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February 28, 2025

Mr. Robert Wight, P.E.
Region One Director
Utah Department of Transportation
166 West Southwell Street
Ogden UT 84404

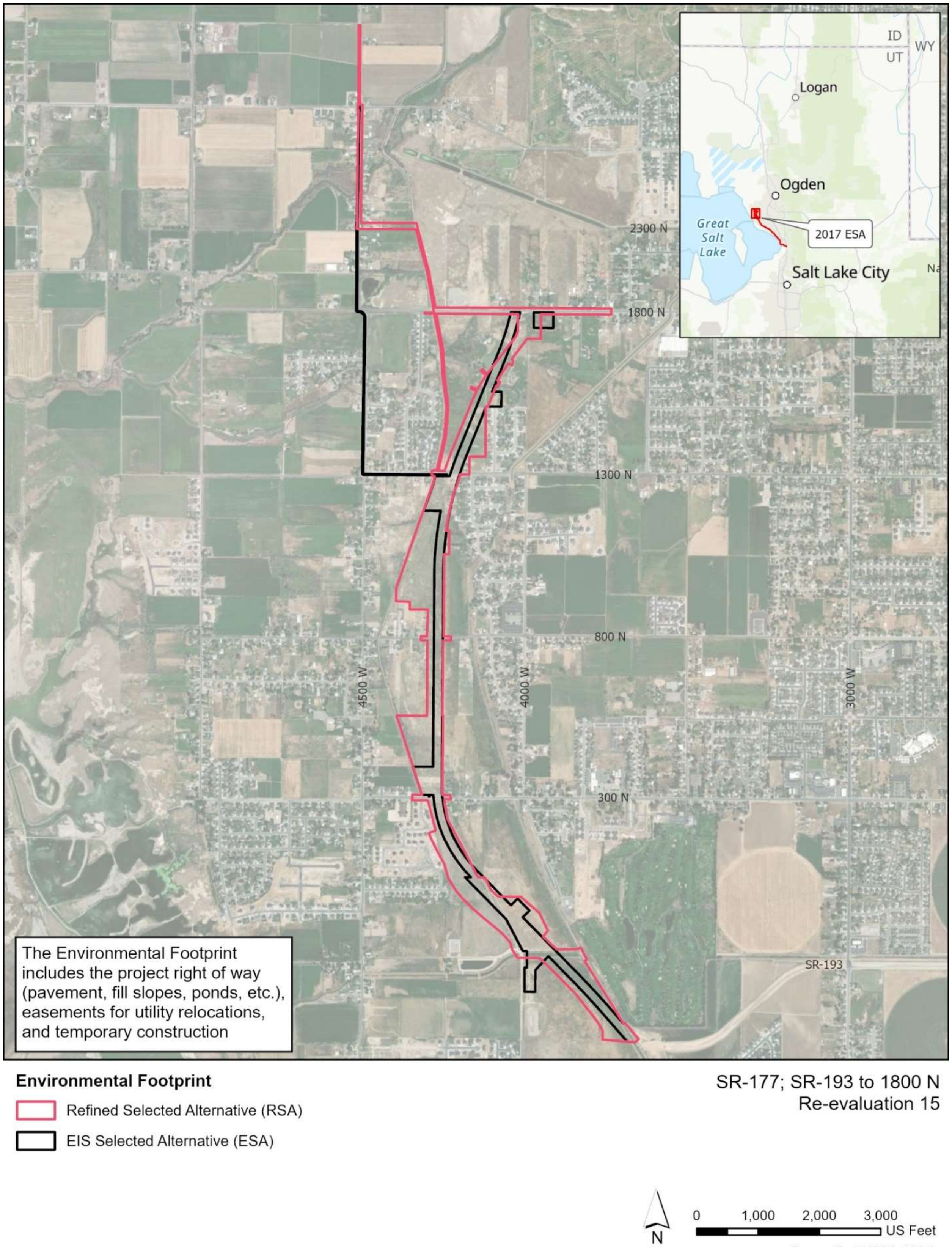
SUBJECT: UDOT Project Number S-R199 (381)
SR-177; SR-193 to 1800 N. (PIN 20927)
*Environmental Impact Statement Re-evaluation 15*

Dear Mr. Wight:

A Final Environmental Impact Statement (EIS) and Section 4(f) Evaluation for the West Davis Corridor (WDC) was completed in June 2017 and approved through the issuance of a Record of Decision (ROD) on September 29, 2017, from the Federal Highway Administration (FHWA) (FHWA 2017). This re-evaluation is evaluating the design refinements proposed to address the change of conditions in the project area between State Route 193 (SR-193) and 1800 North in Davis County, Utah since approval of the EIS Selected Alternative (ESA) in the 2017 ROD. The design refinements are identified as the Refined Selected Alternative (RSA) (see **Figure 1**, Site Map). Specific design changes are identified in the Background of and Need for the Re-evaluation section of this memorandum.

Based on this memorandum the Utah Department of Transportation (UDOT) has concluded that a supplemental EIS is not required for the proposed changes in project design. The regulations in 23 Code of Federal Regulations (CFR) Section 771.130(a) provide that a supplemental EIS is required when "(1) changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS; or (2) new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS."

*Figure 1 Site Map*



This memorandum summarizes the proposed refinements to the ESA, discusses changes in the affected environment, and considers whether any of the changes warrant the need for a supplemental EIS. The appendices to this memorandum include the technical documentation and clearance memoranda.

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by UDOT pursuant to 23 United States Code (USC) Section 327 and a Memorandum of Understanding (MOU) dated May 26, 2022, and executed by FHWA and UDOT. The WDC Project was excluded from the assignment MOU, and FHWA maintained National Environmental Policy Act (NEPA) responsibility of the environmental review process until its issuance of a ROD. Under the assignment MOU, UDOT is responsible for conducting any additional environmental reviews (including re-evaluations) that are required for the WDC Project following issuance of the ROD in 2017.

Therefore, this re-evaluation is being processed in accordance with the assignment MOU, and UDOT is the agency responsible for approving the re-evaluation.

## BACKGROUND OF AND NEED FOR THE RE-EVALUATION

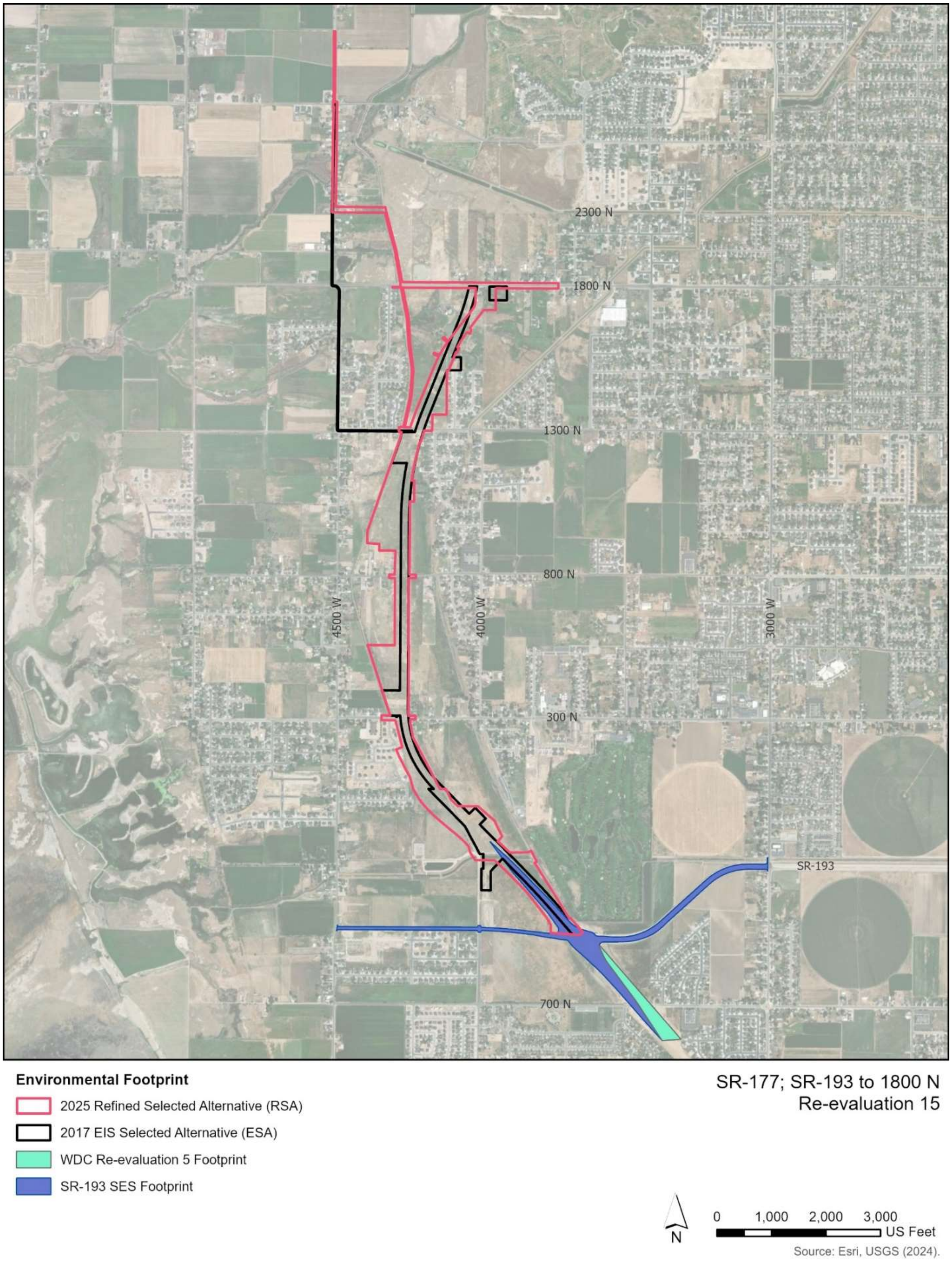
The EIS/Section 4(f) Evaluation and ROD evaluated the environmental impacts of improving regional mobility in western Davis and Weber Counties. Since completion of the WDC ROD, UDOT has conducted further environmental studies and more-detailed survey and engineering work to update the ESA. These updates are described below.

### *Additional Lanes*

During the EIS process, UDOT's traffic modeling determined the need for a four-lane freeway between Interstate 15 (I-15) and Antelope Drive and the need for a two-lane freeway between Antelope Drive and 1800 North. At that time, the WDC traffic modeling design year was 2040, consistent with Wasatch Front Regional Council's (WFRC) 2015 to 2040 Regional Transportation Plan (RTP). The socioeconomic data and planned projects in the 2015 RTP were used for that modeling as they were the best information available at the time. The ESA included a two-lane, limited-access freeway between Antelope Drive and 1800 North (FHWA 2017).

In 2020, UDOT completed a State Environmental Study (SES) (UDOT 2020a) for the extension of SR-193 from 3000 West in Syracuse to 4500 West in West Point, crossing the WDC alignment as shown in **Figure 2**. The SES proposed a diamond interchange connection of SR-193 with WDC. Also in 2020, UDOT completed Environmental Re-evaluation 5 of the WDC EIS which, based on WFRC's 2019 to 2050 RTP, identified a need for a four-lane freeway between Antelope Drive and SR-193 (UDOT 2020b).

*Figure 2 Environmental Footprint Locations*



In 2023, WFRC adopted the 2023 to 2050 RTP (WFRC 2023) with the most current planned projects and socioeconomic data. Traffic modeling using WFRC's latest RTP concluded that the WDC would need to be a four-lane freeway from SR-193 to 1800 North to meet projected transportation demand at a level of service D or better through 2050. The RSA design reflects this change.

**Figure 2** identifies the environmental footprints for the 2017 EIS, Re-evaluation 5, SR-193 SES, and the 2024 RSA. The environmental footprint includes the project right-of-way (including travel lanes, fill slopes, ponds, etc), easements for utility relocations, and temporary construction easements.

### *Other Design Refinements*

In addition to the change from a two-lane freeway to a four-lane freeway between SR-193 and 1800 North, other design refinements have been made to the ESA based on more detailed and current information.

- The alignment curvature between SR-193 and 300 North has been updated to meet UDOT's sight distance standards.
- Detention ponds identified in the ESA have been shifted and resized based on the latest survey and drainage information.
- UDOT has coordinated closely with utility companies to identify in greater detail the locations of major utility relocations.
- UDOT has also worked with West Point City to shift the orientation of the 1800 North Park-n-Ride Lot to be more consistent with future development.
- The Emigrant Trail alignment north of 1300 N has been revised to follow along the east side of the Hooper Canal up to about 2100 N, then runs west to 4500 West, and then continues north along either the west or east side of 4500 West within the street Right of Way (ROW).

The updated design as described above for the segment of WDC from SR-193 to 1800 North is defined as the RSA and is the subject of this re-evaluation. This re-evaluation presents the results of the impacts analyses undertaken for the RSA.

## REFINED SELECTED ALTERNATIVE (RSA) AND COMPARISON WITH THE 2017 SELECTED ALTERNATIVE (ESA)

As introduced at the beginning of this re-evaluation, the RSA represents design modifications to the ESA to meet the needs for the action through the year 2050.

**Table 1** summarizes the changes between the ESA and the RSA.

**TABLE 1**

Summary of Design Changes between the 2017 EIS (ESA) and 2024 Revised Selected Alternative (RSA)

| EIS Selected Alternative (ESA) (Alternative B1 with Wetland Avoidance Option) | Refined Selected Alternative (RSA) (2024 Re-evaluation) |
|---|---|
| • Traffic modeling for 2040 in the EIS identified the need for the WDC to be a two-lane freeway with a 146-foot-wide typical section between SR 193 and 1800 North. | • Updated 2050 traffic modeling showed the need for a four-lane freeway with a 250-foot-wide typical section between SR- 193 and 1800 North. The 104-foot additional width has been added to the west side of the 146-foot-wide two-lane section. |
| • Bridges to accommodate two lanes over 300 North, 800 North, and 1300 North | • Additional parallel bridges over 300 North, 800 North, and 1300 North are needed to accommodate the two additional lanes on WDC. |
| • 2,500-foot radius curve south of 300 N provided 601 feet of stopping sight distance | • 3,710-foot radius curve south of 300 North to provide 732 feet of stopping sight distance, meeting UDOT's current standard (730 feet). |
| • Preliminary detention pond locations were located based on limited survey and drainage information. | • Final detention pond locations are located based on detailed survey and drainage information. |
| • A preliminary footprint was defined for relocation of utilities between SR-193 and 300 North based on limited information. | • Final locations of utility relocations have been determined and an appropriate footprint established. |
| • Park-n-Ride Lot located at 1800 North oriented in east-west direction | • Park-n-Ride Lot located at 1800 North oriented in north-south direction |
| • Emigrant Trail runs west on 1300 North to 4500 West and continues north along the west side of 4500 West to the Weber County line. | • Emigrant Trail follows along the east side of the Hooper Canal up to about 2050 N, then runs west to 4500 West, and then continues north along either the west or east side of 4500 West to the Weber County line. |

# RE-EVALUATION ANALYSIS

Following is a summary of the main components of the EIS and any changes associated with each component as a result of the changes included in the RSA and the re-evaluation of previously known and newly identified environmental resources in the project area.

### *Purpose and Need*

As stated in the EIS, the purpose of the WDC Project is to improve regional mobility and enhance peak-period mobility in western Davis and Weber Counties. The proposed revisions included with the RSA are consistent with the purpose and need as stated in the 2017 Final EIS.

