, 2021 9:22 PM
To: Nicole.D.Fresard@usace.army.mil
Cc: Adam Frankenberg
Subject: Swaner Aquatic Resources Delineation and Request for PJD, Salt Lake City, Utah
Attachments: Swaner Property Delineation Rpt_Sept2021.pdf

Swaner Property - Approximately 420.07 Acres Project Area
Aquatic Resources and Wetlands Delineation Technical Report
Salt Lake City, Salt Lake County, Utah
Sections 9 and 16, Township 1 North, Range 1 West

Dear Nicole:
Attached is a pdf copy of the aquatic resources delineation technical report for the above referenced project area location in Salt Lake City, Utah.
The delineation was done on behalf of Scannell Properties, LLC. Adam Frankenberg is the contact person for Scannell Properties. His contact information is:

Adam Frankenberg, Project Manger
Scannell Properties, LLC
294 Grove Lane East, Suite 140
Wayzata, Minnesota 55391
Cell Phone: (952)913-5785
Email: adamf@scannellproperties.com

On behalf of Scannell Properties, we are requesting a preliminary jurisdictional determination (PJD) to confirm the delineation results documented in the report. A jurisdictional determination request form is provided in Appendix A. The PJD is needed for local planning and zoning coordination for the future development of the property and to assess potential Section 404 permitting that may be needed to develop the property.

I will contact you next week to coordinated next steps to review the delineation results. In the meantime, please feel free to contact me if you have any questions or need any additional information to begin the delineation review process.

Thank you.
Sincerely,
Dennis Wenger

DENNIS C. WENGER
Senior Project Manager/Principal

Frontier Corporation USA
221 N. Gateway Drive, Suite B
Providence, UT 84332
(435) 753-9502 Office
(435) 757-7022 Cell
www.frontiercorp.net

REPORT - UPDATE
PRELIMINARY GEOTECHNICAL STUDY
PROPOSED SWANER PROPERTY
NEAR 3300 NORTH 2200 WEST
SALT LAKE CITY, UTAH

PRELIMINARY

Submitted To:

Scannell Properties
8801 River Cross Boulevard, Suite 300
Indianapolis, Indiana 46240

Submitted By:

GSH Geotechnical, Inc.
473 West 4800 South
Salt Lake City, Utah 84123

August 18, 2021

Job No. 0622-007-21

August 18, 2021
Job No. 0622-007-21

Mr. Adam Frankenberg
Scannell Properties
8801 River Cross Boulevard, Suite 300
Indianapolis, Indiana 46240

Mr. Frankenberg:

Re: Report - Updated
Preliminary Geotechnical Study
Proposed Swaner Property
Near 3300 North 2200 West
Salt Lake City, Utah

PRELIMINARY

1. INTRODUCTION

1.1 GENERAL

This report presents the results of our preliminary geotechnical study performed at the site of the Swaner Property located near 3300 North 2200 West in Salt Lake City, Utah. The general location of the site with respect to existing roadways, as of 2021, is presented on Figure 1, Vicinity Map. A more detailed layout of the site showing proposed facilities, existing roadways, and the borings drilled in conjunction with this study is presented on Figure 2, Site Plan.

1.2 OBJECTIVES AND SCOPE

The objectives and scope of the study were planned in discussions between Mr. Adam Frankenberg of Scannell Properties and Mr. Alan Spilker of GSH Geotechnical, Inc. (GSH).

In general, the objectives of this study were to:

1. Define and evaluate the subsurface soil and groundwater conditions across the site.

2. Provide appropriate preliminary foundation, earthwork, pavement, and geoseismic recommendations to be utilized in the design and construction of the proposed facilities.

GSH Geotechnical, Inc.
473 West 4800 South
Salt Lake City, Utah 84123
Tel: 801.685.9190 Fax: 801.685.2990
www.gshgeo.com

In accomplishing these objectives, our scope has included the following:

1. A field program consisting of the exploration, logging, and sampling of 27 borings.

2. A laboratory testing program.

3. An office program consisting of the correlation of available data, engineering analysis, and the preparation of this summary report.

1.3 AUTHORIZATION

Authorization was provided by returning a signed copy of the Professional Services Agreement No. 21-0563.rev1 signed June 15, 2021.

1.4 PROFESSIONAL STATEMENTS

Supporting data upon which our recommendations are based are presented in subsequent sections of this report. Recommendations presented herein are governed by the physical properties of the soils encountered in the exploration borings, projected groundwater conditions, and the layout and design data discussed in Section 2, Proposed Construction. If subsurface conditions other than those described in this report are encountered and/or if design and layout changes are implemented, GSH must be informed so that our recommendations can be reviewed and amended, if necessary.

Our professional services have been performed, our findings developed, and our recommendations prepared in accordance with generally accepted engineering principles and practices in this area at this time.

PRELIMINARY

2. PROPOSED CONSTRUCTION

The project is to consist of the development of the large site for the construction of 14 warehouse structures with footprints ranging from 126,000 to 1,000,000+ square feet and associated pavements. The structures are anticipated to be 1 to 2 stories above grade, will include office/warehouse facilities, and be supported upon conventional spread and continuous wall footings.

Maximum real column and wall loads are anticipated to be on the order of 150 to 220 kips and 5 to 7 kips per lineal foot, respectively. Real loads are defined as the total of all dead plus frequently applied (reduced) live loads.

Paved parking areas, drive lanes, city/county roadways, and loading/unloading areas are planned around the structures. Proposed traffic in the parking areas is anticipated to consist of a moderate volume of automobiles and light trucks, a light volume of medium-weight trucks, and occasional heavyweight trucks. Projected traffic in the drive lanes, city/county roadways, and

loading/unloading areas is anticipated to consist of a moderate volume of automobiles, light trucks, and medium-weight trucks with a light to moderate volume of heavyweight trucks.

Site development will require some earthwork in the form of minor cutting and filling. At this time, we anticipate that maximum site grading cuts and fills, excluding utilities, will be on the order of 1 to 3 feet.

3. SITE INVESTIGATIONS

3.1 GENERAL

Subsurface conditions in unexplored locations or at other times may vary from those encountered at specific boring locations. If such variations are noted during construction or if project development plans are changed, GSH must review the changes and amend our recommendations, if necessary.

Boring locations were established by estimating distances and angles from site landmarks. If increased accuracy is desired by the client, we recommend that the boring locations and elevations be surveyed.

3.2 FIELD PROGRAM

To define and evaluate the subsurface soil and groundwater conditions across the site, 27 borings were completed within the accessible areas. These borings were completed to depths ranging from 11 to 46 feet with a truck-mounted drill rig equipped with hollow-stem augers. The approximate locations of the borings are presented on Figure 2.

The field portion of our study was under the direct control and continual supervision of an experienced member of our geotechnical staff. During the course of the drilling operations, a continuous log of the subsurface conditions encountered was maintained. In addition, samples of the typical soils encountered were obtained for subsequent laboratory testing and examination. The soils were classified in the field based upon visual and textural examination. These classifications were supplemented by subsequent inspection and testing in our laboratory. Graphical representation of the subsurface conditions encountered is presented on Figures 3A through 3AA, Boring Logs. Soils were classified in accordance with the nomenclature described on Figure 4, Key to Boring Log (USCS).

A 3.25-inch outside diameter, 2.42-inch inside diameter (Dames & Moore) and a 2.0-inch outside diameter, 1.38-inch inside diameter drive sampler (SPT) were utilized at select locations and depths. The blow counts recorded on the boring logs were those required to drive the sampler 12 inches with a 140-pound hammer dropping 30 inches.

Following completion of exploration operations, 1.25-inch diameter slotted PVC pipe was installed in most of the borings to provide a means of monitoring the groundwater fluctuations. The borings were backfilled with auger cuttings.

PRELIMINARY

3.3 LABORATORY TESTING

3.3.1 General

To provide data necessary for our engineering analysis, a laboratory testing program was performed. This program included moisture, density, partial gradation, Atterberg limits, consolidation, and chemical tests. The following paragraphs describe the tests and summarize the test data.

3.3.2 Moisture and Density Tests

To provide index parameters and to correlate other test data, moisture and density tests were performed on selected samples. The results of these tests are presented on the boring logs, Figures 3A through 3AA.

3.3.3 Partial Gradation Tests

To aid in classifying the granular soils, partial gradation tests were performed. Results of the tests are tabulated below and presented on the boring logs, Figures 3A through 3AA.

Boring No.	Depth (feet)	Percent Passing No. 200 Sieve	Moisture Content Percent	Soil Classification
B-7	20.0	26.2	21.7	SM
B-8	15.0	29.3	18.4	SM*
B-8	20.0	15.1	20.7	SM/SC
B-8	40.0	83.8	26.5	CL
B-13	10.0	57.9	31.3	SM/SC*
B-20	15.0	17.4	18.2	SM

*Sample contained layers of clay

PRELIMINARY

3.3.4 Atterberg Limits Tests

To aid in classifying the soils, Atterberg limits tests were performed on representative samples of the fine-grained cohesive soils. Results of the tests are maintained within our files and may be transmitted to you, upon your request.

3.3.5 Consolidation Tests

To provide data necessary for our settlement analysis, consolidation testing was performed on 4 representative samples of the natural fine-grained clay soils encountered at the site. The results of these tests indicate that the samples tested were moderately over-consolidated and will exhibit

moderate strength and compressibility characteristics under the anticipated loading. Detailed results of the tests are maintained within our files and can be transmitted to you, upon your request.

3.3.6 Chemical Tests

To determine if the site soils will react detrimentally with concrete, chemical tests were performed on a representative sample of the near-surface soil encountered at the site. The results of the chemical tests are tabulated below:

Boring No.	Depth (feet)	Soil Classification	pH	Total Water Soluble Sulfate (mg/kg-dry)
B-1	2.5	SM/SC	10.1	180

4. SITE CONDITIONS

4.1 SURFACE

The site is currently vacant/undeveloped land with an abandoned single-family residential structure with associated outbuildings as well as an unpaved road leading to the structures in the southern portion of the site. The topography of the site is relatively flat, grading down to the northwest with a total relief of approximately 4 to 6 feet. Site vegetation consists of various sparse weeds and brush/grass throughout.

The site is bounded to the north by similar vacant/undeveloped land; to the east by similar vacant/undeveloped land along with single-family residential structure as well as 2200 West Street; to the south by similar vacant/undeveloped land along with a canal and an unpaved dirt road; and to the west by the aforementioned canal followed by similar vacant/undeveloped land along with 3200 West Street.

PRELIMINARY

4.2 SUBSURFACE SOIL

The following paragraphs provide generalized descriptions of the subsurface profiles and soil conditions encountered within the borings conducted during this study. As previously noted, soil conditions may vary in unexplored locations.

The borings were completed to depths ranging from 11 to 46 feet. The soil conditions encountered in each of the borings, to the depths completed, were generally similar across the boring locations.

- Approximately 8 inches of topsoil was encountered in Boring B-14. Topsoil thickness is frequently erratic and thicker zones of topsoil should be anticipated.

- Non-engineered fill soils were encountered in Boring B-23, to a depth of 4 feet beneath the existing ground surface. The non-engineered fill soils consisted of sand with silt and gravel content.

- Natural soils were encountered below the non-engineered fill or the ground surface in each boring. The natural soils consisted primarily of clay with varying silt, sand, and gravel content as well as sand with varying clay and silt content.

The natural clay soils were very soft to stiff, dry to saturated, varied in color (light gray, gray, dark gray, black, light brown, and brown), and moderately over-consolidated. The natural clay soils are anticipated to exhibit moderate strength and compressibility characteristics under the anticipated loading.

The natural sand soils were very loose to very dense, dry to saturated, and varied in color (gray, dark gray, light brown, and brown). The natural sand soils are anticipated to exhibit moderately high strength and moderately low compressibility characteristics under the anticipated load range.

For a more descriptive interpretation of subsurface conditions, please refer to Figures 3A through 3AA, Boring Logs. The lines designating the interface between soil types on the boring logs generally represent approximate boundaries. In situ, the transition between soil types may be gradual.

4.3 GROUNDWATER

On July 9, 2021 (9 days following drilling), groundwater was measured within the PVC pipes installed as tabulated below:

Boring No.	Groundwater Depth (feet)
	July 9, 2021
B-1	15.4
B-2	6.9
B-3	5.4
B-5	5.1
B-6	5.3
B-7	9.1
B-8	11.8
B-11	7.1

PRELIMINARY

Boring No.	Groundwater Depth (feet)
	July 9, 2021
B-13	10.0
B-16	6.9
B-17	6.1
B-19	6.0
B-20	18.1
B-21	5.5
B-22	4.3
B-23	8.5
B-24	4.8
B-25	4.5
B-26	6.6
B-27	8.0

Groundwater levels vary with changes in season and rainfall, construction activity, irrigation, snow melt, surface water run-off, and other site-specific factors.

PRELIMINARY

5. DISCUSSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The proposed structures may be supported upon conventional spread and continuous wall foundations supported upon suitable natural soils and/or structural fill extending to suitable natural soils.

The most significant geotechnical aspects at the site are:

1. The existing structures and utilities on the site that are to be demolished/relocated.
2. The existing non-engineered fills encountered at the site.
3. The potential to encounter additional non-engineered fill at the site.
4. The relatively shallow depth to groundwater.

5. The potentially liquefiable sand layers encountered in Boring B-8.

Prior to proceeding with construction, demolition and removal of the existing structures, slabs, foundations, pavements, associated debris, surface vegetation, root systems, topsoil, non-engineered fill, and any deleterious materials from beneath an area extending out at least 5 feet from the perimeter of the proposed structure footprints and 3 feet beyond rigid pavements and exterior flatwork areas will be required. All existing utility locations should be reviewed to assess their impact on the proposed construction and abandoned and/or relocated as appropriate.