### *Independent Utility*

No additional transportation improvements are necessary for the proposed project to function as intended. The project would not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

### *Alternatives*

Changes with the RSA (see **Table 1**) would apply to any of the WDC alternatives evaluated in the Final EIS and would not change the basis for choosing Alternative B1 with the Wetland Avoidance Option as the ESA in the 2017 ROD.

# ENVIRONMENTAL CONSEQUENCES ANALYSIS

UDOT has evaluated the expected impacts on the natural and built environment from the RSA. It was determined that the impacts of these changes are not individually or cumulatively significant or significantly different from those described in the 2017 Final EIS and ROD for the ESA.

As part of the re-evaluation process, UDOT reviewed and updated the ecosystem resources (wildlife, wetlands, and waters of the U.S.), and cultural resource clearances for the project.

The project team reviewed past findings and compared those to potential impacts from the design revisions as presented by the RSA. As part of that process certain analyses were determined not necessary for certain elements as there was no modification.

**Table 6,** located at the end of this section, summarizes the changes to the environmental impacts from the RSA, including those determined to not warrant further analyses. Clearance memoranda are provided in Appendices. A discussion of resource impacts is provided below.

## *Land Use*

Land use types along SR-177 between 1800 North and SR-193 include agricultural, and residential. **Figure 3** shows the land use impacts of the RSA and **Table 2** compares those impacts to the land use impacts of the ESA.

The RSA would convert a total of 79 more acres to transportation use than the original 878 acres of the ESA, for a total of 957 acres which is a 9% increase. This is due to the increased right of way width for the added lanes, ponds, and utility relocations. Even though the RSA has greater land use impacts, it is still consistent with local land use plans.

**TABLE 2**
Refined Selected Alternative (RSA) Changes to Land Use Compared to EIS Selected Alternative (ESA)

| Alternative | Acreage by Land Use Category (Acre) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Agriculture | Commercial | Industrial | Institutional | Open Space | Conservation Area | Recreation | Residential | Total |
| **ESA Total** | 485 | 1 | 2 | 1 | 124 | 141 | 18 | 106 | 878 |
| **RSA Net Increase** | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 79 |
| **RSA Total** | **523** | **1** | **2** | **1** | **124** | **141** | **18** | **147** | **957** |

## *Farmland*

**Figure 4** shows the farmland impacts of the RSA and ESA. The impacts are also summarized in **Table 3.** The RSA would convert 2 more acres of Farmland of Statewide Importance and 10 more acres of prime farmland compared to the ESA, for a total of 771 acres of farmland impacts which is a 1.6% increase in farmland conversion to transportation corridor when compared with the ESA. The additional farmland impacts are due to the larger footprint of the RSA.

*Figure 3 Land Use Impacts*

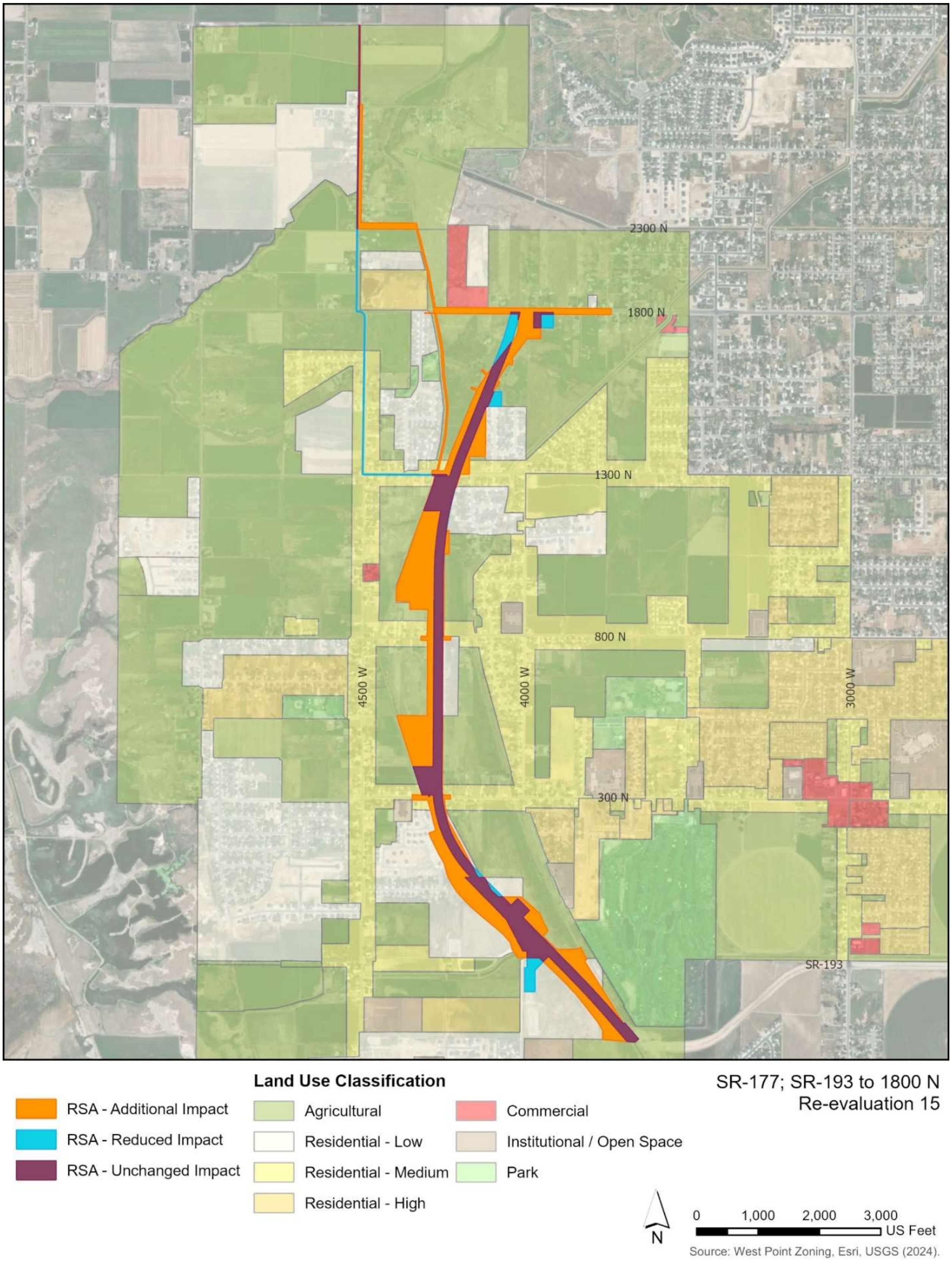


*Figure 4 Farmland Impacts*

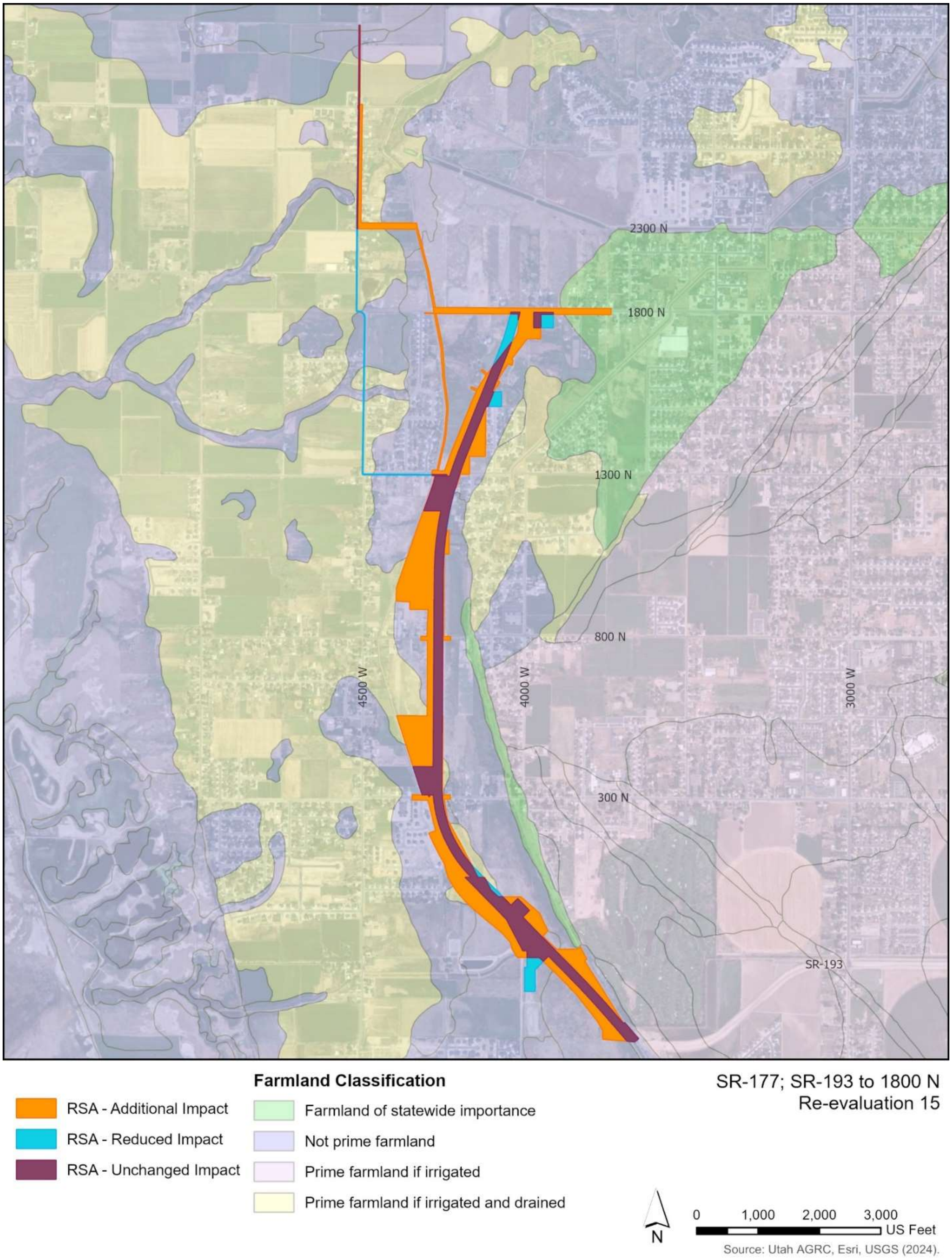


**TABLE 3**
Refined Selected Alternative (RSA) Changes to Farmland Compared to EIS Selected Alternative (ESA)

| Alternative | Acreage by Farmland Type (Acre) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Irrigated Cropland | Non-irrigated Cropland | Prime Farmland if irrigated and drained | Farmland of Statewide or Local Importance | Agriculture Protection Area | Century Farms | Farmland Remnants | Total |
| **ESA Total** | 525 | 78 | 94 | 16 | 3 | 16 | 27 | 759 |
| **RSA Net Increase** | 0 | 0 | 10 | 2 | 0 | 0 | 0 | 12 |
| **RSA Total** | 525 | 78 | 104 | 18 | 3 | 16 | 27 | 771 |

### *Community*

The community impacted by the RSA is the same as the community impacted by the ESA. However, the increase in size of the project footprint would increase impacts to property owners affected by the ESA. Acquisitions based on the RSA are identified in **Table 4**.

As would be the case of the ESA, the RSA would not divide any subdivisions but would create a physical barrier within the community with crossing points located at city streets. Construction of the RSA would require 1 residential relocation more than the ESA. Property owners will be compensated based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the Utah Relocation Assistance Act, Utah Code, Section 57-12.

Impacts on quality of life, recreation resources, community facilities, public health and safety, and public services and utilities associated with the RSA would be similar to those analyzed in the Final EIS.

**TABLE 4**
Refined Selected Alternative (RSA) Acquisitions and Relocations
(Excludes properties owned by UDOT)

| Davis County Parcel ID # | Property Address | Area of Impact (acres) ESA | RSA | Change | New Reloca-tion |
|---|---|---|---|---|---|
| 120370092 | SW1/4 NW1/4 Sec 5, T4N, R2W, SLB&M | 1.32 | 2.32 | 0.99 | |
| 120390028 | NW1/4 SW1/4 Sec 5, T4N, R2W, SLB&M | 0.16 | 0.24 | 0.08 | |
| 120390031 | NW1/4 SW1/4 Sec 5, T4N, R2W, SLB&M | 0.17 | 0.26 | 0.09 | |
| 120390032 | NW1/4 SW1/4 Sec 5, T4N, R2W, SLB&M | 0.00 | 0.25 | 0.25 | |
| 120390036 | NW1/4 SW1/4 Sec 5, T4N, R2W, SLB&M | 0.21 | 0.00 | -0.21 | |
| 120390057 | NW1/4 SW1/4 Sec 5, T4N, R2W, SLB&M | 2.17 | 0.50 | -1.67 | |
| 120430004 | 4233 W 300 N, West Point, UT 84015 | 0.07 | 0.25 | 0.18 | |
| 120430013 | 4157 W 300 N, West Point, UT 84015 | 0.03 | 0.00 | -0.03 | |
| 120430096 | SE1/4 NE1/4 Sec 6, T4N, R2W, SLB&M | 0.00 | 0.14 | 0.14 | |
| 120430116 | SE1/4 NE1/4 Sec 6, T4N, R2W, SLB&M | 0.00 | 2.55 | 2.55 | |
| 120430118 | SE1/4 NE1/4 Sec 6, T4N, R2W, SLB&M | 0.00 | 0.71 | 0.71 | |
| 120430120 | SE1/4 NE1/4 Sec 6, T4N, R2W, SLB&M | 0.00 | 0.95 | 0.95 | |
| 120430121 | SE1/4 NE1/4 Sec 6, T4N, R2W, SLB&M | 0.00 | 0.29 | 0.29 | |
| 130450021 | 4545 W 2025 N, Hooper, UT 84315 | 0.01 | 0.00 | -0.01 | |
| 130450024 | SW1/4 Sec 19, T5N, R2W, SLB&M | 0.10 | 0.23 | 0.14 | |
| 140290021 | 4040 W 1800 N, West Point, UT 84015 | 0.00 | 0.07 | 0.07 | |
| 140290028 | 4040 W 1800 N, West Point, UT 84015 | 0.00 | 0.91 | 0.91 | |
| 140290029 | 4040 W 1800 N, West Point, UT 84015 | 0.00 | 0.26 | 0.26 | |
| 140310096 | W1/2 SW1/4 Sec 29, T5N, R2W, SLB&M | 0.24 | 1.41 | 1.17 | |
| 140310097 | W1/2 SW1/4 Sec 29, T5N, R2W, SLB&M | 1.40 | 0.66 | -0.74 | |
| 140370007 | 2061 N 4500 W, Hooper, UT 84315 | 0.07 | 0.21 | 0.13 | |
| 140370009 | NW1/4 Sec 30, T5N, R2W, SLB&M | 0.01 | 0.00 | -0.01 | |
| 140370018 | SE1/4 Sec 30, T5N, R2W, SLB&M | 0.05 | 0.00 | -0.05 | |
| 140370026 | NW1/4 Sec 30, T5N, R2W, SLB&M | 0.04 | 0.00 | -0.04 | |
| 140370027 | NW1/4 Sec 30, T5N, R2W, SLB&M | 0.03 | 0.00 | -0.03 | |
| 140370033 | 2135 N 4500 W, Hooper, UT 84315 | 0.04 | 0.00 | -0.04 | |
| 140370040 | NE1/4 NW1/4 Sec 30, T5N, R2W, SLB&M | 0.12 | 0.36 | 0.24 | |
| 140370043 | NW1/4 Sec 30, T5N, R2W, SLB&M | 0.04 | 0.12 | 0.08 | |
| 140370044 | NW1/4 Sec 30, T5N, R2W, SLB&M | 0.01 | 0.03 | 0.02 | |
| 140370048 | 4560 W 1800N, West Point, UT 84015 | 0.07 | 0.00 | -0.07 | |
| 140370052 | NW1/4 Sec 30, T5N, R2W, SLB&M | 0.07 | 0.00 | -0.07 | |
| 140370053 | 2025 N 4500 W, Hooper, UT 84315 | 0.02 | 0.00 | -0.02 | |
| 140370054 | 2005 N 4500 W, Hooper, UT 84315 | 0.02 | 0.00 | -0.02 | |
| 140380029 | 4040 W 1800 N, West Point, UT 84015 | 0.00 | 0.22 | 0.22 | |
| 140380050 | 4040 W 1800 N, West Point, UT 84015 | 0.00 | 2.96 | 2.96 | |