Due to the developed nature of this site and the surrounding area, additional non-engineered fills may exist in unexplored areas of the site. Based on our experience, non-engineered fills are frequently erratic in composition and consistency. All surficial loose/disturbed soils and non-engineered fills must be removed below all footings, floor slabs, and rigid pavements. The in situ, non-engineered fills may remain below flexible pavements if free of any deleterious materials, of limited thickness, and if properly prepared, as discussed later in this report.

On-site non-engineered fill soils encountered were primarily granular. On-site granular soils, including existing non-engineered fills, may be re-utilized as structural site grading fill if they meet the criteria for such, as stated later in this report.

Groundwater was measured as shallow as 4.3 feet below the ground surface. GSH recommends placing floor slabs no closer than 4 feet from the highest groundwater elevation or 1.5 feet if a foundation subdrain system is utilized. A design for a foundation subdrain system will be provided, upon request. As an alternative, site grading fill may be utilized to raise the overall grade to achieve the required separation between the floor slab and the highest groundwater elevation.

Proof rolling of the natural clay subgrade must not be completed if cuts extend to within 1 foot of the groundwater surface. In areas where cuts are to extend to within 1 foot of the groundwater surface, stabilization must be anticipated.

To reduce disturbance of the natural soils during excavation, it is recommended that low-impact, track-mounted equipment with smooth edge buckets/blades be utilized.

Loose to medium dense, saturated sand layers were encountered in Boring B-8. Due to liquefiable soils being present, a site-specific response analysis may be required. Section 20.3.1 of ASCE 7-16 provides exception to the requirement of this analysis under certain conditions. These options will need to be reviewed and evaluated by the project structural engineer. If needed, GSH can provide additional information and analysis, including a complete site-specific response analysis.

Detailed discussions pertaining to earthwork, foundations, pavements, and the geoseismic setting of the site are presented in the following sections.

PRELIMINARY

5.2 EARTHWORK

5.2.1 Site Preparation

Initial site preparation will consist of the demolition and removal of the existing structures, slabs, foundations, pavements, associated debris, non-engineered fills, surface vegetation, root systems, topsoil, and any deleterious materials from beneath an area extending out at least 5 feet from the perimeter of the proposed structure footprint and 3 feet beyond rigid pavements and exterior flatwork areas. All existing utility locations should be reviewed to assess their impact on the proposed construction and abandoned and/or relocated as appropriate.

In situ, non-engineered fills may remain below flexible pavements if free of debris and deleterious materials, less than 3 feet in thickness, and if properly prepared. Proper preparation below pavements will consist of the scarification of the upper 12 inches below the asphalt pavement sequence, followed by moisture preparation and re-compaction to the requirements of structural fill. Even with proper preparation, pavements established overlying non-engineered fills may encounter some long-term movements unless the non-engineered fills are completely removed.

It must be noted that from a handling and compaction standpoint, soils containing high amounts of fines (silts and clays) are inherently more difficult to rework and are very sensitive to changes in moisture content, requiring very close moisture control during placement and compaction. This will be very difficult, if not impossible, during wet and cold periods of the year. Additionally, the on-site soils are likely above optimum moisture content for compacting at present and would require some drying prior to re-compacting.

Subsequent to stripping and prior to the placement of floor slabs, foundations, structural site grading fills, exterior flatwork, and pavements, the exposed subgrade must be proof rolled by passing moderate-weight rubber tire-mounted construction equipment over the surface at least twice. If excessively soft or otherwise unsuitable soils are encountered beneath footings, they must be completely removed. If removal depth required is greater than 2 feet below footings, GSH must be notified to provide further recommendations. In pavement, floor slab, and outside flatwork areas, unsuitable natural soils should be removed to a maximum depth of 2 feet and replaced with compacted granular structural fill.

Subgrade preparation as described must be completed prior to placing overlying structural site grading fills.

Due to the relatively high groundwater, site grading cuts should be kept to a minimum. Cuts extending to within 1 foot of the groundwater elevation will likely disturb the natural clay soils and proof rolling must not be completed. Stabilization must be anticipated in areas where cuts are to extend to within 1 foot of the groundwater surface.

To reduce disturbance of the natural soils during excavation, it is recommended that low-impact, track-mounted equipment with smooth edge buckets/blades be utilized.

PRELIMINARY

GSH must be notified prior to the placement of structural site grading fills, floor slabs, footings, and pavements to verify that all loose/disturbed soils and non-engineered fills have been completely removed and/or properly prepared.

5.2.2 Temporary Excavations

Temporary excavations up to 8 feet deep in fine-grained cohesive soils, above or below the water table, may be constructed with sideslopes no steeper than one-half horizontal to one vertical (0.5H:1.0V). Excavations deeper than 8 feet are not anticipated at the site.

For granular (cohesionless) soils, construction excavations above the water table, not exceeding 4 feet, should be no steeper than one-half horizontal to one vertical (0.5H:1.0V). For excavations up to 8 feet, in granular soils and above the water table, the slopes should be no steeper than one horizontal to one vertical (1H:1V). Excavations encountering saturated cohesionless soils will be very difficult and will require very flat sideslopes and/or shoring, bracing, and dewatering.

To reduce disturbance of the natural soils during excavation, it is recommended that low-impact, track-mounted equipment with smooth edge buckets/blades be utilized.

The static groundwater table was encountered as shallow 4.3 feet below the existing surface and may be shallower with seasonal fluctuations. Consideration for dewatering of utility trenches, excavations for the removal of non-engineered fill, and other excavations below this level should be incorporated into the design and bidding process.

All excavations must be inspected periodically by qualified personnel. If any signs of instability or excessive sloughing are noted, immediate remedial action must be initiated.

5.2.3 Structural Fill

Structural fill is defined as all fill which will ultimately be subjected to structural loadings, such as imposed by footings, floor slabs, pavements, etc. Structural fill will be required as backfill over foundations and utilities, as site grading fill, and as replacement fill below footings. All structural fill must be free of surface vegetation, root systems, rubbish, topsoil, frozen soil, and other deleterious materials.

Structural site grading fill is defined as structural fill placed over relatively large open areas to raise the overall grade. For structural site grading fill, the maximum particle size shall not exceed 4 inches; although, occasional larger particles, not exceeding 8 inches in diameter, may be incorporated if placed randomly in a manner such that “honeycombing” does not occur and the desired degree of compaction can be achieved. The maximum particle size within structural fill placed within confined areas shall be restricted to 2 inches.

On-site soils, including existing non-engineered fills, may be re-utilized as structural site grading fill if they do not contain construction debris or deleterious material and meet the requirements of

PRELIMINARY

structural fill. Fine-grained soils will require very close moisture control and may be very difficult, if not impossible, to properly place and compact during wet and cold periods of the year.

Imported structural fill below foundations and floor slabs shall consist of a well graded sand and gravel mixture with less than 30 percent retained on the three-quarter-inch sieve and less than 20 percent passing the No. 200 Sieve (clays and silts).

To stabilize soft subgrade conditions (if encountered) or where structural fill is required to be placed closer than 2.0 feet above the water table at the time of construction, a mixture of coarse angular gravels and cobbles and/or 1.5- to 2.0-inch gravel (stabilizing fill) should be utilized. It may also help to utilize a stabilization fabric, such as Mirafi 600X or equivalent, placed on the natural ground if 1.5- to 2.0-inch gravel is used as stabilizing fill.

5.2.4 Fill Placement and Compaction

All structural fill shall be placed in lifts not exceeding 8 inches in loose thickness. Structural fills shall be compacted in accordance with the percent of the maximum dry density as determined by the AASHTO[1] T180 (ASTM[2] D1557) compaction criteria in accordance with the following table:

Location	Total Fill Thickness (feet)	Minimum Percentage of Maximum Dry Density
Beneath an area extending at least 5 feet beyond the perimeter of the structure	0 to 10	95
Site grading fills outside area defined above	0 to 5	90
Site grading fills outside area defined above	5 to 10	95
Utility trenches within structural areas	--	96
Road base	--	96

Structural fills greater than 10 feet thick are not anticipated at the site.

Subsequent to stripping and prior to the placement of structural site grading fill, the subgrade shall be prepared as discussed in Section 5.2.1, Site Preparation, of this report. In confined areas, subgrade preparation should consist of the removal of all loose or disturbed soils.

Coarse angular gravel and cobble mixtures (stabilizing fill), if utilized, shall be end dumped, spread to a maximum loose lift thickness of 15 inches, and compacted by dropping a backhoe bucket onto

[1] American Association of State Highway and Transportation Officials
[2] American Society for Testing and Materials

PRELIMINARY

the surface continuously at least twice. As an alternative, the stabilizing fill may be compacted by passing moderately heavy construction equipment or large self-propelled compaction equipment over the surface at least twice. Subsequent fill material placed over the coarse gravels and cobbles shall be adequately compacted so that the "fines" are "worked into" the voids in the underlying coarser gravels and cobbles. Where soil fill materials are to be placed directly over more than about 18 inches of clean gravel, a separation geofabric, such as Mirafi 140N or equivalent, is recommended to be placed between the gravel and subsequent soil fills.

Non-structural fill may be placed in lifts not exceeding 12 inches in loose thickness and compacted by passing construction, spreading, or hauling equipment over the surface at least twice.

5.2.5 Utility Trenches

All utility trench backfill material below structurally loaded facilities (footings, floor slabs, flatwork, pavements, etc.) shall be placed at the same density requirements established for structural fill. If the surface of the backfill becomes disturbed during the course of construction, the backfill shall be proof rolled and/or properly compacted prior to the construction of any exterior flatwork over a backfilled trench. Proof rolling shall be performed by passing moderately loaded rubber tire-mounted construction equipment uniformly over the surface at least twice. If excessively loose or soft areas are encountered during proof rolling, they shall be removed to a maximum depth of 2 feet below design finish grade and replaced with structural fill.

Many utility companies and City-County governments are now requiring that Type A-1a or A-1b (AASHTO Designation – granular soils with limited fines) soils be used as backfill over utilities. These organizations are also requiring that in public roadways, the backfill over major utilities be compacted over the full depth of fill to at least 96 percent of the maximum dry density as determined by the AASHTO T180 (ASTM D1557) method of compaction. GSH recommends that as the major utilities continue onto the site that these compaction specifications are followed.

Fine-grained soils, such as silts and clays, are not recommended for utility trench backfill in structural areas.

The static groundwater table was encountered as shallow as 4.3 feet below the existing surface and may be shallower with seasonal fluctuations. Dewatering of utility trenches and other excavations below this level should be anticipated.

To reduce disturbance of the natural soils during excavation, it is recommended that low-impact, track-mounted equipment with smooth edge buckets/blades be utilized.

5.3 GROUNDWATER

On July 9, 2021 (9 days following drilling), groundwater was measured within the PVC pipes installed as tabulated on the following page.

PRELIMINARY

Boring No.	Groundwater Depth (feet)
	July 9, 2021
B-1	15.4
B-2	6.9
B-3	5.4
B-5	5.1
B-6	5.3
B-7	9.1
B-8	11.8
B-11	7.1
B-13	10.0
B-16	6.9
B-17	6.1
B-19	6.0
B-20	18.1
B-21	5.5
B-22	4.3
B-23	8.5
B-24	4.8
B-25	4.5
B-26	6.6
B-27	8.0

PRELIMINARY

Based on the anticipated cuts necessary to reach design subgrades, we anticipate temporary and permanent dewatering may be necessary. Floor slabs must be placed a minimum of 4 feet from the stabilized groundwater elevation or 1.5 feet if a perimeter subdrain system is utilized. A design for a foundation subdrain system will be provided, upon request. As an alternative, site grading fill may be utilized to raise the overall grade to achieve the required separation between the floor slab and the highest groundwater elevation.

The groundwater measurements presented are conditions at the time of the field exploration and may not be representative of other times or locations. Groundwater levels may vary seasonally and with precipitation, as well as other factors including irrigation. Evaluation of these factors is beyond the scope of this study. Groundwater levels may, therefore, be at shallower or deeper depths than those measured during this study, including during construction and over the life of the structure.

The extent and nature of any dewatering required during construction will be dependent on the actual groundwater conditions prevalent at the time of construction and the effectiveness of construction drainage to prevent run-off into open excavations.

5.4 SPREAD AND CONTINUOUS WALL FOUNDATIONS

5.4.1 Design Data

The results of our analysis indicate that the proposed structures may be supported upon conventional spread and continuous wall foundations established upon suitable natural soils and/or structural fill extending to suitable natural soils. Under no circumstances shall foundations be established over non-engineered fills, loose or disturbed soils, topsoil, surface vegetation, root systems, rubbish, construction debris, other deleterious materials, frozen soils, or within ponded water. More heavily loaded footings will require a certain amount of granular structural replacement fill as specified in Section 5.4.3, Settlements, of this report. For design, the following parameters are provided:

Minimum Recommended Depth of Embedment for Frost Protection	- 30 inches
Minimum Recommended Depth of Embedment for Non-frost Conditions	- 15 inches
Recommended Minimum Width for Continuous Wall Footings	- 18 inches
Minimum Recommended Width for Isolated Spread Footings	- 24 inches
Recommended Net Bearing Capacity for Real Load Conditions	- 2,000 pounds per square foot
Bearing Capacity Increase for Seismic Loading	- 50 percent

PRELIMINARY

The term "net bearing capacity" refers to the allowable pressure imposed by the portion of the structure located above lowest adjacent final grade. Therefore, the weight of the footing and backfill to lowest adjacent final grade need not be considered. Real loads are defined as the total of all dead plus frequently applied live loads. Total load includes all dead and live loads, including seismic and wind.