| Davis County Parcel ID # | Property Address | Area of Impact (acres) | | | New Reloca-tion |
|---|---|---|---|---|---|
| | | ESA | RSA | Change | |
| 140380051 | 4040 W 1800 N, West Point, UT 84015 | 0.00 | 0.84 | 0.84 | |
| 140380061 | NE1/4 Sec 30, T5N, R2W, SLB&M | 0.00 | 0.67 | 0.67 | |
| 140380062 | NE1/4 Sec 30, T5N, R2W, SLB&M | 0.00 | 0.21 | 0.21 | |
| 140380067 | NE1/4 Sec 30, T5N, R2W, SLB&M | 0.00 | 0.12 | 0.12 | |
| 140390009 | 1513 N 4500 W, West Point, UT 84015 | 0.08 | 0.00 | -0.08 | |
| 140390026 | 1609 N 4500 W, West Point, UT 84015 | 0.01 | 0.00 | -0.01 | |
| 140390043 | 1309 N 4500 W, West Point, UT 84015 | 0.04 | 0.00 | -0.04 | |
| 140390057 | SW1/4 Sec 30, T5N, R2W, SLB&M | 0.27 | 0.00 | -0.27 | |
| 140390068 | SW1/4 Sec 30, T5N, R2W, SLB&M | 0.34 | 0.00 | -0.34 | |
| 140400072 | 4167 W 1800 N, West Point, UT 84015 | 2.29 | 3.10 | 0.81 | |
| 140400073 | 4167 W 1800 N, West Point, UT 84015 | 0.00 | 0.47 | 0.47 | |
| 140400101 | 4182 W 1300 N, West Point, UT 84015 | 1.07 | 1.87 | 0.80 | X |
| 140400107 | SE1/4 Sec 30, T5N, R2W, SLB&M | 0.00 | 0.93 | 0.93 | |
| 140400108 | SE1/4 Sec 30, T5N, R2W, SLB&M | 0.00 | 1.61 | 1.61 | |
| 140420005 | 4481 W 1300 N, West Point, UT 84015 | 0.03 | 0.00 | -0.03 | |
| 140420037 | NW1/4 NE1/4 Sec 31, T4N, R42W, SLB&M | 0.07 | 0.18 | 0.11 | |
| 140420038 | NW1/4 NE1/4 Sec 31, T4N, R42W, SLB&M | 0.14 | 0.23 | 0.09 | |
| 140420066 | NW1/4 NE1/4 Sec 31, T4N, R42W, SLB&M | 0.02 | 0.00 | -0.02 | |
| 140420120 | NE1/4 Sec 31, T4N, R42W, SLB&M | 0.06 | 0.07 | 0.00 | |
| 140440032 | 358 N 4500 W, West Point, UT 84015 | 1.46 | 1.48 | 0.02 | |
| 140440055 | SW1/4 NE1/4 Sec 31, T5N, R2W, SLB&M | 0.56 | 2.36 | 1.80 | |
| 140440073 | 410 N 4500 W, West Point, UT 84015 | 0.58 | 2.02 | 1.44 | |
| 140440074 | 436 N 4500 W, West Point, UT 84015 | 0.54 | 2.09 | 1.55 | |
| 140440082 | SW1/4 SE1/4 Sec 31, T5N, R2W, SLB&M | 0.08 | 0.10 | 0.01 | |
| 140440084 | SE1/4 Sec 31, T5N, R2W, SLB&M | 0.00 | 0.15 | 0.15 | |
| 140440091 | 358 N 4500 W, West Point, UT 84015 | 0.89 | 0.89 | 0.01 | |
| 140440092 | 410 N 4500 W, West Point, UT 84015 | 0.83 | 0.84 | 0.02 | |
| 140440098 | 526 N 4500 W, West Point, UT 84015 | 1.00 | 4.98 | 3.98 | |
| 140440099 | 4353 W 800 N, West Point, UT 84015 | 0.11 | 0.33 | 0.21 | |
| 141750005 | NW1/4 NE1/4 Sec 30, T5N, R2W, SLB&M | 0.00 | 1.98 | 1.98 | |
| 142120006 | 4449 W 1300 N, West Point, UT 84015 | 0.04 | 0.00 | -0.04 | |
| 142120007 | 4427 W 1300 N, West Point, UT 84015 | 0.03 | 0.00 | -0.03 | |
| 142120008 | 4405 W 1300 N, West Point, UT 84015 | 0.03 | 0.00 | -0.03 | |
| 142120009 | 4339 W 1300 N, West Point, UT 84015 | 0.03 | 0.00 | -0.03 | |
| 142120010 | 4303 W 1300 N, West Point, UT 84015 | 0.03 | 0.00 | -0.03 | |
| 144300001 | 1273 N 4150 W, West Point, UT 84015 | 0.53 | 0.56 | 0.03 | |
| 144300002 | 1251 N 4150 W, West Point, UT 84015 | 0.43 | 0.44 | 0.01 | |
| 144300003 | 1235 N 4150 W, West Point, UT 84015 | 0.36 | 0.35 | -0.01 | |

| Davis County Parcel ID # | Property Address | Area of Impact (acres) | | | New Reloca-tion |
|---|---|---|---|---|---|
| | | ESA | RSA | Change | |
| 144300004 | 1223 N 4150 W, West Point, UT 84015 | 0.31 | 0.29 | -0.01 | |
| 144300005 | 1205 N 4150 W, West Point, UT 84015 | 0.25 | 0.24 | -0.01 | |
| 144300009 | 1081 N 4150 W, West Point, UT 84015 | 0.09 | 0.37 | 0.28 | |
| 144300010 | 1069 N 4150 W, West Point, UT 84015 | 0.01 | 0.25 | 0.24 | |
| 144450014 | 1189 N 4150 W, West Point, UT 84015 | 0.20 | 0.19 | -0.02 | |
| 144450015 | 1175 N 4150 W, West Point, UT 84015 | 0.16 | 0.14 | -0.02 | |
| 144450016 | 1161 N 4150 W, West Point, UT 84015 | 0.12 | 0.11 | -0.01 | |
| 144450017 | 1127 N 4150 W, West Point, UT 84015 | 0.09 | 0.13 | 0.05 | |
| **TOTAL** | | **19.66** | **46.50** | **26.84** | **1** |

### *Transportation*

The RSA would double the traffic capacity of SR-177 from SR 193 to 1800 North. The design refinements would require additional bridge crossings for the two added lanes as well as ancillary improvements noted in Table 1. Travel demand modeling was performed to the design year of 2050 and incorporated the refined design into the transportation network to achieve acceptable levels of performance as measured in Levels-of-Service. The transportation impacts of the RSA would be similar to those of the ESA. See Appendix A for the Traffic Modeling Analysis Memorandum.

### *Air Quality*

The 2017 Final EIS concluded that the WDC project was not a project of air quality concern (POAQC). “The WDC is designed to reduce congestion on local roads and accommodate traffic in western Davis County. Because the WDC is designed to serve mostly local traffic, it would be used mostly by gasoline-fueled vehicles. The daily volume of traffic (less than or equal to 30,000 vehicles per day) on the WDC would be small compared to the volume of traffic that could warrant a hot-spot evaluation for PM2.5 or PM10 (that is, 125,000 vehicles per day). In addition, the volume of diesel truck traffic expected on the WDC is a small proportion of the overall traffic (about 3%, or 3750 vehicles per pay). Finally, all interchanges on the WDC have been designed to operate at LOS D or better.” (West Davis FEIS, 2017)

The RSA will add one more lane in each direction to the ESA between SR-193 and 1800 North. With the added lanes, the expected 2050 traffic for the RSA is 39,400 vehicles per day, with a diesel traffic percentage of 1.3% (or 512 vehicles per day). This is considerably less than the number of diesel vehicles estimated for the ESA and is well below the 125,000 vehicle per day with 8% diesel traffic example of a project requiring a hot-spot analysis provided in the EPA guidance document.

### *Noise*

The ESA noise analysis resulted in 890 impacted receptors. The RSA noise analysis resulted in 1,049 impacted receptors, including 76 homes that were constructed after completion of the EIS. The RSA noise analysis provides the following information about the receptors:

- 43 receptors would have a noise level greater than or equal to their NAC threshold.
- 282 receptors would receive an increase of 10 dBA or more over their existing noise levels.
- 42 receptors would experience both types of impacts.

Thirteen barriers were analyzed. Three barriers were determined feasible and reasonable and are recommended for balloting. The locations of the feasible and reasonable barriers are included in **Figure 5**. See Appendix B for the Traffic Noise Report,

### *Ecosystems*

#### Wildlife and Wildlife Habitat

One species listed as threatened under the Endangered Species Act, Ute Ladies' tresses (*Spiranthes diluvialis)* and one proposed threatened species, monarch butterfly (*Danaus plexippus*) were identified by the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) system as having potential to occur within the RSA action area.

Based on a lack of suitable habitat identified during field surveys, the proposed action is expected to have no effect on the monarch butterfly or Ute Ladies' tresses.

The species are discussed in further detail in the Threatened and Endangered Species Memo in Appendix C.

#### Wetlands

The aquatic resource delineation for the project area between SR-193 and 1800 N was conducted according to the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Arid West Regional Supplement (USACE 2008).

A total of 195 acres were surveyed as part of this delineation. A total of 38 aquatic resources were identified during this delineation of aquatic resources, which include 31.70 acres of wetlands, 5.01 acres of ponds, 7,322 linear feet of drainages/canals, and 34 linear feet of streams.

*Figure 5a. Noise Barrier 1*

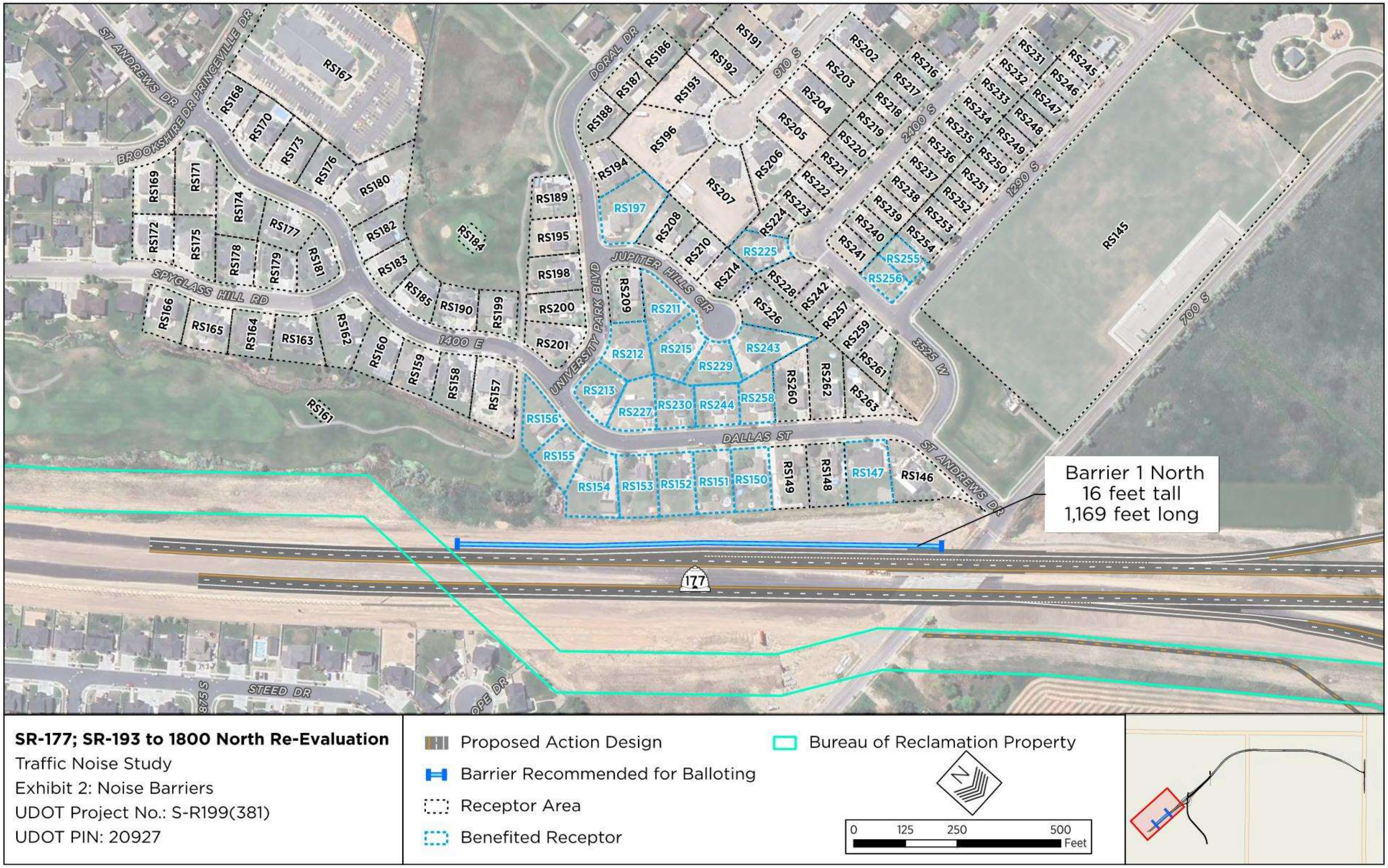


*Figure 5b. Noise Barrier 7*

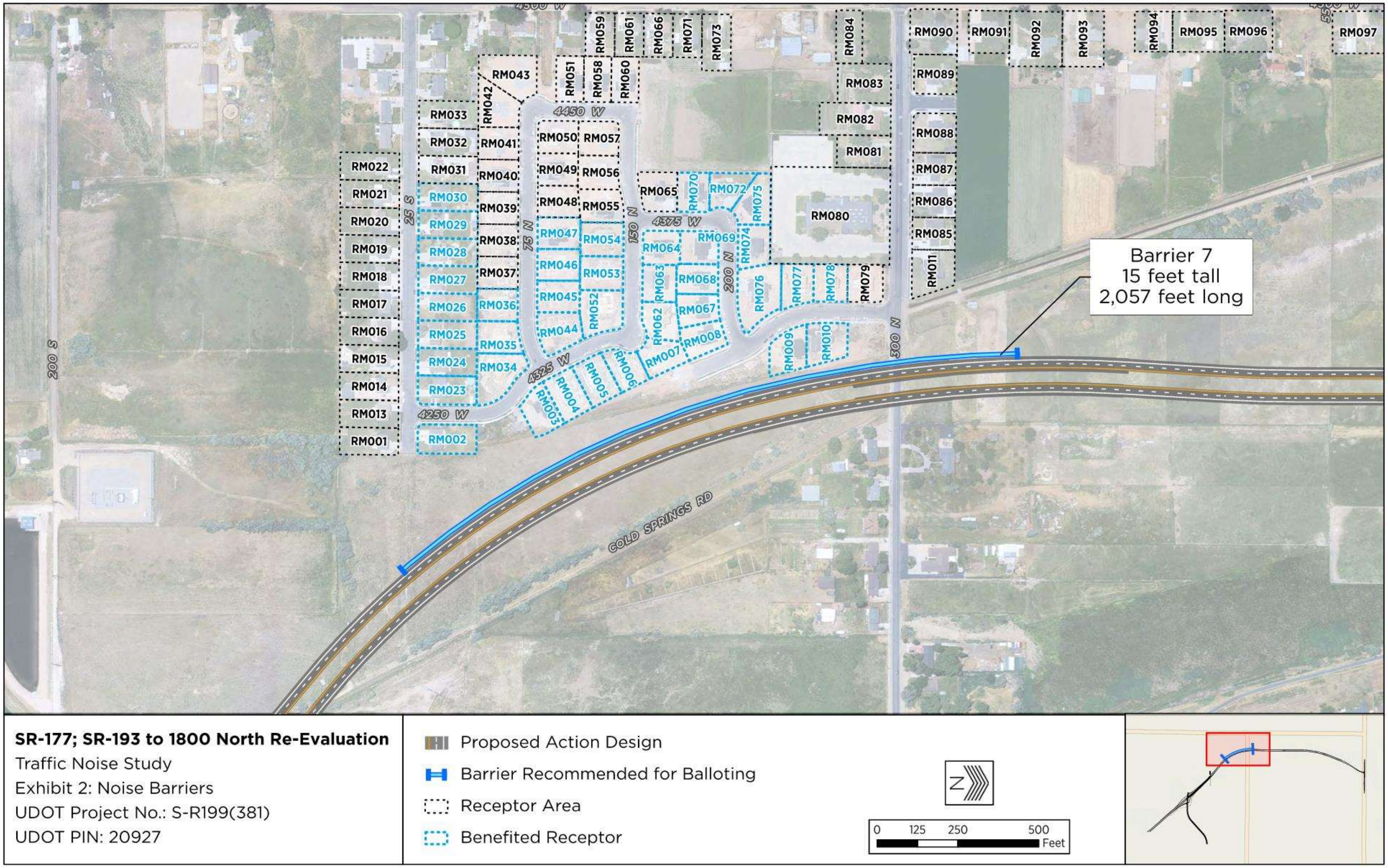
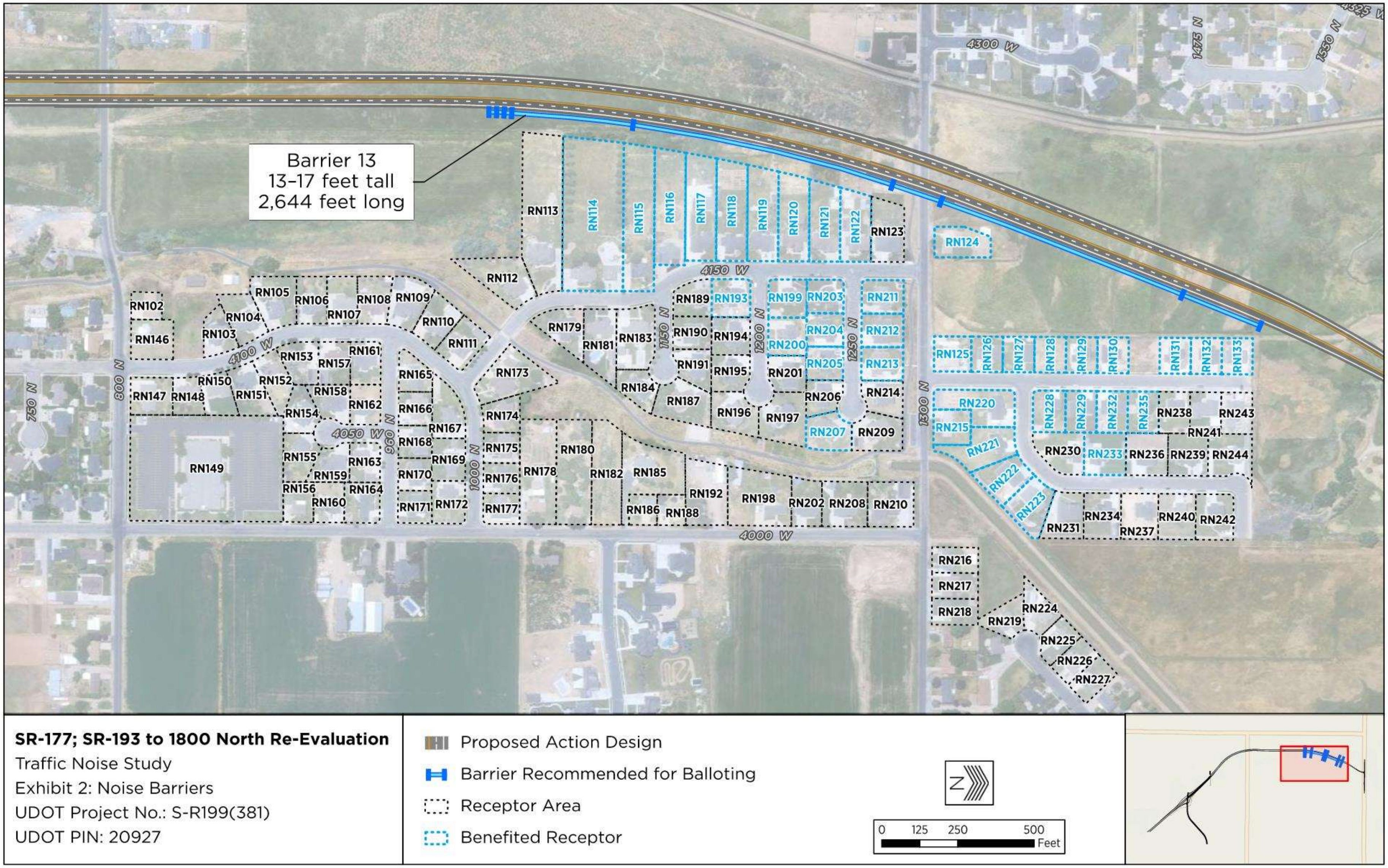


*Figure 5c. Noise Barrier 13*



The RSA would result in 13.3 more acres of wetland impacts compared to the wetland impacts of the ESA, for a total of 55.2 acres. These additional wetland impacts are needed to accommodate the RSA's wider footprint for the two additional lanes and associated drainage ponds and utility relocations. These additional wetland impacts are being accounted for in the WDC Clean Water Act Section 404 permit application and mitigation plan. The aquatic resources identified in the project area are provided in the Aquatic Resources Report in Appendix D. **Table 5** compares the RSA wetland impacts to the wetland impacts of the ESA.

**TABLE 5**
Refined Selected Alternative (RSA) Changes to Permanent Impacted Wetlands Compared to EIS Selected Alternative (ESA)

| Alternative | Acreage by Wetland Type (Acre) | |
|---|---|---|
| | Wetlands | Open Water |
| **ESA Total** | 41.9 | 4.2 |
| **RSA Net Increase** | 13.3 | 1.5 |
| **RSA Total** | 55.2 | 5.7 |

### *Historic, Archaeological, and Paleontological Resources*

As part of the re-evaluation process, a supplemental cultural resource inventory and historic structures inventory was conducted in June, August, October, and November 2024.

Five historical buildings were identified in the survey area for the RSA. These structures include three isolated agricultural outbuildings and two historical dwellings. None of the historical buildings are eligible structures for the National Register of Historic Places (NRHP). See Appendix E for the Historic Structures Inventory.

An intensive-level cultural resource inventory for the project area was also conducted. The inventory identified three archaeological sites—42DV138 (an unnamed land drain), 42DV158/42DV223 (the Hooper Canal System), and 42DV182 (the Layton Canal System). Sites 42DV138 and 42DV182 are recommended as ineligible for the National Register under all criteria. Site 42DV158/42DV223 is recommended eligible under Criterion A. Site numbers, descriptions, and recommended eligibility are included in the Archaeological Resource Assessment report in Appendix E.

The project would require piping 40 feet of the open Hooper Canal System to extend sidewalks on the north and south sides of 1300 North to the Emigrant Trail. The project would also pipe another 24 feet of the canal at about 2050 North to connect sidewalks to the Emigrant Trail at 4500 West.

Per UDOT requirements for projects with notable ground disturbance, the Utah Geological Survey (UGS) were consulted regarding known and potential paleontological resources that could be affected by the proposed undertaking. UGS indicated that no fossil localities are known to be present in the survey area and that the Quaternary and Recent alluvial and lacustrine deposits exposed in the area have low potential for yielding significant fossil localities

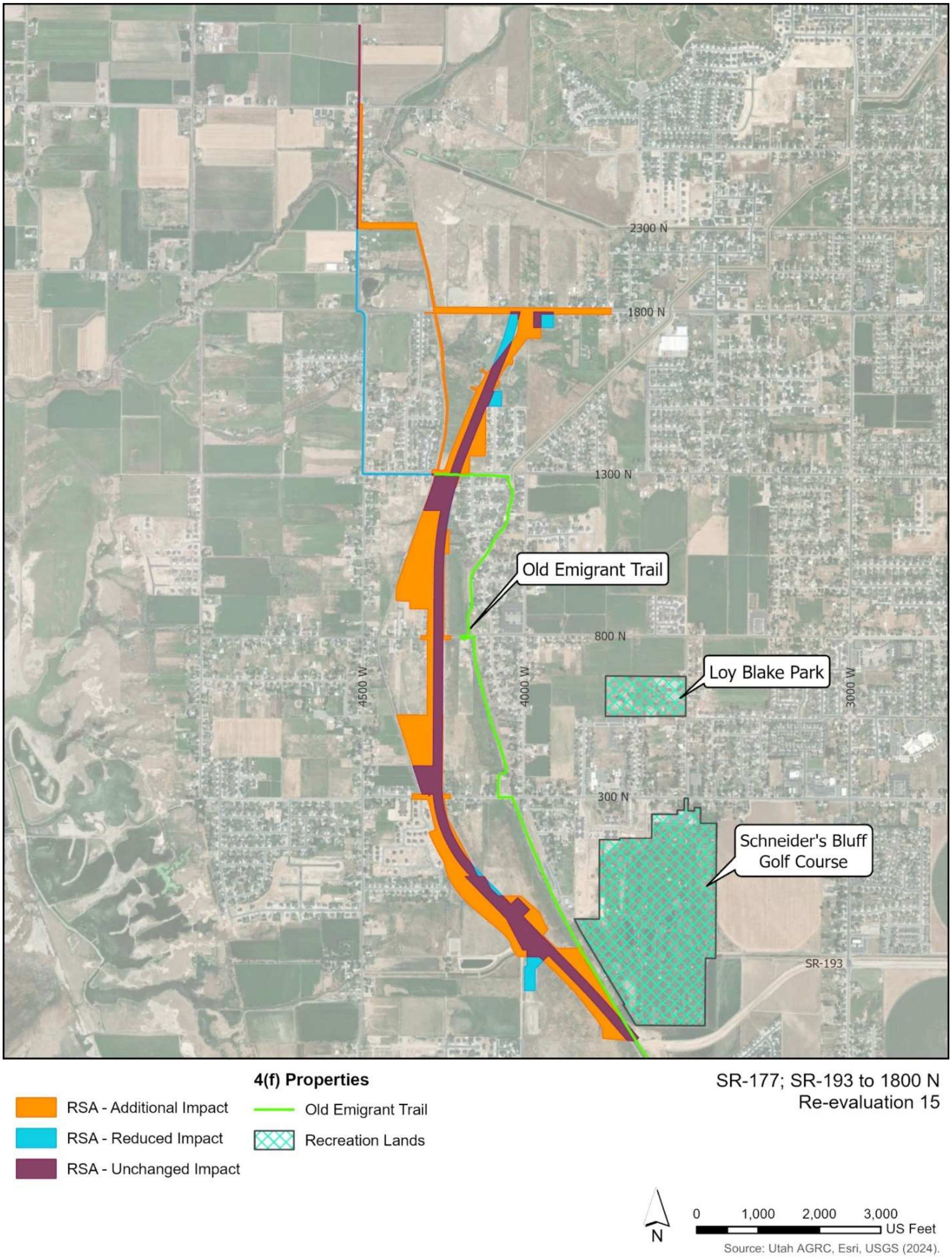
The Utah SHPO has determined that the RSA will result in a finding of No Adverse Effect and has concurred with the Determination of Eligibility and Finding of Effect. A copy of the Determination of Eligibility and Finding of Effect (DOEFOE) is provided in Appendix E.

### *Section 4(f)*

Section 4(f) of the Department of Transportation Act of 1966 is codified at 49 United States Code (USC) 303, Policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites, and at 23 USC 138, Preservation of Parklands. It applies to significant publicly owned parks, recreation areas, and wildlife and waterfowl refuges and to significant publicly or privately owned historic properties. The requirements of Section 4(f) apply only to agencies within the U.S. Department of Transportation; for example, the Federal Highway Administration (FHWA), the Federal Transit Administration, and the Federal Aviation Administration.

The Final EIS identifies several resources afforded protection under Section 4(f). The RSA would not lead to direct use of any of the resources identified in the Final EIS or any new resources determined to be afforded protection in accordance with Section 4(f) (as no new resources were identified). The resources afforded protection under Section 4(f) within proximity of the RSA would be the Old Emigrant Trail, Loy Blake Park, and the Schneiter's Bluff Golf Course, which are identified on **Figure 6**. Further direct use by the RSA would not occur for any of the three resources, and any proximity impacts to the use of the resources would not be substantial enough to qualify as a constructive use. Therefore, further use of Section 4(f) resources by the RSA would not occur.