5.4.2 Installation

Under no circumstances shall the footings be installed upon non-engineered fills, loose or disturbed soils, topsoil, surface vegetation, root systems, rubbish, construction debris, or other deleterious materials. If unsuitable soils are encountered, they must be removed and replaced with compacted granular fill. If granular soils become loose or disturbed, they must be recompacted prior to pouring the concrete.

The width of structural replacement fill below footings should be equal to the width of the footing plus one foot for each foot of fill thickness.

5.4.3 Settlements

Granular structural replacement fill will be required under more heavily loaded footings. For the required amount, refer to the table below:

Foundations	Loading	Minimum Thickness of Replacement Structural Granular Fill (feet)
Wall	Up to 7 kips per lineal foot	0
	7 to 10 kips per lineal foot	1.0
	10 to 13 kips per lineal foot	2.0
Spread	Up to 175 kips	0
	175 kips to 250 kips	1.0
	250 kips to 350 kips	2.0

Based on column loadings, soil bearing capacities, and the foundation recommendations as discussed above, we expect primary total settlement beneath individual foundations to be less than one inch. Due to the relatively compressible clay layer at a depth of 10 feet, loads exceeding 13 kips per lineal foot for strip footings and 350 kips for columns will cause excessive settlements. If foundation loads are to exceed these values a ground improvement system such as rammed-aggregate piers may be utilized.

The amount of differential settlement is difficult to predict because the subsurface and foundation loading conditions can vary considerably across the site. However, we anticipate differential

PRELIMINARY

settlement between adjacent foundations could vary from 0.5 to 0.75 inch. The final deflected shape of the structure will be dependent on actual foundation locations and loading.

5.5 LATERAL RESISTANCE

Lateral loads imposed upon foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footings and the supporting soils. In determining frictional resistance, a coefficient of friction of 0.35 may be utilized for the footing interface with the in situ natural clay soils and 0.40 for footing interface with natural granular soils or granular structural fill. Passive resistance provided by properly placed and compacted granular structural fill above the water table may be considered equivalent to a fluid with a density of 300 pounds per cubic foot. Below the water table, this granular soil should be considered equivalent to a fluid with a density of 150 pounds per cubic foot.

A combination of passive earth resistance and friction may be utilized provided that the friction component of the total is divided by 1.5.

5.6 FLOOR SLABS

Floor slabs may be established upon suitable natural subgrade soils or structural fill extending to suitable natural soils. Under no circumstances shall floor slabs be established directly over non-engineered fills, loose or disturbed soils, sod, rubbish, construction debris, other deleterious materials, frozen soils, or within ponded water.

Additionally, GSH recommends that floor slabs be constructed a minimum of 4.0 feet from the stabilized groundwater elevation or 1.5 feet if a foundation subdrain system is utilized. A design for a foundation subdrain system will be provided, upon request. As an alternative, site grading fill may be utilized to raise the overall grade to achieve the required separation between the floor slab and the highest groundwater elevation.

To facilitate curing of the concrete and to provide a capillary moisture break, it is recommended that floor slabs be directly underlain by at least 4 inches of "free-draining" fill, such as "pea" gravel or three-quarters to one-inch minus clean gap-graded gravel.

Settlement of lightly loaded floor slabs designed according to previous recommendations (average uniform pressure of 200 pounds per square foot or less) is anticipated to be less than one-quarter of an inch.

5.7 PAVEMENTS

The natural clay and non-engineered fill soils will exhibit poor pavement support characteristics when saturated. All pavement areas must be prepared as previously discussed (see Section 5.2.1, Site Preparation). Under no circumstances shall pavements be established over unprepared non-engineered fills, loose or disturbed soils, topsoil, surface vegetation, root systems, rubbish,

PRELIMINARY

construction debris, other deleterious materials, frozen soils, or within ponded water. With the subgrade soils and the projected traffic as discussed in Section 2, Proposed Construction, the pavement sections on the following pages are recommended.

Parking Areas

(Moderate Volume of Automobiles and Light Trucks,
Light Volume of Medium-Weight Trucks,
and Occasional Heavyweight Trucks)
[6 equivalent 18-kip axle loads per day]

Flexible Pavements:
(Asphalt Concrete)

3.0 inches	Asphalt concrete
9.0 inches	Aggregate base
Over	Properly prepared fills, stabilized natural subgrade soils, and/or structural site grading fill extending to properly prepared fills and/or stabilized natural subgrade soils

Rigid Pavements:
(Non-reinforced Concrete)

6.0 inches	Portland cement concrete (non-reinforced)
5.0 inches	Aggregate base
Over	Properly prepared and stabilized natural subgrade soils and/or structural site grading fill extending to properly prepared and stabilized natural subgrade soils

PRELIMINARY

Drive Lanes and Loading/Unloading Areas

(200 Automobiles and Light Trucks,
50 Medium-weight Trucks, and 25 Heavyweight Trucks)
[104 equivalent 18-kip axle loads per day]

Flexible Pavements:
(Asphalt Concrete)

4.0 inches	Asphalt concrete
8.0 inches	Aggregate base
10.0 inches*	Aggregate subbase
Over	Properly prepared fills, stabilized natural subgrade soils, and/or structural site grading fill extending to properly prepared fills and/or stabilized natural subgrade soils

* Subbase may consist of granular site grading fills with a minimum California Bearing Ratio (CBR) of 30 percent.

Rigid Pavements:
(Non-reinforced Concrete)

6.0 inches	Portland cement concrete (non-reinforced)
6.0 inches	Aggregate base
Over	Properly prepared and stabilized natural subgrade soils and/or structural site grading fill extending to properly prepared and stabilized natural subgrade soils

PRELIMINARY

City/County Roads
(1,000 Automobiles and Light Trucks,
200 Medium-weight Trucks, and 100 Heavyweight Trucks)
[420 equivalent 18-kip axle loads per day]

Flexible Pavements:
(Asphalt Concrete)

5.0 inches	Asphalt concrete
8.0 inches	Aggregate base
14.0 inches*	Aggregate subbase
Over	Properly prepared fills, stabilized natural subgrade soils, and/or structural site grading fill extending to properly prepared fills and/or stabilized natural subgrade soils

For dumpster pads, we recommend a pavement section consisting of 8.0 inches of Portland cement concrete, 12.0 inches of aggregate base, over properly prepared natural subgrade or site grading structural fills. Dumpster pads should not be constructed overlying non-engineered fills under any circumstances.

These above rigid pavement sections are for non-reinforced Portland cement concrete. Concrete should be designed in accordance with the American Concrete Institute (ACI) and joint details should conform to the Portland Cement Association (PCA) guidelines. The concrete should have a minimum 28-day unconfined compressive strength of 4,000 pounds per square inch and contain 6 percent ±1 percent air-entrainment.

The crushed stone should conform to applicable sections of the current Utah Department of Transportation (UDOT) Standard Specifications. All asphalt material and paving operations should meet applicable specifications of the Asphalt Institute and UDOT. A GSH technician shall observe placement and perform density testing of the base course material and asphalt.

Please note that the recommended pavement section is based on estimated post-construction traffic loading. If the pavement is to be constructed and utilized by construction traffic, the above pavement section may prove insufficient for heavy truck traffic, such as concrete trucks or tractor-trailers used for construction delivery. Unexpected distress, reduced pavement life, and/or premature failure of the pavement section could result if subjected to heavy construction traffic and the owner should be made aware of this risk. If the estimated traffic loading stated herein is not correct, GSH must review actual pavement loading conditions to determine if revisions to these recommendations are warranted.

PRELIMINARY

5.8 CEMENT TYPES

The laboratory tests indicate that the natural soils tested contain a negligible amount of water soluble sulfates. Based on our test results, concrete in contact with the on-site soil will have a low potential for sulfate reaction (ACI 318, Table 4.3.1). Therefore, all concrete which will be in contact with the site soils may be prepared using Type I or IA cement.

5.9 GEOSEISMIC SETTING

5.9.1 General

Utah municipalities have adopted the International Building Code (IBC) 2018. The IBC 2018 code refers to ASCE 7-16 Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE 7-16) determines the seismic hazard for a site based upon mapping of bedrock accelerations prepared by the United States Geologic Survey (USGS) and the soil site class. The USGS values are presented on maps incorporated into the IBC code and are also available based on latitude and longitude coordinates (grid points).

5.9.2 Faulting

Based on our review of available literature, no active faults pass through or immediately adjacent to the site. The nearest active mapped fault consists of the Salt Lake City Section of the Wasatch Fault, located about 2.0 miles to the east of the site.

5.9.3 Site Class

For dynamic structural analysis, the Site Class D – Default Soil Profile as defined in Chapter 20 of ASCE 7-16 (per Section 1613.3.2, Site Class Definitions, of IBC 2018) can be utilized. If a measured site class is desired based on the project structural engineer's evaluation and recommendations, additional testing and analysis can be completed by GSH to determine the measured site class. Please contact GSH for additional information.

5.9.4 Ground Motions

The IBC 2018 code is based on USGS mapping, which provides values of short and long period accelerations for average bedrock values for the Western United States and must be corrected for local soil conditions. The following table summarizes the peak ground and short and long period accelerations for the MCE event and incorporates the appropriate soil amplification factor for a Site Class D – Default* Soil Profile. Based on the site latitude and longitude (40.8330 degrees north and 111.9615 degrees west, respectively) and Risk Category I, the values for this site are tabulated on the following page.

PRELIMINARY

Spectral Acceleration Value, T	Bedrock Boundary [mapped values] (% g)	Site Coefficient	Site Class D - Default* [adjusted for site class effects] (% g)	Design Values** (% g)
0.2 Seconds (Short Period Acceleration)	S_S = 155.3	F_a = 1.200	S_{MS} = 186.4	S_{DS} = 124.3
1.0 Second (Long Period Acceleration)	S_1 = 56.1	F_v = 1.739	S_{M1} = 97.6	S_{D1} = 65.1

* If a measured site class in accordance with IBC 2018/ ASCE 7-16 is beneficial based on the project structural engineers review, please contact GSH for additional options for obtaining this measured site class.

**IBC 2018/ASCE 7-16 may require a site-specific study based on the project structural engineer's evaluation and recommendations. If needed, GSH can provide additional information and analysis including a complete site-specific study in accordance with chapter 21 of ASCE 7-16.

5.9.5 Liquefaction

The site is located in an area that has been identified by the Utah Geological Survey (UGS) as being a "high" liquefaction potential zone. Liquefaction is defined as the condition when saturated, loose, granular soils lose their support capabilities because of excessive pore water pressure, which develops during a seismic event. Clayey soils, even if saturated, will generally not liquefy during a major seismic event.

Calculations were performed using the procedures described in the 2008 Soil Liquefaction During Earthquakes Monograph by Idriss and Boulanger[3]. Our calculations indicate the loose to medium dense, saturated sand layers encountered in Boring B-8 could liquefy during the design seismic event. Calculated settlement associated with the liquefaction of each layer within the borings was less than 2.0 inches. This magnitude of settlement should be tolerable to design for life safety. Additionally, lateral spread and ground rupture are unlikely to occur.

5.10 SITE VISITS

GSH must verify that all topsoil/disturbed soils and any other unsuitable soils have been removed, that non-engineered fills have been removed and/or properly prepared, and that suitable soils have been encountered prior to placing site grading fills, footings, slabs, and pavements. Additionally, GSH must observe fill placement and verify in-place moisture content and density of fill materials placed at the site.

PRELIMINARY

[3] Idriss, I. M., and Boulanger, R. W. (2008), Soil liquefaction during earthquakes: Monograph MNO-12, Earthquake Engineering Research Institute, Oakland, CA, 261 pp.

5.11 CLOSURE

If you have any questions or would like to discuss these items further, please feel free to contact us at (801) 685-9190.

Respectfully submitted,

GSH Geotechnical, Inc.

Alan D. Spilker, P.E.
State of Utah No. 334228
President/Senior Geotechnical Engineer

ADS:jlh

Encl. Figure 1, Vicinity Map
Figure 2, Site Plan
Figures 3A through 3AA, Log of Borings
Figure 4, Key to Boring Log (USCS)

Addressee (email)

PRELIMINARY

2 0 2 4 KM 6

1 0 1 2 3 MI 4

FIGURE 1
VICINITY MAP

REFERENCE:
ALL TRAILS - NATIONAL GEOGRAPHIC TERRAIN
DATED 2021

GSH

ROGER KNUDTH CONSTRUCTION
JOB NO. 0622-007-21

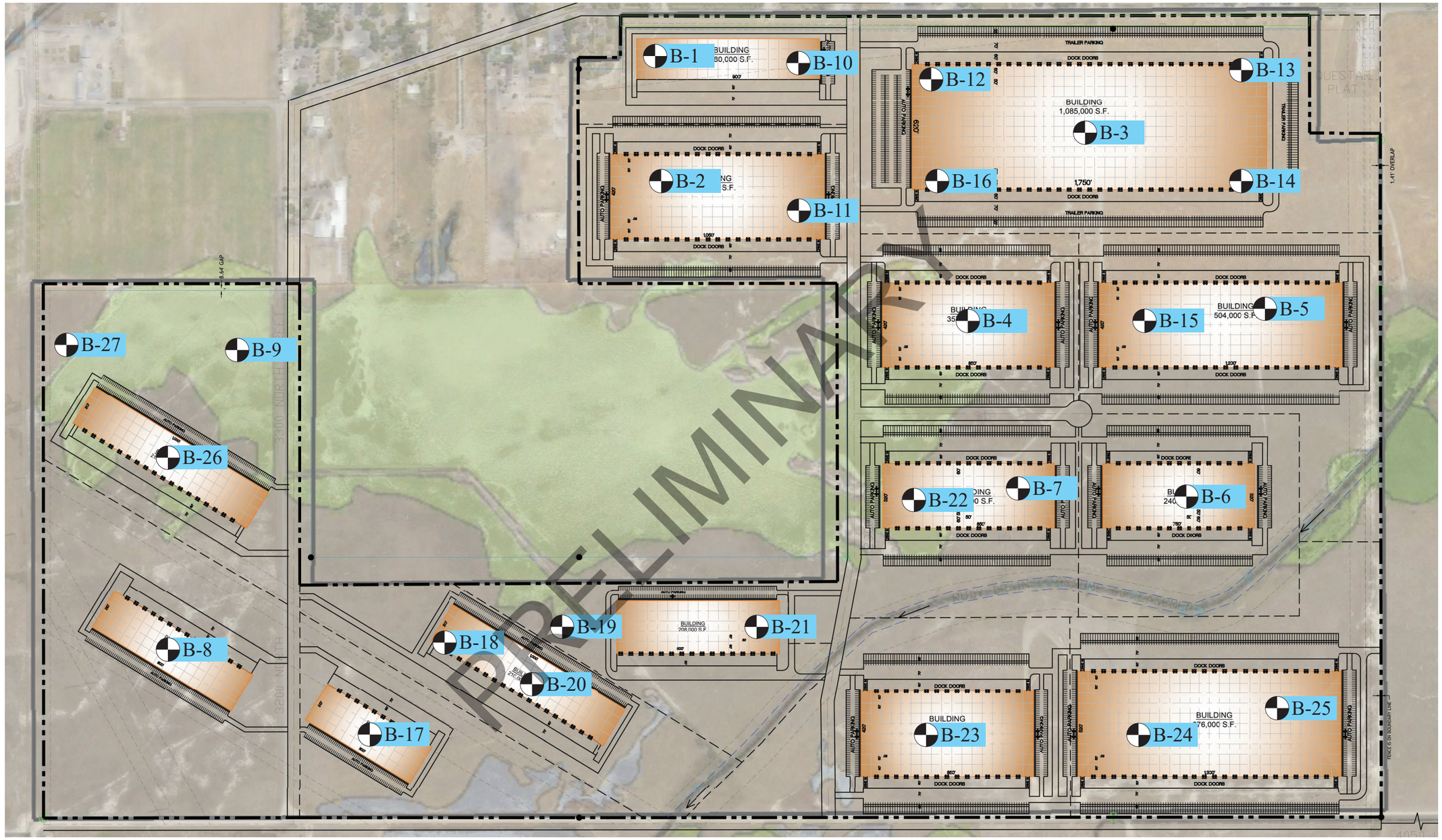


FIGURE 2
SITE PLAN

REFERENCE:
ADAPTED FROM DRAWING ENTITLED
"WAREHOUSE DISRIBUTION FACILITY"
BY SCANNELL PROPERTIES, NOT DATED

APPROXIMATE SCALE IN FEET
250 0 250 500

GSH

GSH

BORING LOG

Page: 1 of 1

BORING: B-1

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/23/21 | DATE FINISHED: 6/23/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 15.4' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SM/SC	SILTY FINE TO MEDIUM SAND with some clay; light brown		31							dry medium dense
	SP/SM	FINE TO COARSE SAND with some silt; brown	5	20		6.7	101				dry medium dense
	CL	SILTY CLAY with some fine to medium sand and layers of fine to medium sand up to 1/4" thick; gray/brown	10	11							moist stiff
▽		grades with trace fine sand; organics	15	18							very stiff saturated
		End of Exploration at 16.0'. Installed 1.25" diameter slotted PVC pipe to 16.0'.	20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3A

GSH

BORING LOG

Page: 1 of 1

BORING: B-2

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/23/21 | DATE FINISHED: 6/23/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 6.9' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SP/ SM	FINE TO MEDIUM SAND with some silt; gray/brown									moist medium dense
				21							
	CL	SILTY CLAY with some fine sand; gray	5								slightly moist stiff
▼				9							saturated
			10	6							medium stiff
		grades with layers of fine to coarse sand up to 1" thick									
		grades with organics; gray/black	15	4		50.3	72				
		End of Exploration at 16.0'. No groundwater encountered at time of drilling. Installed 1.25" diameter slotted PVC pipe to 16.0'.	20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3B

GSH

BORING LOG

Page: 1 of 1

BORING: B-3

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/23/21 | DATE FINISHED: 6/23/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 5.4' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SM	SILTY FINE TO MEDIUM SAND light brown		21		18.8	103				slightly moist medium dense
▼	SP/SM	FINE TO COARSE SAND with some silt; light brown	5	25							slightly moist medium dense saturated
	SM/SC	SILTY FINE TO MEDIUM SAND with some silt; brown/gray	10	30							saturated dense
	CL	SILTY CLAY with trace fine sand; gray	15	4							saturated medium stiff
		End of Exploration at 16.0'. Installed 1.25" diameter slotted PVC pipe to 16.0'.	20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3C

BORING LOG

Page: 1 of 1

BORING: B-4

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/23/21 | DATE FINISHED: 6/23/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: Not Encountered (6/23/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SP/SM	FINE TO COARSE SAND with silt; brown									slightly moist loose
				10							
	SM	SILTY FINE TO MEDIUM SAND gray	5	27							moist medium dense
	SM/SC	SILTY FINE TO COARSE SAND with some clay; gray/brown	10	8		24.6	96				moist very loose
		End of Exploration at 11.0'. No groundwater encountered at time of drilling.	15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3D

BORING LOG

Page: 1 of 1

BORING: B-5

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/23/21 | DATE FINISHED: 6/23/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 5.1' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SM	SILTY FINE TO COARSE SAND light brown		21							dry medium dense
▼			5								saturated
	CL	SILTY CLAY with trace fine sand and layers of sand up to 4" thick; gray		5							saturated medium stiff
		grades brown	10	6		37.2	76				
		grades with some fine to coarse sand; gray									
		grades with trace fine sand	15	5							
		grades wih some coarse sand	20	9							stiff
		End of Exploration at 21.0'. Installed 1.25" diameter slotted PVC pipe to 21.0'.	25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3E

BORING LOG

Page: 1 of 1

BORING: B-6

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/23/21 | DATE FINISHED: 6/23/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 5.3' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE SANDY CLAY with some silt; light brown		21							slightly moist medium dense
▼		grades silty clay with fine sand; gray/brown	5	20		26.3	95				very stiff saturated
	SM/SC	SILTY/CLAYEY FINE TO MEDIUM SAND brown	10	7							saturated loose
	CL	SILTY CLAY with trace fine sand; organics; gray/black	15	4							saturated medium stiff
		End of Exploration at 16.0'. No groundwater encountered at time of drilling. Installed 1.25" diameter slotted PVC pipe to 16.0'.	20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3F

GSH

BORING LOG

Page: 1 of 2

BORING: B-7

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/24/21 | DATE FINISHED: 6/24/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 9.1' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SM/SC	SILTY/CLAYEY FINE SAND light brown		9							dry loose
	CL	SILTY CLAY with fine sand; gray/brown	5	5							dry medium stiff
▼		grades with trace fine to coarse sand; gray	10	2							saturated soft
		grades with trace fine sand; gray	15	2							
	SM	SILTY FINE TO MEDIUM SAND gray	20	22		21.7		26.2			saturated medium dense
	CL	FINE TO MEDIUM SANDY CLAY with silt; brown	25								saturated stiff

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3G

GSH

BORING LOG

Page: 2 of 2

BORING: B-7

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/24/21 | DATE FINISHED: 6/24/21

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
			25	13							
		grades silty clay with trace fine sand; organics; gray/black	30	2							soft
		grades gray	35	6							medium stiff
			40	5							
			45	6							
		End of Exploration at 46.0'. Installed 1.25" diameter slotted PVC pipe to 46.0'.	50								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3G
(continued)

GSH

BORING LOG

Page: 1 of 2

BORING: B-8

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/24/21 | DATE FINISHED: 6/24/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 11.8' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	SILTY CLAY with trace fine sand; gray		4							slightly moist medium stiff
	SM	SILTY FINE TO MEDIUM SAND with roots; brown	5	3							dry very loose
	CL	SILTY CLAY with organics; gray/black	10	0							slightly moist very soft
▼											saturated
	SM	SILTY FINE TO COARSE SAND with layers of silty clay up to 1/2" thick; organics; gray/black	15	12		18.4		29.3			saturated medium dense
	SM/SC	SILTY FINE TO MEDIUM SAND with some clay; gray	20	7		20.7		15.1			saturated loose
		grades with layers of silty clay up to 1" thick	25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3H

GSH

BORING LOG

Page: 2 of 2

BORING: B-8

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/24/21 | DATE FINISHED: 6/24/21

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
			25								
	CL	SILTY CLAY with fine sand; gray		4							saturated medium stiff
		grades with some fine sand	30	10							stiff
		grades with silty fine sand									
			35	4							medium stiff
		grades fine sandy clay									very stiff
			40	26		26.5		83.8			
		grades silty clay with fine to medium sand									medium stiff
			45	6							
		End of Exploration at 46.0'. Installed 1.25" diameter slotted PVC pipe to 46.0'.	50								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3H
(continued)

GSH

BORING LOG

Page: 1 of 1

BORING: B-9

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/24/21 | DATE FINISHED: 6/24/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: Not Encountered (6/24/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	SILTY CLAY with some fine sand; light brown		11							slightly moist medium stiff
		grades with trace fine snd	5	5		42.3	77				
		grades gray	10	3							soft
		End of Exploration at 11.0'. No groundwater encountered at time of drilling.	15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3I

GSH

BORING LOG

Page: 1 of 1

BORING: B-10

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/25/21 | DATE FINISHED: 6/25/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: Not Encountered (6/25/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SM/SC	SILTY/CLAYEY FINE TO MEDIUM SAND light brown		23		19.2	102				dry medium dense
	SP/SM/	FINE TO COARSE SAND with some silt; light brown	5	23							slightly moist medium dense
	CL	SILTY CLAY with trace fine sand; gray	10	16							slightly moist stiff
		End of Exploration at 11.0'. No groundwater encountered at time of drilling.	15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3J

GSH

BORING LOG

Page: 1 of 1

BORING: B-11

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/25/21 | DATE FINISHED: 6/25/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 7.1' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE SANDY CLAY with silt; gray/brown									dry stiff
				20							
			5								
▼		grades silty clay with some fine sand		7		28.6	85				medium stiff saturated
			10	3							soft
		grades gray									
		grades with trace fine sand	15	3		47.4	74				
			20	7							medium stiff
		End of Exploration at 21.0'. No groundwater encountered at time of drilling. Installed 1.25" diameter slotted PVC pipe to 21.0'.									
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3K

GSH

BORING LOG

Page: 1 of 1

BORING: B-12

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/25/21 | DATE FINISHED: 6/25/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 7.5' (6/25/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE SANDY CLAY with silt; light brown									moist stiff
				18		21.7	94				
			5								
▽		grades silty clay with fine sand; gray		5							medium stiff saturated
		grades with trace fine sand	10	5							
		End of Exploration at 11.0'.									
			15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3L

GSH

BORING LOG

Page: 1 of 1

BORING: B-13

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/25/21 | DATE FINISHED: 6/25/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 10.0 (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SM	SILTY FINE TO MEDIUM SAND with trace clay; brown									slightly moist dense
				13							
			5	16							
		grades with layers of silty clay up to 1/2" thick									
▼	SM/SC	SILTY FINE SAND with some clay; gray	10	12		31.3		57.9			medium dense saturated
		grades with layers of silty clay up to 1" thick									
	CL	SILTY CLAY with trace fine sand; organics; black/gray									saturated medium stiff
			15	5							
		grades with some fine sand; gray	20	4							
		End of Exploration at 21.0'. Installed 1.25" diameter slotted PVC pipe to 21.0'.	25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3M

GSH

BORING LOG

Page: 1 of 1

BORING: B-14

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/25/21 | DATE FINISHED: 6/25/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 10.0' (6/25/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE SANDY CLAY with silt; major roots (topsoil) to 8"; brown									dry very stiff
				35							
			5	16							
		grades brown/gray									
	SP/SM	FINE TO COARSE SAND with some silt; gray/brown									slightly moist medium dense
▼			10	26		25.1	96				saturated
		End of Exploration at 11.0'.									
			15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3N

GSH

BORING LOG

Page: 1 of 1

BORING: B-15

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/25/21 | DATE FINISHED: 6/25/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: Not Encountered (6/25/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE TO MEDIUM SANDY CLAY with silt and multiple layers of fine to medium sand up to 1/4" thick; brown		12							slightly moist stiff
		grades with fine sand; gray	5	11		24.3	95				stiff moist
			10	9							
		End of Exploration at 11.0'. No groundwater encountered at time of drilling.	15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3O

BORING LOG

Page: 1 of 1

BORING: B-16

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/25/21 | DATE FINISHED: 6/25/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: BH

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 6.9' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SP/ SM	FINE TO MEDIUM SAND with some silt; brown		13							dry loose
			5								
▼	CL	SILTY CLAY with fine sand; gray/brown		5		42.0	79				moist medium stiff saturated
			10	5							
		grades with trace fine sand	15	5							saturated
		End of Exploration at 16.0'. Installed 1.25" diameter slotted PVC pipe to 16.0'.	20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3P

GSH

BORING LOG

Page: 1 of 1

BORING: B-17

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/29/21 | DATE FINISHED: 6/29/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 6.1' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	SILTY CLAY with some fine sand; light gray									slightly moist soft
				3							
			5	15							stiff
▼											saturated
											soft
		grades with trace fine sand; dark gray	10	4		37.4	84				
		grades fine to medium sandy clay with silt;									
			15	12							stiff
		End of Exploration at 16.0'. Installed 1.25" diameter slotted PVC pipe to 16.0'.	20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3Q