*Figure 6. 4(f) Resource Locations*



## *Summary*

***TABLE 6***
***Summary of Re-evaluation Analysis***

| Environmental Resource | Changed? Yes | Changed? No | Comments |
|---|---|---|---|
| Land Use | X | | The RSA would convert 79 more acres to transportation use than the ESA, for a total of 957 acres, which is a 9% increase. Even though the RSA has greater land use impacts, it is still consistent with local land use plans. |
| Farmland | X | | The RSA would convert 2 more acres of farmland of statewide importance and 10 more acres of prime farmland if irrigated and drained compared to the ESA. This brings the total farmland impacts of the RSA to 771 acres, which is 1.6% more than the ESA. |
| Community | X | | The RSA would require UDOT to acquire an additional 26.84 acres of land and one additional relocation than were identified as being impacted by the ESA. |
| Environmental Justice | | X | The RSA would not change impact conclusions reached in the Final EIS and therefore, no further analysis is warranted (for example, no displacements of low-income or minority populations would occur). |
| Transportation | | X | The transportation impacts of the RSA would be similar to those of the ESA. The Traffic Modeling Analysis Memorandum is provided in Appendix A. |
| Economics | | X | Economic impacts associated with the RSA would be similar to those of the ESA, and the result of the analysis would not change. |
| Joint Development | | X | Various trail projects and improvements are located in communities along the RSA alignment. Implementation of trail network improvements in the vicinity of the RSA would depend on funding, construction, long-term maintenance, and support from the local governments. The impact of these improvements would be similar to those evaluated in the Final EIS, and the result of the analysis would not change. |
| Pedestrian and Bicyclist | | X | The impact on trails and trail maintenance is similar to that identified in the Final EIS, and the result of the analysis would not change. The RSA will include an additional trail connection to the Emigrant Trail near 200 S per West Point City's Trails Master Plan. The location of the extension of the Emigrant Trail to the Weber County line would follow a different route than identified in the EIS. |
| Air Quality | X | | The RSA will not have a significant volume of total traffic or percent of diesel truck traffic. Therefore, it is not a POAQC, and no project-level "hotspot" analysis is required for the RSA. |

| Environmental Resource | Changed? Yes | Changed? No | Comments |
|---|---|---|---|
| Noise | X | | The RSA would impact 159 more receptors than the ESA. 76 of the RSA-impacted receptors are newer homes that did not exist at the time of the ESA evaluation. Thirteen barriers were analyzed as part of the analysis. Three barriers were determined feasible and reasonable and are recommended for balloting.<br>The Traffic Noise Report is provided in Appendix B. |
| Water Quality | | X | Based on the additional two lanes, the RSA would include more paved surface than the ESA. The RSA adds 16.5 acres of impervious area to the 259 acres identified for the ESA. This is a 6.4% increase of impervious area between I-15 and 1800 North. UDOT's construction requirements related to water quality as outlined in the Final EIS apply equally to the RSA.<br>The RSA does not include any additional stream crossings or additional groundwater or public drinking water wells; therefore, the RSA would not change impacts evaluated with the ESA. |
| Ecosystem | X | | The RSA would result in 13.3 more acres of wetland impacts to the 41.9 acres of wetland impacts from the ESA. The additional wetland impacts are needed to accommodate the RSA's wider footprint for the two additional lanes and associated drainage ponds and utility relocations. These additional wetland impacts are being accounted for in the WDC Clean Water Act Section 404 permit application and mitigation plan. Updated Biological Assessment clearance memo is provided in Appendix C and the Aquatic Resource memo is provided in Appendix D. |
| Floodplains | | X | Between SR 193 and 1800 North, neither the ESA nor the RSA are located in a floodplain. Therefore, no floodplain impacts would occur with the RSA. |
| Historic, Archaeological, and Paleontological | X | | Five historical buildings in the survey area for the RSA were identified. None of the structures were identified as NRHP eligible structures.<br>The inventory identified three archaeological sites—42DV138 (an unnamed land drain), 42DV158/42DV223 (the Hooper Canal System), and 42DV182 (the Layton Canal System). Sites 42DV138 and 42DV182 are considered ineligible for the National Register under all criteria. Site 42DV158/42DV223 is recommended eligible under Criterion A. The Project would require piping a portion of the open Hooper Canal System to allow sidewalks on the north and south sides of 1300 North to connect to the Emigrant Trail.<br>The architectural and archaeological clearance memoranda are provided in Appendix E. A copy of the Determination of Eligibility and Finding of Effect is also provided in Appendix E.<br>According to UGS, the potential for impacts to significant paleontological resources from the RSA is very low. For this reason, |

| Environmental Resource | Changed? Yes | Changed? No | Comments |
|---|---|---|---|
| | | | paleontological resources are not discussed further in this memorandum. |
| Hazardous Waste | | X | The Utah Department of Environmental Quality Environmental Interactive Map does not identify any new environmental incidents, voluntary cleanups, or other regulatory actions within 0.5 mile of the RSA. No effects on hazardous waste sites are expected from the RSA. |
| Visual | | X | Based on the additional pavement width and bridges, visual impacts associated with the RSA would be greater than those evaluated in the Final EIS. However, because the ESA resulted in high visual impacts, the result of the analysis would not change. |
| Energy | | X | Energy impacts associated with the RSA would be similar to those evaluated in the Final EIS, and the result of the analysis would not change. |
| Construction Impacts | | X | Chapter 20 of the Final EIS describes the types of construction-related activities that would occur and what types of impacts would occur from such activities. The chapter also makes direct reference to the needs for easements and construction phasing. The RSA would not present additional types of construction impacts beyond what has been presented in the Final EIS. Mitigations as described therein would also apply to the RSA. Therefore, no further analysis is warranted. |
| Indirect Effects | | X | Chapter 23 of the Final EIS describes indirect effects from the ESA. In that EIS chapter, potential general indirect effects on applicable resources (i.e., social resources, demographics, growth, economics, ecosystems, farmlands, floodplains, noise, etc.) were examined and accounted for. The RSA would not present any unaccounted for impact types or mitigation strategies as already adopted in accordance with the Final EIS. Therefore, no further analysis is warranted. |
| Cumulative Impacts | | X | The Final EIS presents both geospatial and temporal parameters when assessing trends (past, present, and future) that capture not only reasonably foreseeable actions, but also the potential cumulative contributions of the ESA. Tables 24-1 and 2, *Present and Reasonably Foreseeable Transit and Roadway Actions* and *Present and Reasonably Foreseeable Development Actions* adequately capture actions together with the RSA would contribute to resource-identified impacts. No new types of cumulative impacts would be presented by the RSA and therefore, no further analysis is warranted. |
| Permits, Reviews, and Approvals | | X | The RSA does not require permits, review, or approvals not already described in the Final EIS. Therefore, no further analysis is warranted. |

| Environmental Resource | Changed? Yes | Changed? No | Comments |
|---|---|---|---|
| Section 4(f) Resources | | X | The Final EIS identifies several resources afforded protection under Section 4(f). The RSA would not lead to further direct use of any of the resources identified in the Final EIS or any new resources determined to be afforded protection in accordance with Section 4(f) (as no new resources were identified). The resources afforded protection under Section 4(f) within proximity of the RSA would be the Old Emigrant Trail, Loy Blake Park, and the Schneiter's Bluff Golf Course. Further direct use would not occur for any of the three resources, and any proximity impacts to the use of the resources would not be substantial enough to qualify as a constructive use. Therefore, further use of Section 4(f) resources by the RSA would not occur. |
| Sequencing | | X | The RSA does not affect sequencing described in the Final EIS. Therefore, the result of the analysis would not change. |

## PUBLIC INVOLVEMENT EFFORTS

The project team has shared information about the RSA through its project website, social media page, and project hotline. An online interactive map showing the proposed improvements is available on the website and the project team has answered questions as they arose. UDOT staff have also met with the affected property owners to explain the need for UDOT to purchase the properties and to answer questions about the property acquisition process.

The project team has met with and is continuing to meet with local government staff and officials and other stakeholders during the design process. An informational meeting was held on October 23, 2024 to provide local residents and other stakeholders with project information and answer questions.

Formal public comment was not required for this re-evaluation. However, comments were received during the informational meeting. Comments were related to noise walls, property transfer, drainage, future SR-177 alignments and Antelope Drive widening (which are not the subject of this re-evaluation), insects and wildlife, safe routes to schools, maintenance of traffic, berm height, lighting, signs, signals, low noise asphalt, and fencing. With the exception of concerns related to noise, none of the comments necessitated revised resource evaluation. Subsequent to the meeting, UDOT refined the roadway design near 1300 North and re-analyzed noise barrier 13. The analysis determined that noise barrier 13 is feasible and reasonable under UDOT's Noise Abatement Policy, and this barrier is recommended for balloting. This analysis is included in the Noise Technical Report in Appendix B.

# CONCLUSION

The 2017 Final EIS and Section 4(f) Evaluation for the West Davis Corridor has been re-evaluated as required by the UDOT MOU and FHWA regulations found in 23 CFR Parts 771 and 774, FHWA Technical Advisory T6640.8A, and the National Environmental Policy Act.

UDOT evaluated the expected impacts to the natural and built environment from the RSA and evaluated any changes and new information against the ESA, which was analyzed in the Final EIS (FHWA 2017). No substantial changes would occur to the natural or built environment as a result of the RSA that would significantly affect the quality of the human and natural environment. The impacts of these changes are not individually or cumulatively significant or significantly different from those described in the 2017 Final EIS and ROD. Per 23 CFR Section 771.130(a), an EIS shall be supplemented whenever (1) changes to the proposed action would result in significant environmental impacts that were not evaluated in the EIS or (2) new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS. UDOT has determined that preparing a supplemental EIS is not necessary since the changes to the proposed action, new information, or new circumstances described in this re-evaluation do not result in significant environmental impacts that were not evaluated in the EIS. UDOT Environmental Services requests concurrence that this re-evaluation has demonstrated that the ROD remains valid and that the proposed resources, impacts, and methodology documented in this environmental re-evaluation are valid in accordance with 23 CFR Section 771.129.

Sincerely,

Naomi Kisen

Naomi Kisen
UDOT Environmental Program Manager

Enclosures

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**EIS Re-evaluation Approval**
**UDOT Project Number S-R199 (391), West Davis Corridor,**
**Four Lanes from SR-193 to 1800 N in Davis County UT (PIN 20927)**

Robert J. Wight 03/07/2025

Robert J. Wight, PE Date
Region One Director
Utah Department of Transportation

# REFERENCES

Meess, Sara and Ellis, Sheri Murray 2012. *Historic Buildings Assessment for the Proposed West Davis Corridor Project, Davis and Weber Counties, Utah.* SWCA Environmental Consultants, Salt Lake City. Antiquities Project Number U-10-ST-0812ps. May.

FHWA 2017. West Davis Corridor Final Environmental Impact Statement and Section 4(f) Evaluation. June.

Hayden, Martha. 2011. Letter from Martha Hayden of the Utah Geological Survey to Sheri Murray Ellis of SWCA Environmental Consultants regarding known and potential localities in the West Davis Corridor impact analysis area. May 2.

Utah Department of Transportation (UDOT) 2020a . *UDOT Project Number S-99(245)2, S.R. 193, 4500 W to 3000 W in Davis County, Utah (PIN 16518) State Environmental Study. February.*

UDOT 2020b. *UDOT Project Number S-0067(14)0, S.R. 67, West Davis Corridor; Four Lanes to S.R. 193 in Davis County, Utah (PIN 7176) Environmental Impact Statement Re-evaluation #5.* January.

WFRC 2015. Regional Transportation Plan: 2015-2040. May.

WFRC 2023. Wasatch Front Regional Transportation Plan: 2023-2050. May

# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| **CFR** | Code of Federal Regulations |
| **EIS** | Environmental Impact Statement |
| **ESA** | EIS Selected Alternative |
| **ft** | foot/feet |
| **$ft^2$** | square foot/feet |
| **LOS** | Level of Service |
| **MOU** | Memorandum of Understanding |
| **NEPA** | National Environmental Policy Act |
| **ROD** | Record of Decision |
| **RSA** | Refined Selected Alternative |
| **RTP** | Regional Transportation Plan |
| **SES** | State Environmental Study |
| **UDOT** | Utah Department of Transportation |
| **U.S.C** | United States Code |
| **WDC** | West Davis Corridor |
| **WFRC** | Wasatch Front Regional Council |

# Appendix A – TRANSPORTATION

# MEMORANDUM

**To:** West Davis Corridor Extension Team

**From:** Avenue Consultants

**Date:** August 12, 2024

**Subject:** West Davis Corridor Extension Re-evaluation Travel Modeling Analyis Memo

## 1 INTRODUCTION AND PROJECT DESCRIPTION

The Utah Department of Transportation (UDOT) is performing a re-evaluation of West Davis Corridor (SR-177) to extend the northern corridor terminus from SR-193 to 1800 North (SR-37) and to increase the roadway cross-section from one to two travel lanes in each direction. The purpose of this memorandum is to document the benefits of extending a four-lane West Davis Corridor (WDC) farther to the north. This memo presents travel modeling results for the base year (2024), and future (2050) No Build and Build conditions.

## 2 METHODOLOGY

The Wasatch Front Regional Council (WFRC) is the designated Metropolitan Planning Organization (MPO) for Box Elder, Weber, Davis, and Salt Lake County in Utah. WFRC works in partnership with UDOT, local governments, and other stakeholders to develop long-range transportation plans for the communities within their jurisdictions. As part of its transportation planning work, WFRC, maintains a regional Travel Demand Model (TDM) for its jurisdictional area. References to "the model" in this report refer to the scripts and data maintained by WFRC, not to the Cube software on which the model runs.

The TDM is a state-of-the-practice tool that allows transportation analysts to input various land use and growth scenarios for different road and transit networks to forecast the expected traffic for each scenario. At its core, the TDM uses the common four-step modeling process, which consists of trip generation, trip distribution, mode split, and trip assignment.

Specific inputs to the TDM include socioeconomic forecasts and transportation system data. The socioeconomic data includes population, households, employment, and average household income. Household data is further classified by household size (1 to 6+ persons), number of workers (0 to 3+ persons), and income quartiles. Employment data is classified into 12 categories that include subcategories for retail, industrial, and office. Public school enrollment is classified into elementary, middle, and high school. Special trip generation tables are included for other large generators. Transportation system data includes both roadway and transit networks. The roadway network includes freeways, arterial routes, and collector routes. The transit network includes FrontRunner commuter rail, TRAX light rail, and bus routes.

The geographical area of the TDM is split into individual Traffic Analysis Zones (TAZs), which in turn hold the socioeconomic source data. The model uses the information in each TAZ for trip generation, trip distribution, and mode split. Trips generated by each TAZ are loaded onto the roadway network using special links called centroid connectors. The model then uses the roadway network in an iterative process to assign routes for each trip destination.

The WFRC Regional Transportation Plan (RTP) lists planned transportation improvement projects using 2032, 2042, and 2050 for the timeline of Phase 1, Phase 2, and Phase 3 projects, respectively. The TDM has roadway and transit networks associated with each of these phases. This study uses these networks as the assumed base conditions depending on the year being analyzed.

Version 9.0 of the WFRC TDM was utilized to develop traffic forecasts for 2050. The existing TDM model contains Brigham City and Weber, Davis, Salt Lake, and Utah Counties. The TDM has already been calibrated by WFRC on a network-wide scale. While the model has been calibrated regionally, some localized modifications were made to improve the model's accuracy within the study area, namely some minor adjustments to the locations of some centroid connectors, which are what connects the TAZs to the transportation network.

# 3 TRAVEL DEMAND MODEL RESULTS

The following sections present traffic results from the TDM for Existing, No-Build, and Build model runs.

## 3.1 Model Validation

Daily traffic volumes were collected at various locations within the study area to assist in calibrating the existing TDM. The daily traffic volumes at the count locations are presented in **Table 1** along with the corresponding TDM volumes. It shows that the two WDC TDM volumes are within 10 percent of the count volumes with the northernmost one that's closest to the study area within four percent. The table also shows commonly used target error ranges used by WFRC when calibrating the model. Those target error ranges get smaller as the observed volumes increase. A road with a volume less than 1,000 vehicles per day has a target error range of 200 percent, while a road with 10,000 to 25,000 vehicles per day, like WDC, has a target error range of 20 percent. It can be seen that the WDC model volumes are well within the target error range.

The count locations on 300 North, 800 North, 1300 North, and 1800 North are at the planned future crossings of West Davis Corridor and the volume differences range from two to 31 percent. Three of the four locations are well within the target error range, while the 300 North location exceeds the target by one percent. With these results, the model was considered sufficiently calibrated.

**Table 1.** Daily Traffic Volumes Comparison

| Roadway | Location | Traffic Counts | Existing TDM | Difference | Target Diff. |
|---|---|---|---|---|---|
| West Davis Corridor | Btwn I-15 & 950 North | 22,900 | 20,600 | -10% | ±20% |
| West Davis Corridor | Between 2000 West & SR-127 | 16,000 | 15,400 | -4% | ±20% |
| 300 North (SR-107) | Btwn Cold Springs Dr & 4000 W | 5,400 | 4,000 | -26% | ±25% |
| 800 North | Btwn 4500 West & 4100 West | 810 | 800 | -2% | ±200% |
| 1300 North | Btwn 4300 West & 4150 West | 870 | 600 | -31% | ±200% |
| 1800 North (SR-37) | Btwn 4325 West & 3675 West | 3,800 | 4,000 | +4% | ±50% |

## 3.2 Socioeconomic Data

WFRC includes socioeconomic data in their regional travel demand model which are based on county-wide projections provided by the Governor's Office of Management and Budget. The socioeconomic data within the WDC EIS study area were summarized for 2024 and 2050 and are presented in **Table 2**. As shown, the population and employment in the study area is projected to grow by 43 percent from 2024 to 2050 while households are projected to increase by 74 percent. The study area matches the study area from the West Davis Corridor Environmental Impact Statement (EIS) and is shown in **Figure 1**, which was taken from WDC EIS. The specific boundaries of the study area are:

- Northern boundary: 3000 South in Hooper and West Haven
- Southern boundary: about Parrish Lane in Centerville
- Western boundary: just east of the Great Salt Lake
- Eastern boundary: I-15

**Table 2.** WDC EIS Study Area Households and Employment

| Category | 2024 | 2050 | Growth | Annual % Growth |
|---|---|---|---|---|
| Households | 68,000 | 118,000 | 74% | 2.8% |
| Population | 222,000 | 317,000 | 43% | 1.6% |
| Employment | 83,000 | 119,000 | 43% | 1.7% |

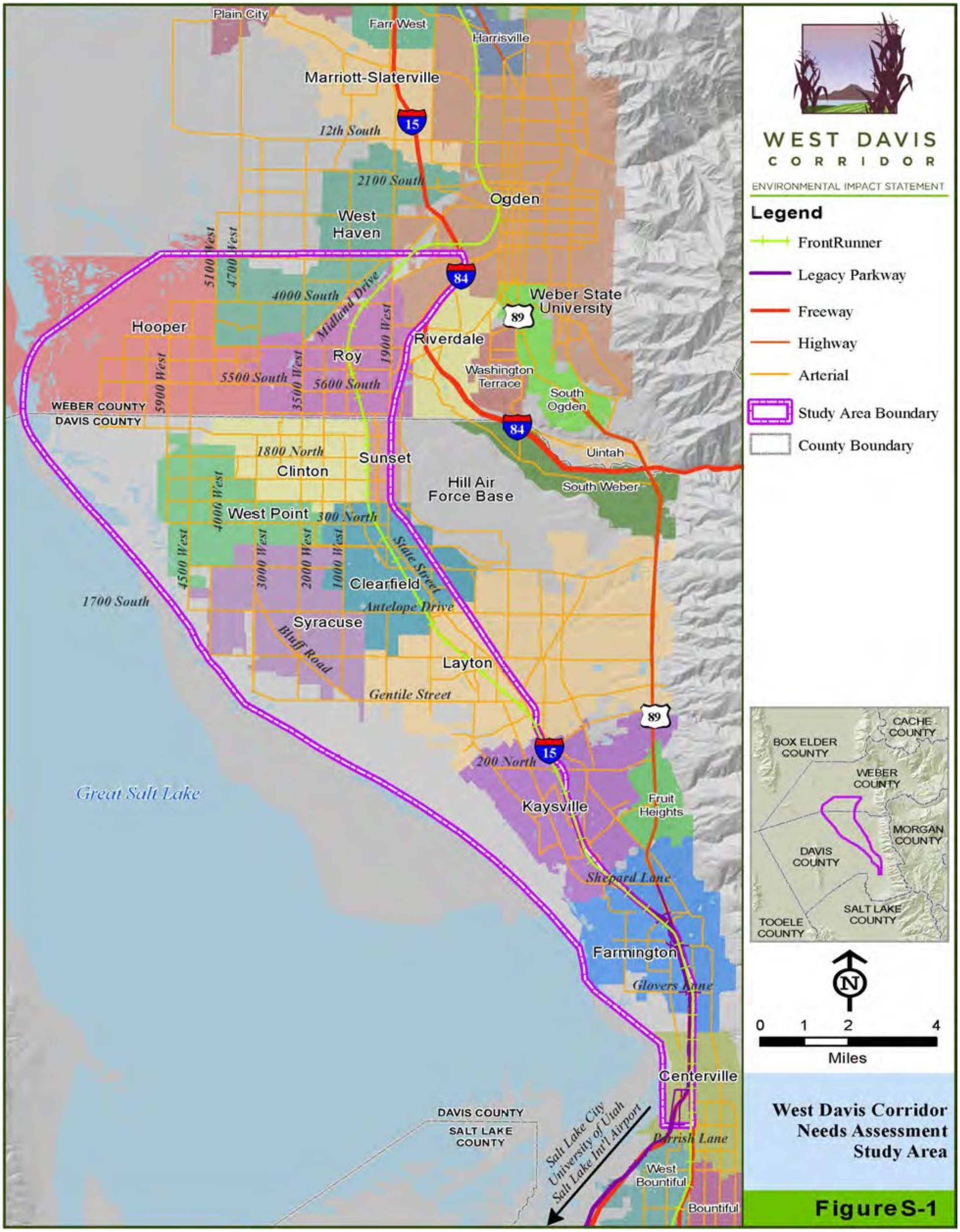


**Figure 1.** West Davis Corridor EIS Study Area

Screenshots of household and employment growth projections from 2024 to 2050 by TAZ in the vicinity of the WDC extension can be seen below in **Figures 2 and 3**. The darker the color in the figures, the larger the forecast growth. The numbers on the TAZs represent the number of new households or jobs projected for each zone.

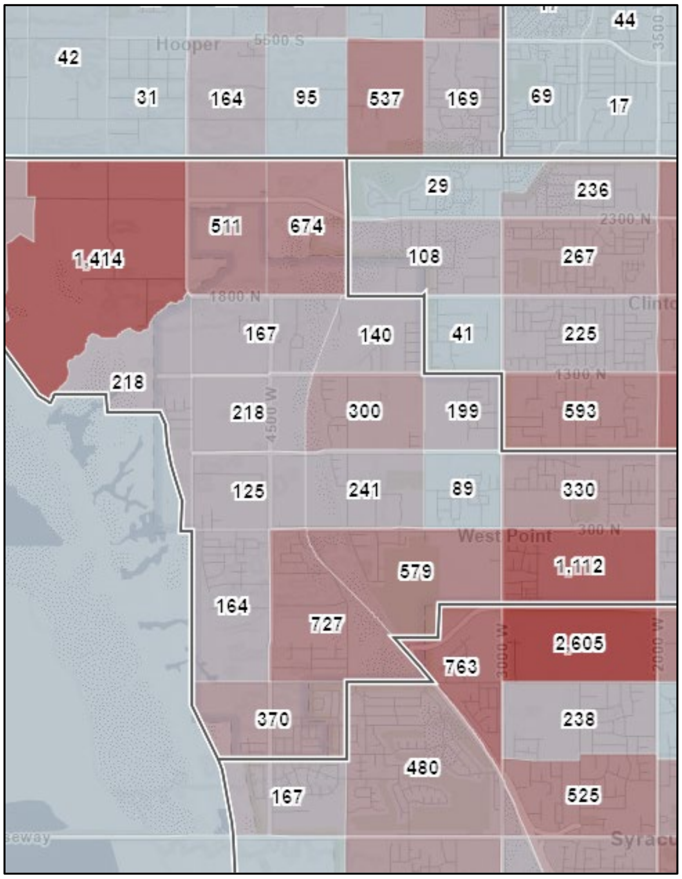


Figure 2: Household Growth (2024-2050)

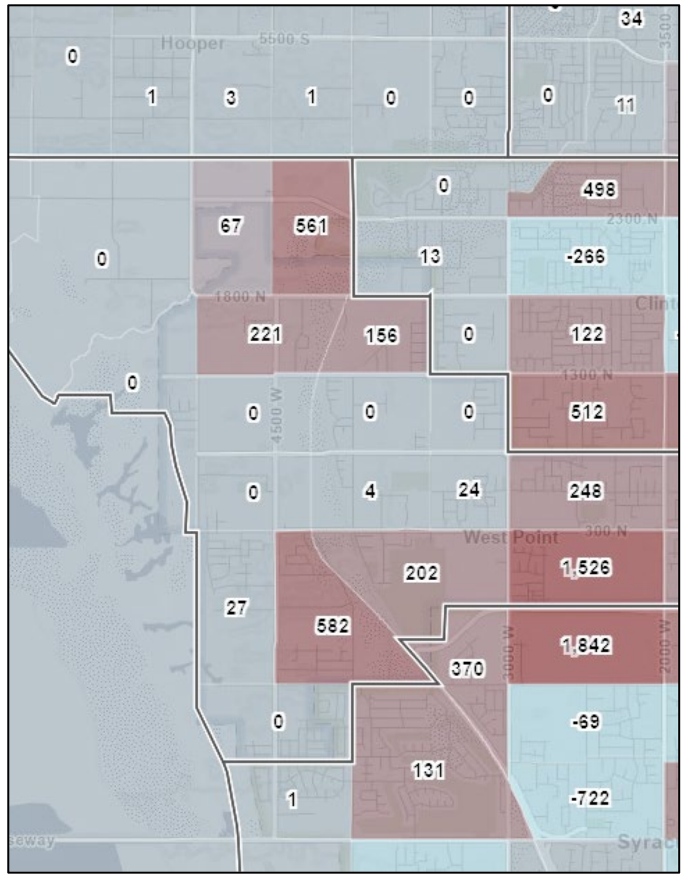


**Figure 2:** Household Growth (2024-2050)

**Figure 3:** Employment Growth (2024-2050)

## 3.3 West Davis Corridor Performance

The TDM was used to project future volumes on the proposed build section of West Davis Corridor from SR-193 to 1800 North (SR-37). The TDM uses volume-to-capacity (V/C) ratio to measure roadway congestion. V/C ratios are often correlated to Level of Service (LOS). The correlation used for this analysis as shown in **Table 3**.

**Table 3.** Level of Service based on Volume-to-Capacity Ratio

| LOS | Traffic State and Condition | V/C Ratio |
|---|---|---|
| A | Free flow | 0-0.60 |
| B | Stable flow with unaffected speed | 0.61-0.70 |
| C | Stable flow but speed is affected | 0.71-0.80 |
| D | High-density but stable flow | 0.81-0.90 |
| E | Traffic volume near or at capacity level with low speed | 0.91-1.00 |
| F | Breakdown flow | >1.00 |

The travel model was run for 2050 conditions for four scenarios. The first two scenarios assumed an interim WDC condition that would only be extended to 1800 North. The second two scenarios assumed full buildout of WDC per the WFRC 2023-2050 RTP, which has WDC extending north to 12th Street in Ogden. These scenarios assumed that WDC would transition from a freeway to an expressway between 4000 South and 2550 South. Each group of two scenarios had one scenario with one WDC travel lane in each direction and another with two travel lanes in each direction.

The resulting 2050 volumes and northbound peak period V/C ratios for the three-hour PM peak period are presented in **Table 4** for the Interim Build and Full Build scenarios. The one-lane scenario in the Interim Build is expected to operate at LOS F with 25,000 vehicles per day, while the two-lane Interim Build is expected to function at LOS A with 1,300 more vehicles per day. The benefit of having two lanes for the Interim Build is clearly illustrated.

In the Full Build scenario, the daily volumes are expected to be 16,000 to 22,000 vehicles per day higher on the same segment. The Full Build one-lane scenario has a PM peak period V/C ratio of 1.25, substantially over capacity, whereas the two-lane scenario has a peak period V/C of 0.99 while carrying approximately 3,000 more vehicles in the peak period and 7,400 more vehicles per day.

**Table 4.** Volumes and V/C on West Davis Corridor from SR-193 to 1800 North

| Description | 2050 One-Lane Interim Build | 2050 Two-Lane Interim Build | 2050 One-Lane Full Build | 2050 Two-Lane Full Build |
|---|---|---|---|---|
| Daily Volumes | 25,000 | 26,300 | 41,300 | 48,700 |
| Peak Period Northbound V/C and (LOS) | 1.03 (F) | 0.59 (A) | 1.25 (F) | 0.99 (E) |

## 3.4 Network Delay

Two network delay analyses were performed wherein the total vehicle delay on the roadway segments within a study area were extracted the TDM for each scenario. The first analysis used the WDC EIS study area and the second analysis used a study area that was focused on the north end of the WDC, which generally had the following limits: Antelope Drive on the south, 1400 North on the north, 3000 West on the east and Great Salt Lake on the west.

**Table 5** presents the total daily network delay for the WDC study area and the northern WDC study area for each of the 2050 scenarios. The 2050 build scenarios are compared to the No Build scenario, which assumes that WDC remains as is and is not extended farther north.

As shown, delay is expected to increase substantially in the 2050 No Build compared to 2024, as expected. Likewise, all of the build scenarios show substantial improvement compared to the No Build, particularly northern WDC study area, which is more localized to where the WDC The Full Build scenarios illustrate the benefit of the two-lane scenario over the one-lane scenario where the full extension of West Davis Corridor provides a delay reduction of over 50% in the northern study area.

**Table 5.** WDC EIS Study Area Daily Network Delay

| Scenario | WDC EIS Study Area | Percent Change vs. 2050 No Build | Northern WDC Study Area | Percent Change vs. 2050 No Build |
|---|---|---|---|---|
| 2024 Existing | 5,700 hours | -- | 410 hours | -- |
| 2050 No Build | 17,600 hours | -- | 4,410 hours | -- |
| 2050 Interim Build One-Lane | 16,600 hours | -6% | 4,090 hours | -7% |
| 2050 Interim Build Two-Lane | 16,100 hours | -9% | 3,750 hours | -15% |
| 2050 Full Build One-Lane | 16,200 hours | -8% | 3,350 hours | -24% |
| 2050 Full Build Two-Lane | 14,700 hours | -16% | 2,090 hours | -53% |

## 3.5 Near-Term Analysis

A near-term analysis was conducted to determine what the impacts of the interim build would have on the roadway network near the northern terminus of 1800 North and how those impacts would be mitigated by continuing to extend WDC farther to the north. This was done by performing a 2027 model run with WDC extended to 1800 North and a 2030 model run with WDC extended to 4000 South. **Table 6** compares the daily volumes on 1800 North and WDC for 2024, 2027, and 2030.

**Table 6.** Near-Term Daily Traffic Volumes

| Roadway Segment | 2024 (WDC to SR-193) | 2027 Build (WDC to 1800 North) | 2030 Build (WDC to 4000 South) |
|---|---|---|---|
| 1800 North (west of WDC) | 3,800 | 13,700 | 11,400 |
| 1800 North (east of WDC) | 4,600 | 7,800 | 7,600 |
| WDC (north of 1800 N) | n/a | n/a | 20,900 |
| WDC (north of SR-193) | n/a | 12,900 | 23,300 |

The table shows that in 2027 with the extension of WDC to 1800 North traffic volumes on the west side of WDC are projected to increase substantially compared to existing volumes. The nearly 14,000 vehicles per day on that segment is approaching the capacity of a two-lane road. It's likely that some intersection improvements may be needed at 4500 West to ensure that the system functions well. A more detailed peak hour intersection analysis is recommended to confirm the need and magnitude of the intersection improvements. Extending WDC farther to the north will reduce 1800 North volumes west of WDC, further improving traffic operations.

# 4 CONCLUSION

A travel modeling analysis was conducted for the extension of West Davis Corridor for both 2050 and near-term conditions. The 2050 analysis shows that for the Interim Build scenario to operate effectively in the future, two travel lanes in each direction will be required. The need to have two lanes in each direction will only increase as the corridor is extended farther to the north.