GSH

BORING LOG

Page: 1 of 1

BORING: B-18

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/29/21 | DATE FINISHED: 6/29/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 7.0' (6/29/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE TO MEDIUM SANDY CLAY with silt; light brown									slightly moist medium stiff
				11							
		grades silty clay with some fine to medium sand; gray	5								
▼				5							saturated
		grades dark gray	10	2		43.8	75				soft
		End of Exploration at 11.0'.	15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3R

GSH

BORING LOG

Page: 1 of 1

BORING: B-19

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/29/21 | DATE FINISHED: 6/29/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 6.0' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	SILTY CLAY with trace fine sand; light brown									slightly moist stiff
				12							
	SM/SC	SILTY FINE TO MEDIUM SAND with some clay; light brown									slightly moist loose
▼			5	15		17.3	69				saturated
	CL	CLAY with trace fine sand; light brown									saturated soft
			10	3		40.5	80				
		End of Exploration at 11.0'. Installed 1.25" diameter slotted PVC pipe to 11.0'.									
			15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3S

GSH

BORING LOG

Page: 1 of 1

BORING: B-20

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/29/21 | DATE FINISHED: 6/29/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 18.1' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	SILTY CLAY with trace fine sand; light brown									slightly moist stiff
				19		20.6	91				
		grades fine sandy clay with silt	5	18							
		grades silty clay; dark gray									
			10	4							soft
	SM	SILTY FINE TO COARSE SAND with trace clay; dark gray									moist loose
			15	16		18.2		17.4			
▼	CL	SILTY CLAY dark gray									moist stiff saturated
			20	11							
		End of Exploration at 21.0'. Installed 1.25" diameter slotted PVC pipe to 21.0'.	25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3T

GSH

BORING LOG

Page: 1 of 1

BORING: B-21

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/29/21 | DATE FINISHED: 6/29/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 5.5' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	SILTY CLAY with some fine sand; light brown									slightly moist stiff
				15							
▼			5								saturated
		grades fine sandy clay with silt; gray		1							very soft
			10	4							soft
		End of Exploration at 11.0'. Installed 1.25" diameter slotted PVC pipe to 11.0'.									
			15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3U

GSH

BORING LOG

Page: 1 of 1

BORING: B-22

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/29/21 | DATE FINISHED: 6/29/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 4.3' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SP	FINE TO COARSE SAND with trace silt; light brown									slightly moist loose
				10		8.6	76				
	CL	SILTY CLAY with trace fine sand; light brown									slightly moist medium stiff
▼			5	6							saturated
		grades dark gray									soft
			10	4							
		End of Exploration at 11.0'. Installed 1.25" diameter slotted PVC pipe to 11.0'.									
			15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3V

BORING LOG

Page: 1 of 1

BORING: B-23

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/30/21 | DATE FINISHED: 6/30/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 8.5' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	SM FILL	SILTY FINE TO COARSE SAND, FILL with fine and coarse gravel; brown		31							slightly moist medium dense
	SM	SILTY FINE SAND brown	5	42							slightly moist medium dense
▼	SP	FINE TO COARSE SAND with layers of silty clay up to 1" thick; brown	10	32							slightly moist medium dense saturated
	CL	SILTY CLAY with trace fine sand; dark gray	15	2		54.2	69				saturated very soft
		End of Exploration at 16.0'. Installed 1.25" diameter slotted PVC pipe to 16.0'.	20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3W

GSH

BORING LOG

Page: 1 of 1

BORING: B-24

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/30/21 | DATE FINISHED: 6/30/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 4.8' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE SANDY CLAY with silt; light brown									slightly moist stiff
				13		26.8	78				
▼			5								saturated
		grades with layers of fine and coarse gravelly fine to coarse sand up to 4" thick		2							soft
		grades silty clay; dark gray									
			10	3							
		End of Exploration at 11.0'. Installed 1.25" diameter slotted PVC pipe to 11.0'.									
			15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3X

BORING LOG

Page: 1 of 1

BORING: B-25

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/30/21 | DATE FINISHED: 6/30/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 4.5' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE TO MEDIUM SANDY CLAY with silt; brown		7							slightly moist medium stiff
▼		grades silty clay; light brown	5	3							saturated soft
		grades with trace fine to medium sand; dark gray	10	5							medium stiff
		grades with layers of fine to medium sand up to 3" thick	15	6							
			20	19							very stiff
		End of Exploration at 21.0'. Installed 1.25" diameter slotted PVC pipe to 21.0'.	25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3Y

GSH

BORING LOG

Page: 1 of 1

BORING: B-26

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/30/21 | DATE FINISHED: 6/30/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 6.6' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE SANDY CLAY with silt; light brown		9							slightly moist medium stiff
			5	6		17.8	101				
▼											saturated
	SM/SC	SILTY FINE TO COARSE SAND with some clay; gray									saturated medium dense
			10	10							
	CL	SILTY CLAY with trace fine sand; drk gray									saturated soft
			15	4							
			20	10							stiff
		End of Exploration at 21.0'. Installed 1.25" diameter slotted PVC pipe to 21.0'.	25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3Z

BORING LOG

Page: 1 of 1

BORING: B-27

CLIENT: Scannell Properties | PROJECT NUMBER: 0622-007-21

PROJECT: Proposed Swaner Property | DATE STARTED: 6/30/21 | DATE FINISHED: 6/30/21

LOCATION: Near 3300 North 2200 West, Salt Lake City, Utah | GSH FIELD REP.: SS

DRILLING METHOD/EQUIPMENT: 3-3/4" ID Hollow-Stem Auger | HAMMER: Automatic | WEIGHT: 140 lbs | DROP: 30"

GROUNDWATER DEPTH: 8.0' (7/9/21) | ELEVATION: ---

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
		Ground Surface	0								
	CL	FINE SANDY CLAY with some silt; light brown		3							slightly moist soft
	SM/SC	SILTY/CLAYEY FINE TO MEDIUM SAND dark gray	5	30							slightly moist dense
▼	CL	SILTY CLAY with trace fine sand; dark gray	10	12		32.1	91				saturated stiff
		End of Exploration at 11.0'. Installed 1.25" diameter slotted PVC pipe to 11.0'.	15								
			20								
			25								

PRELIMINARY

See Subsurface Conditions section in the report for additional information.

FIGURE 3AA

CLIENT: Swaner Properties
PROJECT: Proposed Swaner Property
PROJECT NUMBER: 0622-007-21

KEY TO BORING LOG

WATER LEVEL	USCS	DESCRIPTION	DEPTH (FT.)	BLOW COUNT	SAMPLE SYMBOL	MOISTURE (%)	DRY DENSITY (PCF)	% PASSSING 200	LIQUID LIMIT (%)	PLASTICITY INDEX	REMARKS
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫

COLUMN DESCRIPTIONS

① **Water Level:** Depth to measured groundwater table. See symbol below.

② **USCS:** (Unified Soil Classification System) Description of soils encountered; typical symbols are explained below.

③ **Description:** Description of material encountered; may include color, moisture, grain size, density/consistency,

④ **Depth (ft.):** Depth in feet below the ground surface.

⑤ **Blow Count:** Number of blows to advance sampler 12" beyond first 6", using a 140-lb hammer with 30" drop.

⑥ **Sample Symbol:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.

⑦ **Moisture (%):** Water content of soil sample measured in laboratory; expressed as percentage of dryweight of

⑧ **Dry Density (pcf):** The density of a soil measured in laboratory; expressed in pounds per cubic foot.

⑨ **% Passing 200:** Fines content of soils sample passing a No. 200 sieve; expressed as a percentage.

⑩ **Liquid Limit (%):** Water content at which a soil changes from plastic to liquid behavior.

⑪ **Plasticity Index (%):** Range of water content at which a soil exhibits plastic properties.

⑫ **Remarks:** Comments and observations regarding drilling or sampling made by driller or field personnel. May include other field and laboratory test results using the following abbreviations:

CEMENTATION:

Weakly: Crumbles or breaks with handling or slight finger pressure.

Moderately: Crumbles or breaks with considerable finger pressure.

Strongly: Will not crumble or break with finger pressure.

MODIFIERS:

Trace <5%

Some 5-12%

With > 12%

MOISTURE CONTENT (FIELD TEST):

Dry: Absence of moisture, dusty, dry to the touch.

Moist: Damp but no visible water.

Saturated: Visible water, usually soil below water table.

Descriptions and stratum lines are interpretive; field descriptions may have been modified to reflect lab test results. Descriptions on the logs apply only at the specific boring locations and at the time the borings were advanced; they are not warranted to be representative of subsurface conditions at other locations or times.

PRELIMINARY

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS			USCS SYMBOLS	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS More than 50% of material is larger than No. 200 sieve size.	GRAVELS More than 50% of coarse fraction retained on No. 4 sieve.	CLEAN GRAVELS (little or no fines)	GW	Well-Graded Gravels, Gravel-Sand Mixtures, Little or No Fines
			GP	Poorly-Graded Gravels, Gravel-Sand Mixtures, Little or No Fines
		GRAVELS WITH FINES (appreciable amount of fines)	GM	Silty Gravels, Gravel-Sand-Silt Mixtures
			GC	Clayey Gravels, Gravel-Sand-Clay Mixtures
	SANDS More than 50% of coarse fraction passing through No. 4 sieve.	CLEAN SANDS (little or no fines)	SW	Well-Graded Sands, Gravelly Sands, Little or No Fines
			SP	Poorly-Graded Sands, Gravelly Sands, Little or No Fines
		SANDS WITH FINES (appreciable amount of fines)	SM	Silty Sands, Sand-Silt Mixtures
			SC	Clayey Sands, Sand-Clay Mixtures
FINE-GRAINED SOILS More than 50% of material is smaller than No. 200 sieve size.	SILTS AND CLAYS Liquid Limit less than 50%		ML	Inorganic Silts and Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity
			CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays
			OL	Organic Silts and Organic Silty Clays o f Low Plasticity
	SILTS AND CLAYS Liquid Limit greater than 50%		MH	Inorganic Silts, Micacious or Diatomacious Fine Sand or Silty Soils
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Silts and Organic Clays of Medium to High Plasticity
HIGHLY ORGANIC SOILS			PT	Peat, Humus, Swamp Soils with High Organic Contents

Note: Dual Symbols are used to indicate borderline soil classifications.

STRATIFICATION:

DESCRIPTION	THICKNESS
Seam	up to 1/8"
Layer	1/8" to 12"

Occasional: One or less per 6" of thickness

Numerous; More than one per 6" of thickness

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Bulk/Bag Sample
- Standard Penetration Split Spoon Sampler
- Rock Core
- No Recovery
- 3.25" OD, 2.42" ID D&M Sampler
- 3.0" OD, 2.42" ID D&M Sampler
- California Sampler
- Thin Wall

WATER SYMBOL

Water Level

FIGURE 4

GSH

January 31, 2022
Job No. 0622-007-21

Mr. Adam Frankenberg
Scannell Properties
8801 River Cross Boulevard, Suite 300
Indianapolis, Indiana 46240

Mr. Frankenberg:

Re: Letter
Groundwater Influence from Development
Proposed Swaner Property
Near 3300 North 2200 West
Salt Lake City, Utah

GSH Geotechnical Inc. (GSH) was requested to provide a letter discussing the influence of the proposed development to the existing ground water conditions. GSH completed a geotechnical study[1] for the site dated August 18, 2021. Ground water was encountered at depths as shallow as 4.3 feet below the existing ground surface with an average depth of approximately 7.8 feet. GSH anticipates that excavations for the proposed warehouse structures will not encounter groundwater and will not affect groundwater in the short or long term. Utility excavations will likely encounter groundwater which will affect water elevations in the short term but subsequent to backfilling, long term influence is not likely.

If you have any questions or would like to discuss these items further, please feel free to contact us at (801) 685-9190.

Respectfully submitted,

GSH Geotechnical, Inc.

Alan D. Spilker, P.E.
State of Utah No. 334228
President/Senior Geotechnical Engineer
ADS:ab
Addressee (email)

[1] "Report – Updated, Preliminary Geotechnical Study, Proposed Swaner Property, Near 3300 North 2200 West, Salt Lake City, Utah." GSH Job No. 0622-007-21

GSH Geotechnical, Inc.
473 West 4800 South
Salt Lake City, Utah 84123
Tel: 801.685.9190 Fax: 801.685.2990
www.gshgeo.com

August 17, 2021
Job No. 0622-008-21

Mr. Adam Frankenberg
Scannell Properties
8801 River Cross Boulevard, Suite 300
Indianapolis, Indiana 46240

Mr. Frankenberg:

Re: Summary Report
Site-Specific Seismic Study
Proposed Swaner Property
Building 1
Near 3300 North 2200 West
Salt Lake City, Utah

1. INTRODUCTION

1.1 GENERAL

This report presents the results of our site-specific seismic study performed at the site of the proposed Building 1 of the Swaner Property to be located near 3300 North 2200 West in Salt Lake City, Utah. GSH Geotechnical, Inc (GSH) completed a geotechnical study[1] for the overall site. Additional site-specific studies will be required for other future structures within the development as this study only applies to Building 1. Data from the preliminary geotechnical study along with a geophysical survey was used for this site-specific seismic study.

The shear-wave velocity profile for the upper 350 feet at the site (including $\overline{v}_{s30}$ for the upper 100 feet) was determined utilizing boring data from our preliminary geotechnical study and a geophysical survey consisting of Refraction Microtremor (ReMi) testing.

The ground motion hazard and design ground motion response spectra at the site were developed utilizing a site-specific site response analysis (SRA). The analysis was completed in accordance

[1] "Report, Preliminary Geotechnical Study, Proposed Swaner Property, Near 3300 North 2200 West, Salt Lake City, Utah." GSH Job No. 0622-007-21. Dated August 6, 2021.