The near-term conditions analysis shows that when the northern WDC terminus is 1800 North intersection improvements may be needed at 4500 West. A peak hour intersection analysis is recommended to confirm the need and magnitude of the intersection improvements.

## Appendix B - NOISE RESOURCE

# Traffic Noise Report

## SR-177; SR-193 to 1800 North

Project No. S-R199(381) PIN 20927

*Prepared for:*

UDOT Keeping Utah Moving

*Prepared by:*

avenue | CONSULTANTS

December 20, 2024

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# 1 INTRODUCTION

This report evaluates the potential traffic-generated noise impacts from the Proposed Action, which would construct a new four-lane highway, State Route (SR) 177, in West Point, Davis County, Utah.

This report documents the traffic noise impacts analysis and the noise abatement ana lysis for the Proposed Action. The analyses in this report are consistent with the Utah Department of Transportation (UDOT) *Noise Abatement Policy 08A2-01* and 23 Code of Federal Regulations (CFR) 772.

The noise study area, hereafter referred to as the study area, encompasses all noise-sensitive land uses that could be affected by the Proposed Action (see Figure 1). Noise-sensitive land uses in the study area include single-family homes, four churches, two golf courses, a cemetery, an outdoor sports field, and a park.

# 2 APPLICABILITY

A traffic noise study is required because 1) the Proposed Action meets the definition of a Type I Project, and 2) noise-sensitive land use activities exist in proximity to the Proposed Action. Type I projects are those that include any of the following (UDOT 2020):

- The construction of a highway on new location; or a substantial horizontal alteration or substantial vertical alteration of an existing highway; or
- The addition of a through-traffic lane, the addition of a through-traffic lane that functions as a High Occupancy Vehicle (HOV) lane, High Occupancy/Toll (HOT) lane, bus lane, or climbing lane; or
- The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane; or
- The addition or relocation of interchange lanes or ramps added to a quadrant to complete a partial interchange; or
- Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or
- The addition of a new or substantial alteration of a weigh station, rest stop, ride share lot, or toll plaza.

The Federal Highway Administration (FHWA) has established Noise Abatement Criteria (NAC) for several land use activities. The FHWA's noise criteria are based on sound levels that impact nearby properties, also known as receptors, with primary consideration given to outdoor areas where frequent human use occurs. NAC are described in terms of the hourly equivalent A-weighted decibel, or dBA (see Section 3.2*, Decibels and Equivalent Sound Level*, for more information about dBA).

UDOT has developed a noise abatement policy that is consistent with FHWA noise abatement requirements in 23 CFR 772 and establishes UDOT-specific NAC for each land use category (see Table 1). Noise impact and abatement analyses are required for Land Use Activity Categories A, B, C, D, and E only when development exists or has been permitted. Land Use Activity Categories F and G include lands that are not sensitive to traffic noise; therefore, impact criteria do not exist for these categories and a noise impact analysis is not required. A traffic noise impact occurs when 1) the future worst-case noise level is equal to or greater than the UDOT NAC for specified land use categories, or 2) the future worst-case noise level is greater than or equal to an increase of 10 dBA over the existing noise level (UDOT 2020). For this analysis, the future condition is 2050.

**Figure 1. Study Area and Noise-Sensitive Land Uses**

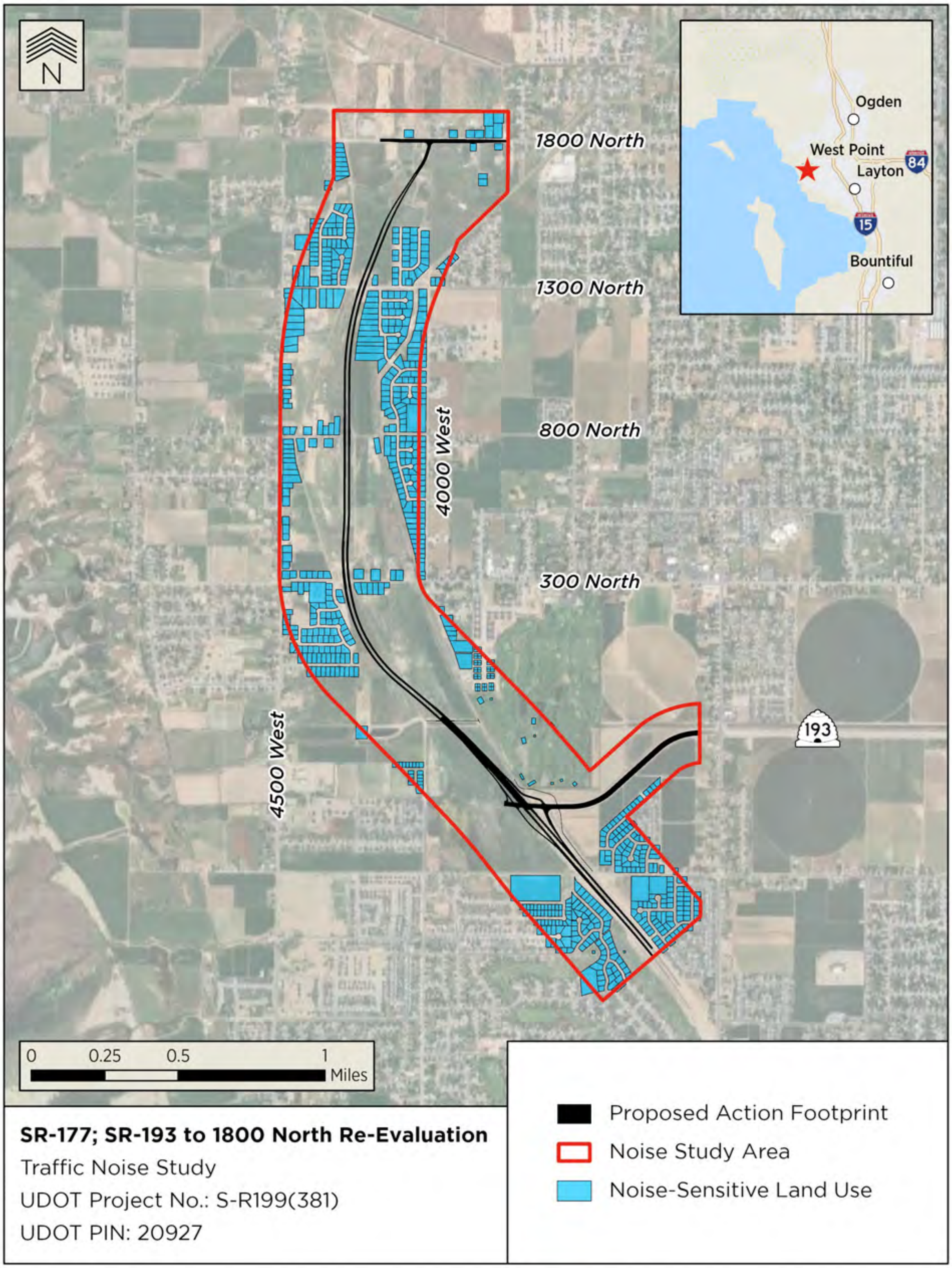


**Table 1. Noise Abatement Criteria[1]**

| Activity Category | FHWA Criteria Leq[2](h) | UDOT Criteria Leq(h)[3] | Description of Activity |
|---|---|---|---|
| A | 57 (Exterior) | 56 (Exterior) | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| B | 67 (Exterior) | 66 (Exterior) | Residential. |
| C | 67 (Exterior) | 66 (Exterior) | Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings. |
| D | 52 (Interior) | 51 (Interior) | Auditoriums, daycare centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios. |
| E | 72 (Exterior) | 71 (Exterior) | Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A–D or F. |
| F | --- | --- | Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing. |
| G | --- | --- | Undeveloped lands that are not permitted. |

*Source: UDOT 2020*

*[1] Hourly A-Weighted Sound Level Decibels (dBA).*

*[2] Leq = The average sound energy over a specified period.*

*[3] Hourly A-weighted sound level in decibels reflecting a 1 dBA "approach" value below 23 CFR 772 values.*

# 3 FUNDAMENTALS OF TRAFFIC NOISE

This section provides a brief overview of sound, how it is measured, and how it spreads between the noise source (e.g., vehicles) and the receiver (e.g., the human ear).

## 3.1 Sound, Noise, and Acoustics

Sound is produced by the vibration of sound pressure waves in the air. Noise is simply unwanted, loud, or annoying sound. Acoustics, or how sound is transmitted, consist of a path between the sound source and a receiver. The following factors determine the sound level and characteristics of the noise perceived by the receiver:

- The loudness (i.e., pressure) of the source.
- Ground absorption.

- Obstructions between the sound source and receiver which are natural (e.g., hills or densely wooded areas) or human-made (e.g., noise barriers, rows of houses, or large buildings).
- Atmospheric factors (e.g., temperature, humidity, wind, etc.) which affect the path between the sound/noise source and a receiver.

## 3.2 Decibels and Equivalent Sound Level

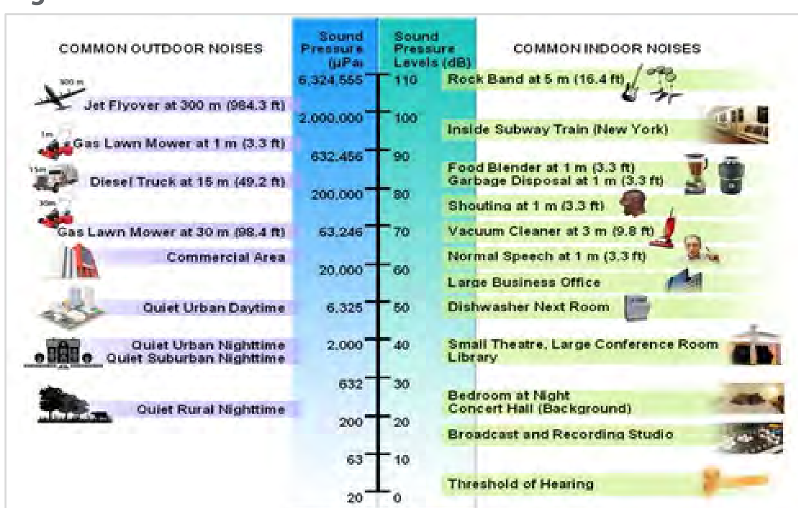
A decibel (dB) is a logarithmic unit used to measure sound-pressure levels. Because decibels are logarithmic, the sound pressure cannot be added or subtracted through ordinary arithmetic (e.g., 1+1=2). Under the decibel scale, a doubling of sound energy corresponds to a three-decibel increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three decibels higher than one source under the same conditions. For example, if one vehicle produces 70 decibels when it passes an observer, two vehicles passing simultaneously would produce 73 decibels, not 140 decibels.

The decibel scale alone does not adequately characterize how humans perceive noise. This is because sound is composed of various frequencies, but the human ear does not respond to all frequencies. When measuring highway noise levels, frequencies not detectable by the human ear must be filtered. Studies have shown that the A-scale best approximates the frequency response of the human ear. Therefore, highway sound levels are reported in an A-weighted decibel, or dBA. Figure 2 illustrates the typical dBA for common noise levels.

Although a three-decibel increase corresponds to a doubling of sound energy, the human ear barely perceives this change.

In general, a five-decibel change is distinctly noticeable, and the human ear perceives a 10-decibel change as doubling the sound. Therefore, a doubling of sound energy (i.e., three-decibel increase), such as by doubling the amount of traffic on a highway, would generally be perceived as barely detectable.

**Figure 2. Common Noise Levels**




*Source: FHWA 2018a*

Daily sound levels fluctuate over time. UDOT uses an equivalent sound level, also known as Leq, to account for these variations. Leq is the average sound energy over a specified period. In other words, Leq is a steady-state sound level with the same acoustical energy as the time-varying sound that occurs during the same period. UDOT and the FHWA use an NAC that is a one-hour, A-weighted equivalent sound level, which is the average dBA occurring for one hour.

## 3.3 Sound Propagation

Sound propagation is the path by which sound from a source travel to a receiver. This is often referred to as the source-path-receiver concept. Geometric spreading, ground absorption, atmospheric effects, and shielding influence how a receiver perceives sound from a source. Each of these factors is described below.

#### GEOMETRIC SPREADING

Sound waves from a local point source spread in a uniform spherical pattern. As the sound wave extends from the point source, the sound level decreases by six dB each time the distance is doubled. However, an observer along a highway is usually within the hearing range of several vehicles (i.e., several point sources), not just one. Because of this, highways have several localized point sources along a defined path and, therefore, are treated as a line source to approximate the effect of several point sources. Unlike a single point source, sound from a line source spreads outward in a semi-cylindrical pattern, which produces a three-decibel decrease—compared to a six-decibel decrease—for each doubling of distance (FHWA 1980).

#### GROUND ABSORPTION

The sound path from a highway to a receiver is usually close to the ground (typically within nine to 10 feet). In addition to geometric spreading, the ground type—soft versus hard—can influence sound level reduction. Soft ground, such as plowed farmland, grass, or crops, absorbs sound waves and increases the drop-off rate by 1.5 dB for each doubling of distance. When added to the semi-spherical rate, the excess ground absorption results in a total drop-off rate of 4.5 dB each time the distance is doubled. Hard ground, such as a paved parking lot, reflects sound waves. Similarly, a body of water also reflects sound waves. Because of this reflection, excess ground absorption is not added to the drop-off rate. In general, the 4.5 dB drop-off rate is used in traffic noise analyses (FHWA 2011).

#### ATMOSPHERIC EFFECTS

Atmospheric factors, including air temperature, humidity, and wind, influence sound wave behavior and how the human ear perceives sound levels. For example, receivers downwind from a source can be exposed to increased noise levels relative to calm conditions, while locations upwind can have lowered noise levels. Sound levels can also increase over long distances from a highway because of atmospheric temperature inversions; that is, when temperatures are warmer at higher elevations compared to ground temperatures. In general, traffic noise analyses assume neutral atmospheric conditions because abnormal atmospheric conditions, such as high winds, heavy rain, and high humidity, are generally temporary (FHWA 2018b).

#### SHIELDING

Shielding refers to large objects or barriers between a noise source and a receiver. Natural terrain features (e.g., hills), and human-made features (e.g., buildings, walls, and berms), can substantially reduce noise levels at the receptor. The amount of reduction provided by shielding depends on the size of the object and the frequency content of the noise source. Walls are the most common object constructed between a highway and a receptor to reduce noise.

# 4 NOISE ABATEMENT

If a noise impact is identified, specific conditions must be met before traffic noise abatement will be implemented. Noise mitigation must be considered *feasible* and *reasonable*.

## 4.1 Feasibility

UDOT's policy requires consideration of the following factors to determine if mitigation is *feasible* (UDOT 2020):

- **Engineering considerations:** Engineering considerations such as safety, presence of cross streets, sight distance, access to adjacent properties, barrier height, topography, drainage, utilities, maintenance access, and maintenance of the abatement measure must be considered as part of establishing feasibility. Noise abatement measures are not intended to serve as privacy fences or safety barriers. Abatement measures installed on structures (i.e., bridges) will not exceed 10 feet in height measured from the top of the deck or roadway to the top of the noise wall. Noise walls will not be installed on structures that require retrofitting to accommodate the noise abatement measure. Noise abatement measures will be considered if the project meets the criteria established in this policy if structure replacement is included as part of the project. Abatement measures shall be consistent with the general American Association of State Highway and Transportation Officials (AASHTO) design principles.