GSH Geotechnical, Inc.
473 West 4800 South
Salt Lake City, Utah 84123
Tel: 801.685.9190 Fax: 801.685.2990
www.gshgeo.com

with the procedures presented in ASCE 7-16, Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE 7-16) and Supplement 1 to ASCE 7-16.

1.2 OBJECTIVES AND SCOPE

The objectives and scope of the study were planned in discussions between Mr. Adam Frankenberg of Scannell Properties and Mr. Alan Spilker, P.E. of GSH.

In general, the objectives of this study were to:

1. Further define the subsurface conditions at the site of Building 1, including a shear-wave profile to a depth of 350 feet.

2. Develop site-specific and design ground motion response spectra for the site.

In accomplishing these objectives, our scope has included the following:

1. A review of available subsurface information from the preliminary geotechnical study completed for the site.

2. A field program consisting of the completion of a Refraction Microtremor (ReMi) geophysical exploration to a depth of 350 feet including the development of $\overline{v}_{s30}$ for the upper 100 feet at the site of Building 1.

3. Performance of a site-specific site response analysis (SRA) for Building 1 in accordance with the ASCE 7-16 Section 21.1, Site Response Analysis.

4. Development of site-specific and design ground motion response spectra for the site of Building 1 in accordance with the ASCE 7-16 Section 21.3, Design Response Spectrum.

1.3 AUTHORIZATION

Authorization was provided by returning a signed copy of the Professional Services Agreement No. 21-0563.rev1 dated June 16, 2021.

1.4 PROFESSIONAL STATEMENTS

Supporting data upon which our recommendations are based are presented in subsequent sections of this report. Recommendations presented herein are governed by the physical properties of the soils encountered in the geophysical testing, exploration borings, and projected groundwater conditions. If subsurface conditions other than those described in this report are encountered, GSH must be informed so that our recommendations can be reviewed and amended, if necessary.

Our professional services have been performed, our findings developed, and our recommendations prepared in accordance with generally accepted engineering principles and practices in this area at this time.

2. PROPOSED CONSTRUCTION

Building 1 is to consist of the construction of one warehouse structure with a footprint of 1,085,000 square feet and associated pavements. The structure will be 1-extended level above grade, will include office/warehouse facilities, and be supported upon conventional spread and continuous wall footings. Paved parking areas and drive lanes are planned around the structure.

Based on information provided by the structural engineer, the structure's fundamental period will be approximately 0.4 seconds.

3. SITE CONDITIONS

3.1 SURFACE

The site is currently vacant/undeveloped land. The topography of the site is relatively flat, grading down to the northwest with a total relief of approximately 2 to 3 feet. Site vegetation consists of various sparse weeds and brush/grass throughout.

The overall development is bounded to the north by similar vacant/undeveloped land; to the east by similar vacant/undeveloped land along with single-family residential structure as well as 2200 West Street; to the south by similar vacant/undeveloped land along with a canal and an unpaved dirt road; and to the west by the aforementioned canal followed by similar vacant/undeveloped land along with 3200 West Street.

3.2 SUBSURFACE SOIL AND GROUNDWATER

The following paragraphs provide generalized descriptions of the subsurface profiles and soil conditions encountered within the borings conducted during the preliminary geotechnical study. As previously noted, soil conditions may vary in unexplored locations.

The borings across the entire development were completed to depths ranging from 11 to 46 feet. The soil conditions encountered in each of the borings, to the depths completed, were generally similar across the boring locations.

- Non-engineered fill soils were encountered in Boring B-23, to a depth of 4 feet beneath the existing ground surface. The non-engineered fill soils consisted of sand with silt and gravel content.

- Natural soils were encountered below the non-engineered fill or the ground surface in each boring. The natural soils consisted primarily of clay with varying silt, sand, and gravel content, as well as sand with varying clay and silt content.

The natural clay soils were very soft to stiff, dry to saturated, varied in color (light gray, gray, dark gray, black, light brown, and brown), and moderately over-consolidated. The natural clay soils are anticipated to exhibit moderate strength and compressibility characteristics under the anticipated loading.

The natural sand soils were very loose to very dense, dry to saturated, and varied in color (gray, dark gray, light brown, and brown). The natural sand soils are anticipated to exhibit moderately high strength and moderately low compressibility characteristics under the anticipated load range.

For a more descriptive interpretation of subsurface conditions, please refer to our preliminary geotechnical report completed for the site (GSH Job No. 0622-007-21).

3.3 SHEAR WAVE VELOCITY PROFILE

The site shear-wave velocity profile was completed utilizing geophysical exploration. The testing consisted of Refraction Microtremor (ReMi) testing. Testing is performed at the surface using a series of geophone sensors and a seismic source. A wavefield transformation is performed on the recorded geophone movements. The transformation is then utilized to create a shear-wave dispersion curve to model the subsurface shear-wave velocity profile.

The location of the ReMi line on the site is presented on Figure 1, Site Plan. The borings completed in conjunction with the preliminary geotechnical study for the overall development are also shown on Figure 1.

The site classification for ASCE 7-16 was Site Class F in the preliminary geotechnical report due to potentially liquefiable soils at the site. As a follow up to the preliminary geotechnical report, the ReMi testing results were analyzed to a depth of 350 feet with a resulting $\overline{v}_{s30}$ value of 756 ft/s. This characterizes the site as a Site Class D, Stiff Soil Profile as defined in Chapter 20 of ASCE 7-16.

The shear-wave velocity results are provided on attached Figure 2, Shear-Wave Velocity Profile.

3.4 GEOLOGIC SETTING

The site is located in the Salt Lake Valley, which is in the Basin and Range Physiographic Province. The Salt Lake Valley is near (west of) the transition between the Basin and Range Physiographic Province to the west and the Middle Rocky Mountain Physiographic Province to the east. The Basin and Range Province is characterized by generally north-trending valleys and mountain ranges that have formed by displacement along normal faults. The Wasatch fault forms the boundary between the two provinces and has been active for approximately 10 million years.

The Middle Rocky Mountains were formed during a period of regional compression that occurred in Cretaceous time, about 75 to 70 million years ago (Hunt, 1967). The surficial geology of the area is characterized by materials deposited within the past 30,000 years by late Pleistocene Lake Bonneville (Currey and Oviatt, 1985), and subsequent rises in late Holocene Great Salt Lake (Murchison, 1989). As the ancient lake(s) receded, streams began to regrade through shoreline deltas formed at the mouths of major Wasatch Range canyons and the eroded material was deposited in the basin as a series of recessional deltas, alluvial fans and shoreline sequences. Toward the center of the valley, where the site is located, deep-water sediments of clay, silt, and fine sand predominate.

The vicinity of the site is mapped by McKean (2014) as consisting of "Young lacustrine and deltaic deposits" (**Qldy**), which are comprised of "Well to moderately sorted, light olive-gray to moderate yellowish-brown, silty sand and clay."

3.5 FAULTING

There are a number of mapped faults near the site. The faults are primarily normal mechanism. Some of the other mapped faults included are the Taylorsville section of the West Valley Fault Zone (mapped 1.64 miles south-southeast of the site), the Salt Lake City section of the Wasatch Fault Zone (mapped 2.45 miles east-southeast of the site), the Weber section of the Wasatch Fault Zone (mapped 3.48 miles east-northeast of the site), and the Antelope Island section of the East Great Salt Lake Fault Zone (mapped 1.65 miles west-northwest of the site).

4. SITE RESPONSE ANALYIS

A soil model was developed from the boring, laboratory, and ReMi data from this study and the preliminary geotechnical study for the site.

A series of earthquake time histories were selected and scaled to match the MCE_R response spectrum at the base of the soil column. Histories were selected from events with similar magnitudes, distances and spectral shape in the period ranges of significance for the proposed structure (approximately 0.4 seconds). These ground motion time histories were input at the base of the soil column model as outcrop motions, propagated through the soil column model, and calculated as surface ground motions. The results of the SRA analysis are presented in the table in the following section.

5. DESIGN RESPONSE SPECTRUM

The response spectrum produced from the site-specific seismic analysis was compared with the minimum code spectrum values per ASCE 7-16 Section 21.3, including updates presented in Supplement 1 to ASCE 7-16. This process includes taking the 2014 mapped values from the USGS and utilizing F_a from Table 11.4-1 and 2.5 as F_v to obtain the modified accelerations, then reducing them by 20 percent to obtain the code minimum spectral accelerations.

The site-specific response spectrum is lower than the minimum code spectrum at select periods; therefore, the minimum code spectrum governs the design spectrum for the site at these periods. These values are presented in the table below:

Period (sec)	Code 80% Minimum Spectral Acceleration (g)	Site-Specific Spectral Acceleration (g)	Code Modified* Site-Specific Spectral Acceleration (g)	Design Spectral Acceleration (2/3 of Code Modified Site-Specific Acceleration) (g)
0.05	0.710	0.441	0.710	0.473
0.1	0.918	0.445	0.918	0.612
0.2	1.254	0.480	1.254	0.836
0.3	1.254	0.618	1.254	0.836
0.4	1.254	0.723	1.254	0.836
0.5	1.254	0.838	1.254	0.836
0.6	1.254	0.978	1.254	0.836
0.8	1.254	1.080	1.254	0.836
1.0	1.134	1.098	1.134	0.756
1.2	0.945	1.296	1.296	0.864
1.4	0.810	1.133	1.133	0.755
1.6	0.709	0.934	0.934	0.623
1.8	0.630	0.763	0.763	0.508
2.0	0.567	0.629	0.629	0.419
3.0	0.378	0.301	0.378	0.252
4.0	0.284	0.164	0.284	0.189
5.0	0.227	0.109	0.227	0.151

*The greater of the site-specific and the code minimum spectral acceleration.

6. DESIGN ACCERATION PARAMETERS

The site-specific response spectrum was analyzed in accordance with the procedure outlined in ASCE 7-16 Section 21.4 to produce the design acceleration parameters presented in the table below:

Site-Specific Parameter	Spectral Acceleration Value (g)
S_{DS}	0.836
S_{D1}	1.057

7. CLOSURE

If you have any questions or would like to discuss these items further, please feel free to contact us at (801) 685-9190.

Respectfully submitted,

GSH Geotechnical, Inc.

LICENSED PROFESSIONAL ENGINEER
No. 343650
MICHAEL S. HUBER
STATE OF UTAH

Michael S. Huber, P.E.
State of Utah No. 343650
Vice President/Senior Geotechnical Engineer

Reviewed by:

Alan D. Spilker, P.E.
State of Utah No. 334228
President/Senior Geotechnical Engineer

MSH/ADS:jlh

Encl.
Figure 1, Site Plan
Figure 2, Shear-Wave Velocity Profile

Addressee (email)

Geologic References

Currey, D.R., and Oviatt, C.G., 1985, Durations, average rates, and probable causes of Lake Bonneville expansion, still-stands, and contractions during the last deep-lake cycle, 32,000 to 10,000 years ago, in Kay, P.A., and Diaz, H.F., (eds.), Problems of and prospects for predicting Great Salt Lake levels - Processing of a NOAA Conference, March 26-28, 1985: Salt Lake City, Utah.

DuRoss, C.B., and Hylland, M.D., 2015, Synchronous ruptures along a major graben-forming fault system—Wasatch and West Valley fault zones, Utah: Bulletin of the Seismological Society of America, v. 105, no. 1, p. 14–37.

Hunt, C.B., 1967, Physiography of the United States: San Francisco, W.H. Freeman, 480 p.

McKean, A.P., 2014, Interim geologic map of the Salt Lake City North quadrangle, Salt Lake and Davis Counties, Utah: unpublished Utah Geological Survey contract deliverable map prepared for U.S. Geological Survey, USGS STATEMAP award no. G135AC00169, 42 p., 1 plate, scale 1:24,000.

Murchison, S.B., 1989, Fluctuation history of the Great Salt Lake, Utah, during the last 13,000 years: University of Utah Department of Geography Ph.D. Dissertation, 129 p.

ROGER KNIGHT CONSTRUCTION
JOB NO. 0622-008-21

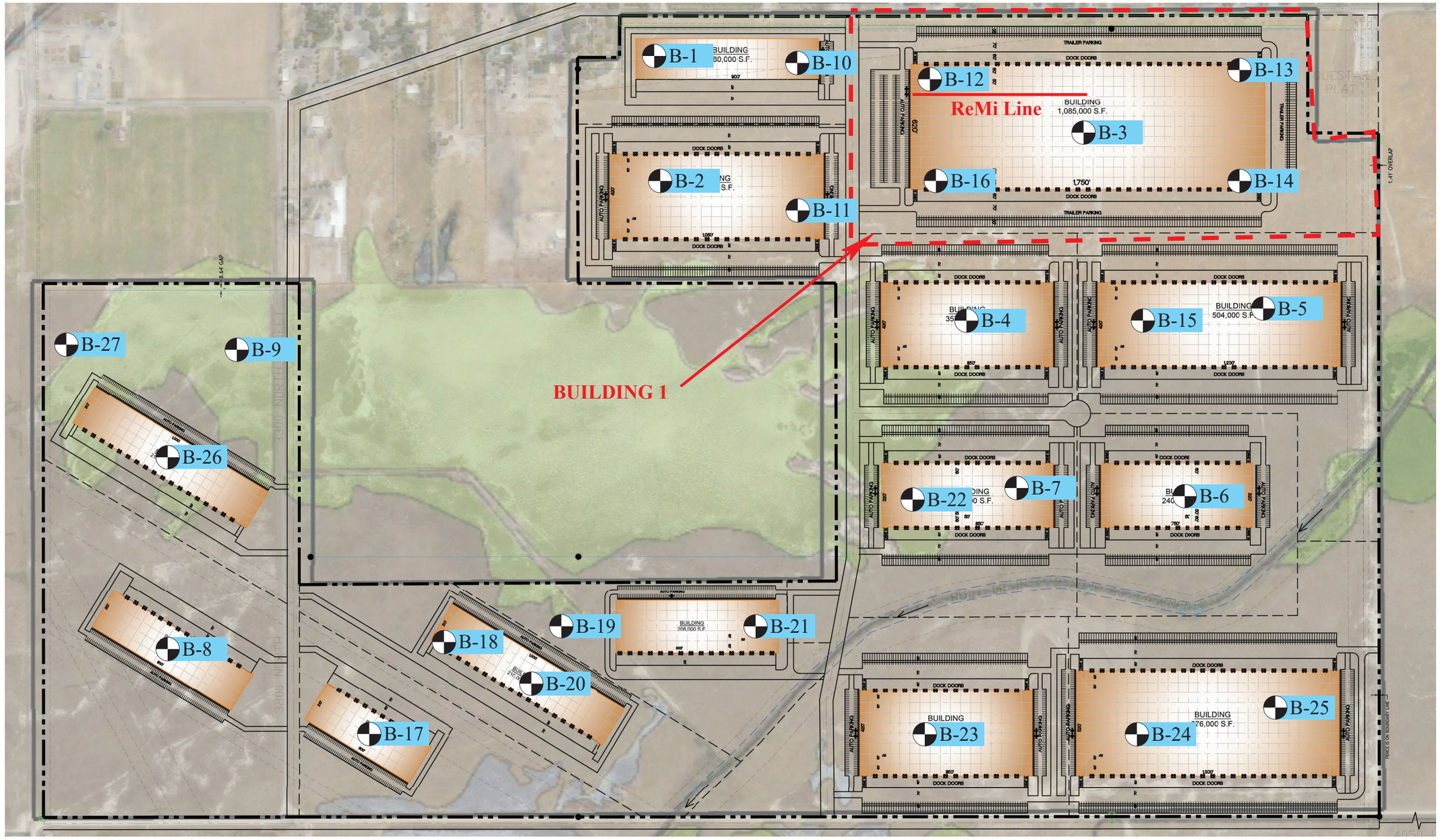


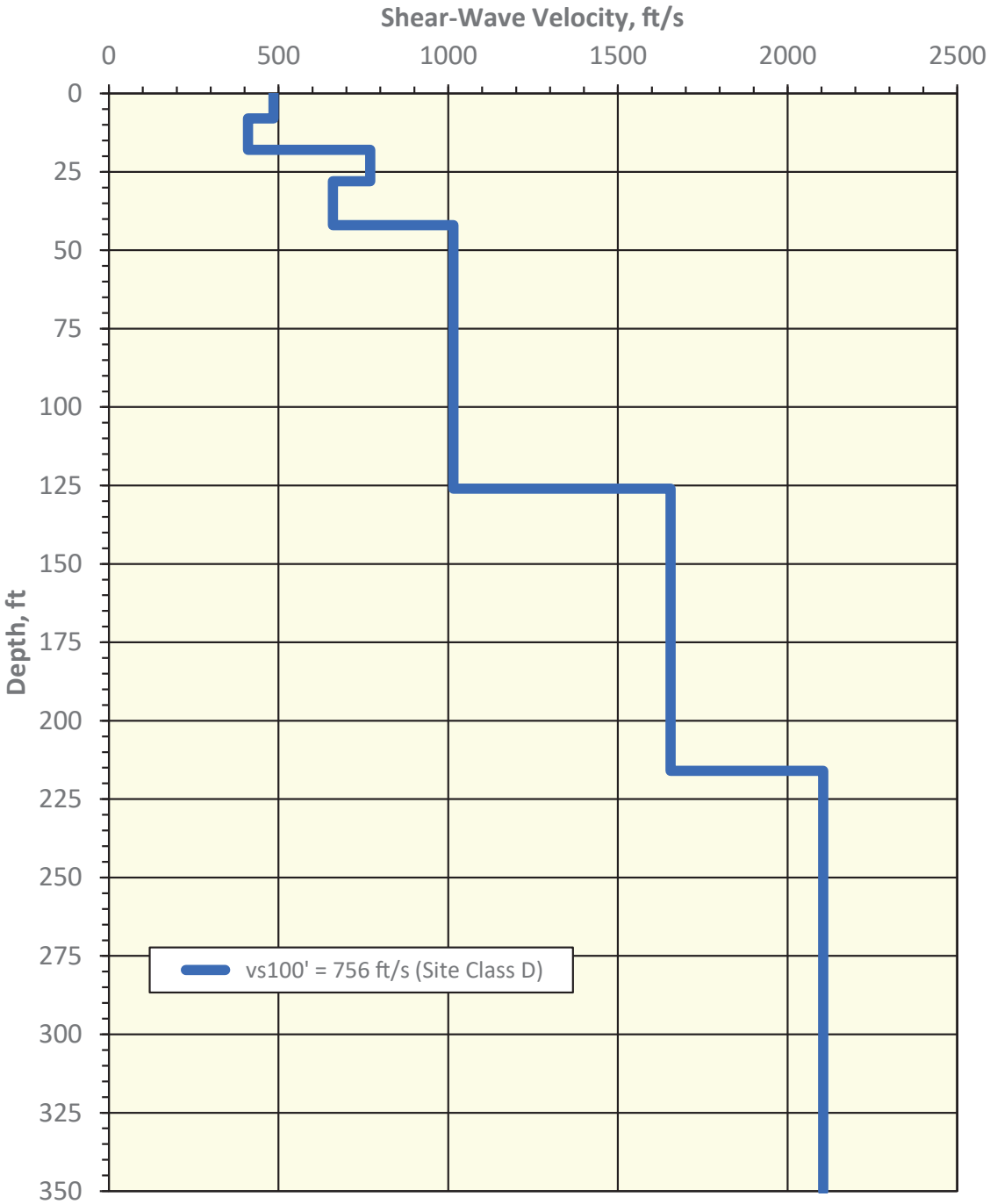
FIGURE 1
SITE PLAN

REFERENCE:
ADAPTED FROM DRAWING ENTITLED
"WAREHOUSE DISRIBUTION FACILITY"
BY SCANNELL PROPERTIES, NOT DATED

APPROXIMATE SCALE IN FEET
250 0 250 500

GSH

SHEAR -WAVE VELOCITY PROFILE



PROJECT NO.: 0622-008-21	GSH	**FIGURE NO.:** 2

ANDERSON WAHLEN & ASSOCIATES

February 3rd, 2022

Jason Draper
Development Review Manager - Floodplain Administrator
Salt Lake City Department of Public Utilities

Attention: Jason Draper

Re: Sewer Lift Station Preliminary Analysis - Swaner Subdivision – Salt Lake City, Utah

Jason,

As requested, the following information is being provided to assist Salt Lake City Public Utilities and Department of Airports in making a decision as to the location for the new sewer lift station that will serve the proposed Swaner Subdivision Development.

The Swaner Subdivision Project includes appx 430 acres of property on the west side of 2200 West from approximately 2600 North to 3500 North (Parcel No. 08-09-100-003). The Preliminary Plat and Master Plans are currently in for review and approval with Salt Lake City. Please refer to those plans for more information.

A total of three locations have been considered for the location of the proposed sewer lift station.

- **Location Option 1** (Recommended/Preferred Location) – West Side of 2200 West at approximately 2400 North on SLC Airport Property (Parcel No. 08-09-100-003).
- **Location Option 2** – West side of 2200 West on the Swaner Property (Portion of Proposed Lot 3).
- **Location Option 3** – East Side of 2200 West at approximately 2400 North on Church of Jesus Christ of Latter Day Saints Property. (Parcel No. 08-16-276-002).

Location Option 1 Considerations

- This proposed site is currently owned by Salt Lake City Department of Airports. This appears to be an area of the Airport Property that is not master planned to be improved due to its proximity to 2200 West Street and the areas existing businesses and residential properties.
- Approximately 120 feet of sewer force main would be constructed to connect to existing gravity sewer main at appx. 2400 North. This site is near the location the existing gravity sewer line is in 2200 West.
- If sewer lift station was constructed here, a force main pipe will be required to connect to the existing gravity sewer main in 2200 West at appx 2400 North. Any future development south of the Swaner site and north of 2400 North would be able to connect into the gravity sewer main pipe that will be constructed between the Swaner Site and this proposed location.
- This lift station site would not require a separate parcel/lot because it is property owned by SLC.

Location Option 2 Considerations

- Proposed Lot 3 of the Swaner Subdivision is part of the project site and therefore approval by a separate private landowner is not required.
- Approximately 2000 feet of sewer force main would be constructed to connect to existing gravity sewer main at appx. 2400 North.
- If sewer lift station was constructed here, a force main pipe will be required to connect to the existing gravity sewer main in 2200 West at appx 2400 North. This would mean that any future development south of the Swaner site and north of 2400 North would need to install a separate gravity sewer main pipe back to the north to the lift station to provide a sewer connection to their property.
- This lift station site would require a separate parcel/lot because it is property that is currently privately owned.

Location Option 3 Considerations

- This location and property is owned by the Church of Jesus Christ of Latter Day Saints. Approval to construct the lift station on this site would need to granted and a purchase made for the required lift station parcel. The Developer has contacted the Church and they do not have any interest in working with the Developer on a plan to allow the lift station to be constructed on this property.
- Other site considerations for this site are the same as Location Option 2. The only difference is the side of the street it would be located on.

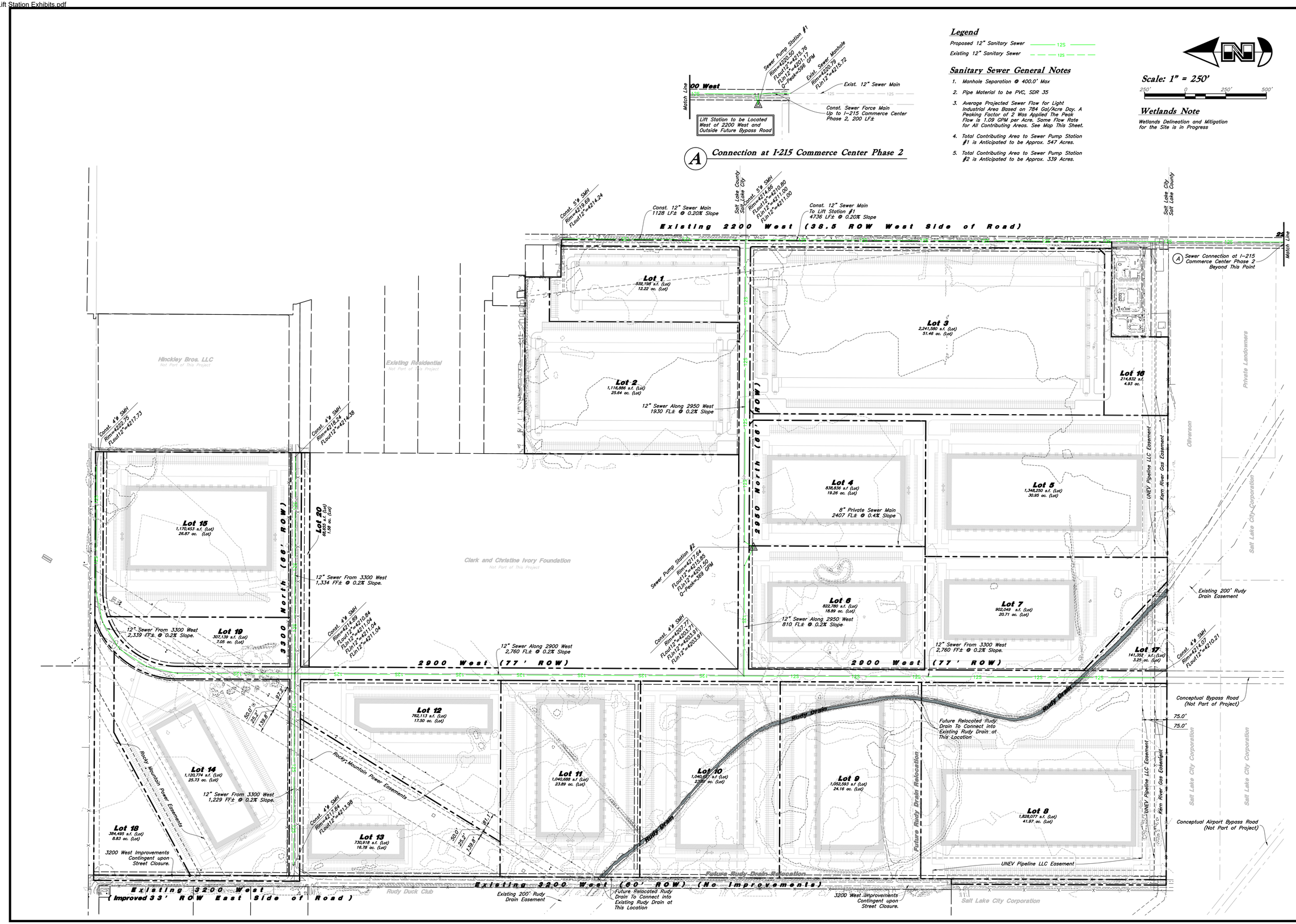
Reference Drawings to more clearly understand the information presented in this analysis letter include:

- Preliminary Plat
- Sewer Master Plan (See Sewer General Notes on this sheet for more information regarding estimated flows and area served
- Sewer Lift Station Exhibits (Sheets Ex-4.1-4.3)

If we can be of further assistance, I may be contacted at colbya@awaeng.com or (435) 757-2004, please do not hesitate to email or call.

Regards

Colby Anderson, P.E.
Senior Project Manager



REV	DATE	DESCRIPTION

Designed by: CA
Drafted by: NE
Client Name:
Scannell Swaner
21-190 Sewer Exhibit Opt 1

ANDERSON WAHLEN & ASSOCIATES
2010 North Redwood Road, Salt Lake City, Utah 84116
(801) 521-8529 – AWEngineering.net

Sewer Exhibit - Option 1

Swaner Commercial Business Park
2950 North 2200 West
Salt Lake City, UT

1 Feb, 2022

SHEET NO.
EX-4.1

Legend

- Proposed 12" Sanitary Sewer — 12S
- Proposed 8" Sewer Force Main — 8S
- Existing 12" Sanitary Sewer — 12S

Sanitary Sewer General Notes

1. Manhole Separation @ 400.0' Max
2. Pipe Material to be PVC, SDR 35
3. Average Projected Sewer Flow for Light Industrial Area Based on 784 Gal/Acre Day. A Peaking Factor of 2 Was Applied The Peak Flow is 1.09 GPM per Acre. Same Flow Rate for All Contributing Areas. See Map This Sheet.
4. Total Contributing Area to Sewer Pump Station #1 is Anticipated to be Approx. 547 Acres.
5. Total Contributing Area to Sewer Pump Station #2 is Anticipated to be Approx. 339 Acres.

Scale: 1" = 250'

250' 0 250' 500'

Wetlands Note

Wetlands Delineation and Mitigation for the Site is in Progress

A Connection at I-215 Commerce Center Phase 2

Existing 2200 West (38.5 ROW West Side of Road)

Const. 5'ø SMH Rim=4219.69 FLout12"=4214.24
Const. 12" Sewer Main 1128 LF± @ 0.20% Slope
Salt Lake County / Salt Lake City
Const. 5'ø SMH Rim=4220.18 FLout12"=4210.80 FLin12"=4211.00 FLin12"=4211.00
Const. 12" Sewer Main To Lift Station #1 4736 LF± @ 0.20% Slope
Sewer Pump Station #1 Rim=4221.16 FLout8"=4215.72 FLin12"=4205.34 FLin12"=4205.34
Salt Lake City / Salt Lake County
Const. 8" Sewer Force Main Up to I-215 Commerce Center Phase 2, 1923 LF±
Const. 12" Sewer Gravity Main Serving Properties South of Project Site, 1378 LF± (By Others)
A Sewer Connection at I-215 Commerce Center Phase 2 Beyond This Point
Match Line

Lot 1 — 532,795 s.f. (Lot) — 12.22 ac. (Lot)
Lot 2 — 1,116,886 s.f. (Lot) — 25.64 ac. (Lot)
12" Sewer Along 2950 West 1994 FL± @ 0.2% Slope
Lot 3 — 2,241,580 s.f. (Lot) — 51.46 ac. (Lot)
Lot 16 — 214,832 s.f. — 4.93 ac.

Hinckley Bros. LLC — Not Part of This Project
Existing Residential — Not Part of This Project

Const. 4'ø SMH Rim=4218.26 FLout12"=4217.73
Const. 4'ø SMH Rim=4218.59 FLout12"=4214.38

2950 North (66' ROW)

Lot 15 — 1,170,453 s.f. (Lot) — 26.87 ac. (Lot)
Lot 20 — 84,655 s.f. (Lot) — 1.94 ac. (Lot)
Lot 4 — 838,836 s.f. (Lot) — 19.26 ac. (Lot)
8" Private Sewer Main 2407 FL± @ 0.4% Slope
Lot 5 — 1,346,250 s.f. (Lot) — 30.95 ac. (Lot)
Lot 6 — 822,780 s.f. (Lot) — 18.89 ac. (Lot)
Lot 7 — 902,049 s.f. (Lot) — 20.71 ac. (Lot)
12" Sewer From 3300 West 2,760 FF± @ 0.2% Slope.
12" Sewer Along 2950 West 810 FL± @ 0.2% Slope

Clark and Christine Ivory Foundation — Not Part of This Project

12" Sewer From 3300 West 1,334 FF± @ 0.2% Slope.
Sewer Pump Station #2 Rim=4220.41 FLout12"=4215.66 FLin12"=4201.50 0-Peak=369 GPM
Const. 4'ø SMH Rim=4218.35 FLout12"=4210.84 FLin12"=4211.04 FLin12"=4211.04 FLin12"=4211.04
Const. 4'ø SMH Rim=4217.16 FLout12"=4203.71 FLin12"=4203.91 FLin12"=4203.91

3300 North (66' ROW)

Lot 19 — 307,139 s.f. (Lot) — 7.05 ac. (Lot)
12" Sewer From 3300 West 2,339 FF± @ 0.2% Slope.
12" Sewer Along 2900 West 2,760 FL± @ 0.2% Slope

2900 West (77' ROW)

Existing 200' Rudy Drain Easement
Const. 4'ø SMH Rim=4214.07 FLout12"=4210.21
Lot 17 — 141,359 s.f. (Lot) — 3.25 ac. (Lot)
Conceptual Bypass Road (Not Part of Project)
75.0'
75.0'

Lot 12 — 762,113 s.f. (Lot) — 17.50 ac. (Lot)
Lot 14 — 1,120,774 s.f. (Lot) — 25.73 ac. (Lot)
12" Sewer From 3300 West 1,229 FF± @ 0.2% Slope
50.0' 25.2' 139.8' 91.1'
Rocky Mountain Power Easements
Lot 11 — 1,040,688 s.f. (Lot) — 23.89 ac. (Lot)
Lot 10 — 1,040,688 s.f. (Lot) — 23.89 ac. (Lot)
Lot 9 — 1,052,593 s.f. (Lot) — 24.16 ac. (Lot)
Rudy Drain
Future Relocated Rudy Drain To Connect into Existing Rudy Drain at This Location
Future Rudy Drain Relocation
Lot 8 — 1,828,077 s.f. (Lot) — 41.97 ac. (Lot)
UNEV Pipeline LLC Easement
Kern River Gas Easement
Salt Lake City Corporation
Conceptual Airport Bypass Road (Not Part of Project)

Lot 18 — 384,485 s.f. (Lot) — 8.83 ac. (Lot)
3200 West Improvements Contingent upon Street Closure.
Const. 4'ø SMH Rim=4218.40 FLout12"=4213.98
Lot 13 — 730,918 s.f. (Lot) — 16.78 ac. (Lot)
50.0' 25.2' 139.8' 91.1'

Existing 3200 West (Improved 33' ROW East Side of Road)
Rudy Duck Club
Existing 200' Rudy Drain Easement
Existing 3200 West (60' ROW) (No Improvements)
Future Relocated Rudy Drain To Connect into Existing Rudy Drain at This Location
3200 West Improvements Contingent upon Street Closure.
UNEV Pipeline LLC Easement
Salt Lake City Corporation

REV	DATE	DESCRIPTION

Designed by: CA
Drafted by: NE
Client Name: Scannell Swaner
21-190 Sewer Exhibit Opt 2

ANDERSON WAHLEN & ASSOCIATES
2010 North Redwood Road, Salt Lake City, Utah 84116
(801) 521-8529 – AWengineering.net

Sewer Exhibit - Option 2

Swaner Commercial Business Park

2950 North 2200 West
Salt Lake City, UT

1 Feb, 2022

SHEET NO.
EX-4.2

Narrative: Lift Station Location Option 1

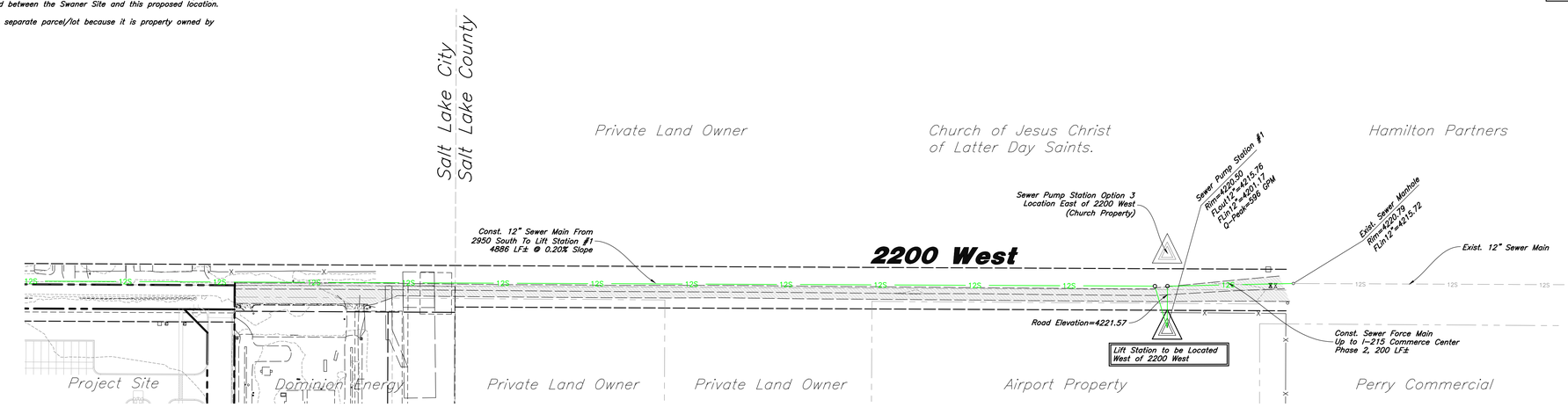
- This proposed site is currently owned by Salt Lake City Department of Airports. This appears to be an area of the Airport Property that is not master planned to be improved due to its proximity to 2200 West Street and the areas existing businesses and residential properties.
- Approximately 120 feet of sewer force main would be constructed to connect to existing gravity sewer main at appx. 2400 North. This site is near the location the existing gravity sewer line is in 2200 West.
- If sewer lift station was constructed here, a force main pipe will be required to connect to the existing gravity sewer main in 2200 West at appx 2400 North. Any future development south of the Swaner site and north of 2400 North would be able to connect into the gravity sewer main pipe that will be constructed between the Swaner Site and this proposed location.
- This lift station site would not require a separate parcel/lot because it is property owned by SLC.

Narrative: Lift Station Location Option 3

- This location and property is owned by the Church of Jesus Christ of Latter Day Saints. Approval to construct the lift station on this site would need to granted and a purchase made for the required lift station parcel. The Developer has contacted the Church and they do not have any interest in working with the Developer on a plan to allow the lift station to be constructed on this property.
- Other site considerations for this site are the same as Location Option 2. The only difference is the side of the street it would be located on.

Scale: 1" = 100'

100' 0 100' 200'

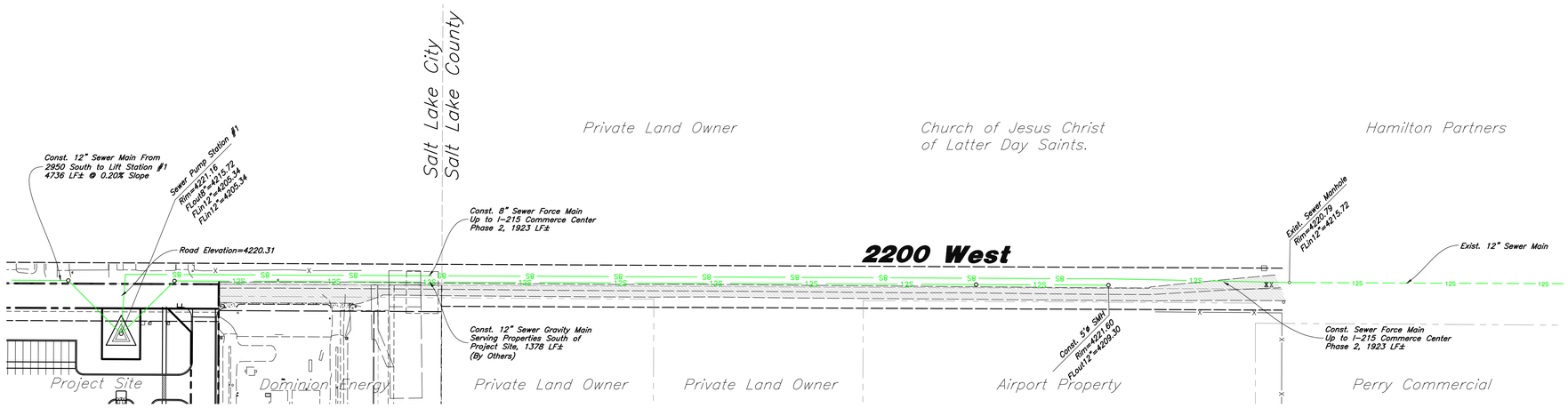


Lift Station Location - Option 1 (Airport Property)

(Per Sheet EX-4.1)

Narrative: Lift Station Location Option 2

- Proposed Lot 3 of the Swaner Subdivision is part of the project site and therefore approval by a separate private landowner is not required.
- Approximately 2000 feet of sewer force main would be constructed to connect to existing gravity sewer main at appx. 2400 North.
- If sewer lift station was constructed here, a force main pipe will be required to connect to the existing gravity sewer main in 2200 West at appx 2400 North. This would mean that any future development south of the Swaner site and north of 2400 North would need to install a separate gravity sewer main pipe back to the north to the lift station to provide a sewer connection to their property.
- This lift station site would require a separate parcel/lot because it is property that is currently privately owned.



Lift Station Location - Option 2 (On Site)

(Per Sheet EX-4.2)

REV	DATE	DESCRIPTION

Designed by: CA
Drafted by: NE
Client Name: Scannell Swaner
21-190 Sewer Exhibit Opt 1

ANDERSON WAHLEN & ASSOCIATES
2010 North Redwood Road, Salt Lake City, Utah 84116
(801) 521-8529 – AWEngineering.net

Sewer Exhibit - Lift Station Options

Swaner Commercial Business Park
2950 North 2200 West
Salt Lake City, UT

1 Feb, 2022

SHEET NO.
EX-4.1