- **Safety on Urban Non-Access Controlled Roadways:** To avoid a damaged barrier from becoming a safety hazard in the event of a failure, barrier height shall be no greater than the distance from the back of curb to the face of proposed barrier.
- **Acoustic Feasibility:** Noise abatement must be considered acoustically feasible. This is defined as achieving at least a five-dBA highway traffic noise reduction for at least 50 percent of front-row receptors.

Failure to meet one of the above factors will result in the noise abatement measure being deemed not *feasible* and, therefore, not included in the project.

## 4.2 Reasonableness

The factors to determine if mitigation is *reasonable* include (UDOT 2020):

- **Noise Reduction Design Goal:** UDOT defines the noise reduction design goal as a minimum noise reduction from proposed abatement measures to be seven-dBA or greater for at least 35 percent of front-row receptors. Per 23 CFR 772, no abatement measure shall be deemed reasonable if the noise reduction design goal cannot be achieved.
- **Cost Effectiveness**: The cost of noise abatement measures must be deemed reasonable to be included in the project. Allowable noise abatement costs are based on a fixed unit cost of $20 per square foot, multiplied by the height and length of the barrier, plus the cost of additional right-of-way, utility relocations, and any other items associated with the abatement measure that are critical to safety or otherwise only necessary to accommodate the barrier.

  The cost effectiveness of abatement is determined by analyzing the cost of a barrier that would provide a noise reduction of five or more dBA for a receptor. A *reasonable* cost is considered to be a maximum of $30,000 per benefited receptor (Activity Category B - Residential) or $360 per linear foot for Activity Categories A, C, D, or E. When a proposed barrier benefits multiple Activity Categories, the reasonable cost per benefited receptor will be combined. If the anticipated cost of the noise abatement measure is less than the allowable cost, then the abatement is deemed reasonable.
- **Viewpoints of Property Owners and Tenants:** As part of the final design phase, UDOT needs to establish whether property owners and tenants are in favor of noise abatement measures that meet the feasible and reasonable criteria. Public balloting would occur so the property owners and tenants can indicate their preference for or against the proposed noise-abatement measures.

Failure to achieve any of the above factors will result in the noise abatement measure being deemed not *reasonable* and, therefore, not included in the project.

# 5 TRAFFIC NOISE MODEL 2.5

Traffic Noise Model 2.5 (TNM 2.5) is a modeling software developed by the FHWA and is used in this study to predict existing (2024) traffic-generated noise and worst-case future (2050) noise conditions. TNM 2.5 uses receivers, which are representative locations of noise-sensitive areas (receptors) to predict noise levels. Receivers may represent one or more receptors based on their proximity to the proposed improvements. TNM 2.5 accounts for vehicle type, vehicle speed, traffic volume, roadway geometry, geometric spreading, ground absorption, atmospheric effects, and shielding (see Section 3.3, *Sound Propagation*). Vehicle types used in TNM 2.5 include:

- Automobiles (Autos): Vehicles with two axles and four tires designed primarily to carry passengers.
- Medium-duty trucks (Medium Trucks): Cargo vehicles with two axles and six tires, including small vans and light trucks.
- Heavy-duty trucks (Heavy Trucks): Cargo vehicles with three or more axles.

TNM 2.5 predicts noise levels for the time of day when vehicle volume, travel speed, and percentage of heavy trucks combine to create the worst (i.e., loudest) traffic noise hour. For the existing condition, vehicle volume is based on peak traffic; for the future condition, vehicle volume is based on Level of Service (LOS) C (see Table 2 and Appendix A, *Traffic Volumes and Vehicle Mix*).

**Table 2. TNM 2.5 Existing (2024) Peak and Future (2050) Level of Service C Traffic Volumes and Vehicle Mix**

| | | Existing Peak (Per Lane) | | Future LOS C (Per Lane) | | Vehicle Mix (Percent) | | |
|---|---|---|---|---|---|---|---|---|
| Road | Direction | Vehicle Volume | Speed (MPH) | Vehicle Volume | Speed (MPH) | Autos | Medium Trucks | Heavy Trucks |
| SR-177 Mainline | NB | n/a | n/a | 1,300 | 75 | 84 | 15 | 1 |
| | SB | n/a | n/a | 1,300 | 75 | 84 | 15 | 1 |
| SR-177 On-Ramps | NB | n/a | n/a | 900 | Variable | 84 | 15 | 1 |
| | SB | n/a | n/a | 900 | Variable | 84 | 15 | 1 |
| SR-177 Off-Ramps | NB | n/a | n/a | 670 | Variable | 84 | 15 | 1 |
| | SB | n/a | n/a | 670 | Variable | 84 | 15 | 1 |
| SR-193 East of SR-177 | EB | 249 | 50 | n/a | n/a | 84 | 14 | 2 |
| | WB | 175 | 50 | n/a | n/a | 84 | 14 | 2 |
| SR-193 West of SR-177 | EB | 400 | 40 | n/a | n/a | 84 | 14 | 2 |
| | WB | 300 | 40 | n/a | n/a | 84 | 14 | 2 |
| 4500 West | NB | 517 | 40 | n/a | n/a | 84 | 14 | 2 |
| | SB | 324 | 40 | n/a | n/a | 84 | 14 | 2 |
| 4000 West | NB | 118 | 35 | n/a | n/a | 85 | 13 | 2 |
| | SB | 88 | 35 | n/a | n/a | 85 | 13 | 2 |
| 3000 West | NB | 182 | 35 | n/a | n/a | 89 | 10 | 1 |
| | SB | 143 | 35 | n/a | n/a | 89 | 10 | 1 |

**Table 2. TNM 2.5 Existing (2024) Peak and Future (2050) Level of Service C Traffic Volumes and Vehicle Mix**

| Road | Direction | Existing Peak (Per Lane) | | Future LOS C (Per Lane) | | Vehicle Mix (Percent) | | |
|---|---|---|---|---|---|---|---|---|
| | | Vehicle Volume | Speed (MPH) | Vehicle Volume | Speed (MPH) | Autos | Medium Trucks | Heavy Trucks |
| 1800 North | EB | 171 | 45 | n/a | n/a | 80 | 18 | 2 |
| | WB | 207 | 45 | n/a | n/a | 80 | 18 | 2 |
| 1300 North | EB | 49 | 35 | n/a | n/a | 89 | 10 | 2 |
| | WB | 50 | 35 | n/a | n/a | 89 | 10 | 2 |
| 800 North | EB | 61 | 35 | n/a | n/a | 74 | 24 | 2 |
| | WB | 53 | 35 | n/a | n/a | 74 | 24 | 2 |
| 300 North | EB | 295 | 40 | n/a | n/a | 79 | 19 | 2 |
| | WB | 218 | 40 | n/a | n/a | 79 | 19 | 2 |
| 700 South | EB | 110 | 35 | n/a | n/a | 84 | 14 | 2 |
| | WB | 202 | 35 | n/a | n/a | 84 | 14 | 2 |

*LOS = Level of Service NB = Northbound SB = Southbound EB = Eastbound WB = Westbound*

*Note: Vehicle volumes marked "n/a" in the Future LOS C condition indicate that the roadway is included in the traffic noise model to produce baseline background noise levels. Future LOS C vehicle volumes were not applied to these roadways because they would not be modified by the Proposed Action.*

# 6 EXISTING NOISE ENVIRONMENT

## 6.1 Noise-Sensitive Land Uses

Noise-sensitive land uses in the study area were identified using current aerial imagery, online tools (e.g., Google Street View), and field verification. City of West Point planning staff provided information for developments that have received (or are expected to receive) a formal building permit prior to the approval of the Environmental Impact Statement (EIS) Re-evaluation; the Craythorn Homestead development at the corner of SR-193 and Cold Springs Road was identified. NAC land use activities in the study area include:

- Single-family homes (Category B).
- Golf courses (Category C).
- Cemetery (Category C).
- Outdoor sports field (Category C).
- Rock Creek Park (Category C).
- Churches (Category D).

For this analysis, noise abatement is considered for outdoor areas (Category B and Category C) and indoor areas (Category D) that would benefit from a lowered noise level.

## 6.2 Field Measurements

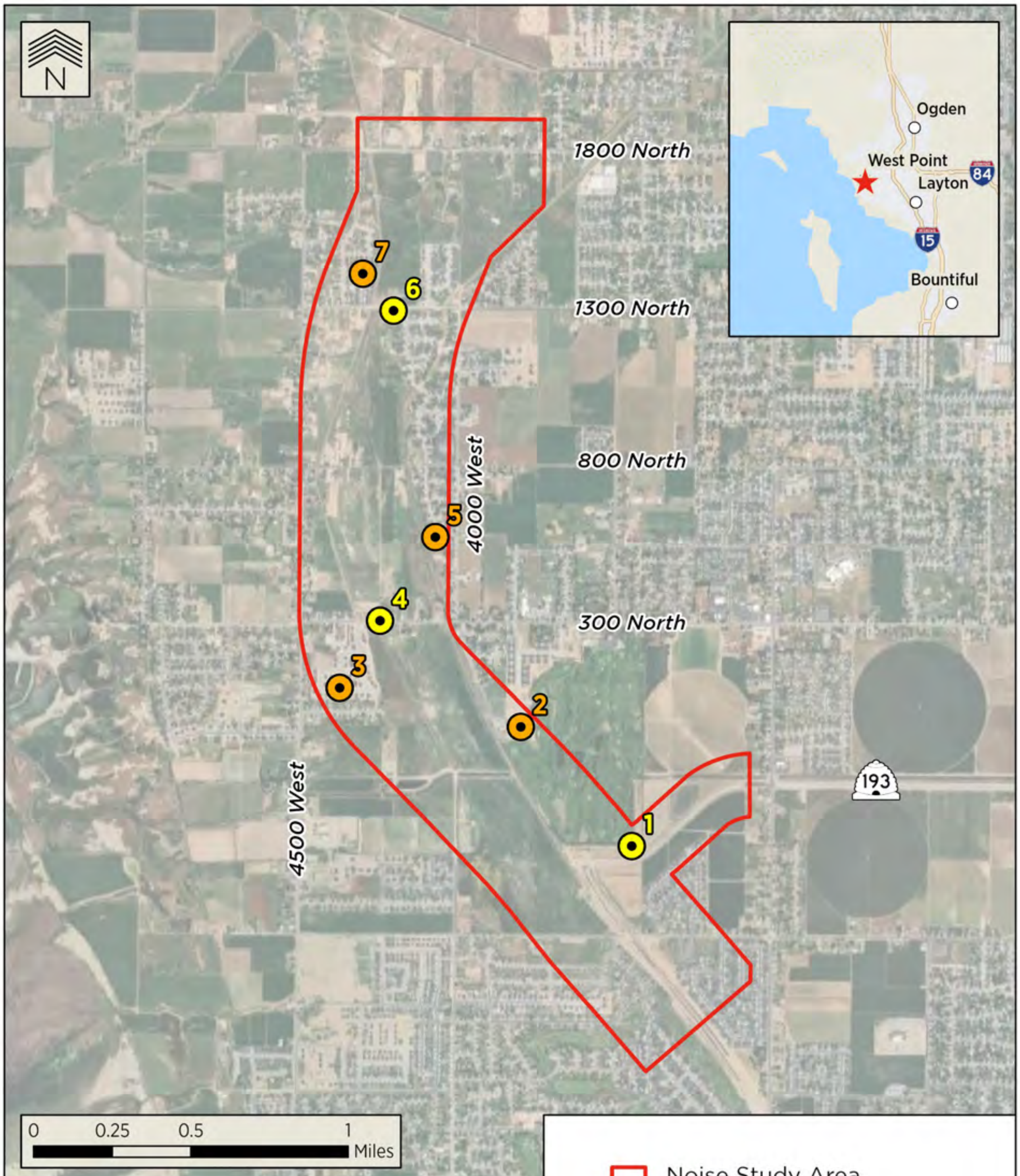
Field measurements are taken to validate the use of TNM 2.5 to predict existing and future noise levels, and to provide background measurements that were applied to receptors where the TNM 2.5-predicted dBA was under the FHWA daytime noise levels of suburban-areas' range of 40 to 50 dBA (FHWA 2018a). Each background measurement site was selected to represent suburban residential areas throughout the study area. A model is valid if predicted noise levels are within three dBA of the field measurements. UDOT selected three short-term validation measurement sites and four short-term background measurement sites to represent the NAC land use activities identified in the study area (see Figure 1, Section 6.1, *Noise Sensitive Land Uses*, and Figure 3). A 20-minute field measurement was taken at each site using a Larson Davis SoundTrack LxT sound level meter (see Appendix B, *Meter Certifications*, for meter calibration certificates, and Appendix C, *Noise Field Measurements*, for measurement dates, times, and field measurement results). At each site, vehicles were counted on a weekday during free-flow conditions and classified as automobiles, medium-duty trucks, and heavy-duty trucks; buses and motorcycles were also counted for validation measurements. The observed travel speeds ranged between 30 and 35 MPH on SR-177, 35 and 40 MPH on 300 North, and 30 MPH on 1300 North. Temperature and wind speed were recorded manually; temperatures ranged from 83°F to 89°F, and sustained wind speeds were not observed.

Field measurement noise levels were compared to the TNM 2.5 predicted noise levels (see Table 3). TNM 2.5 predicted noise levels are within three dBA of the field measurement values; therefore, the model is considered valid.

**Table 3. Field Measurement and TNM 2.5 Predicted Noise Levels**

| Field Measurement Site ID | Field Measurement Noise Level (dBA) | TNM 2.5 Predicted Noise Level (dBA) | Noise Level Difference (dBA) |
|---|---|---|---|
| 1 | 48.0 | 48.8 | -0.8 |
| 4 | 63.8 | 63.9 | -0.1 |
| 6 | 56.4 | 56.0 | 0.4 |

**Figure 3. Field Measurement Sites**




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Noise Study Area

**Field Measurement Type**

Validation

Background

# 7 TRAFFIC NOISE IMPACTS ANALYSIS

The purpose of the traffic noise analysis is to determine which (if any) noise receptors are impacted by traffic noise. A noise impact is defined as a receptor having a noise level greater than or equal to its NAC threshold or receiving an increase of 10 dBA or more over its existing noise level. For the traffic noise analysis, noise impact assessments were performed for 764 receivers representing 764 receptors in the study area (see Exhibit 1, Noise Receptors).

To determine if TNM 2.5 is accurately predicting suburban daytime noise levels in the existing condition, several field background measurements were taken; the average dBA for these measurements was 46 dBA. According to FHWA, suburban daytime noise levels might be in the 40-to-50 dBA range (FHWA 2018a). Since the field background measurement average falls within this range, if existing TNM 2.5 noise levels were below 46 dBA, then they were adjusted to 46 dBA instead of the lower TNM 2.5 noise level.

For the existing condition, outdoor noise levels range from 46 dBA to 65 dBA. Indoor noise levels range from 21 dBA to 37 dBA. Of the 764 receptors in this analysis, none are impacted in the existing condition (see Table 3).

For the future condition (2050), outdoor noise levels range from 46 dBA to 74 dBA. Indoor noise levels range from 25 dBA to 40 dBA. Of the 764 receptors in this analysis, 283 receptors are impacted in the future condition (see Table 3 and Exhibit 1, Noise Receptors):

- 43 receptors would have a noise level greater than or equal to their NAC threshold.
- 282 receptors would receive an increase of 10 dBA or more over their existing noise levels.
- 42 receptors would experience both types of impacts.

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN001 | 1 | B | 66 | 46 | **66** | **20** | **Yes** | **Yes** |
| RN002 | 1 | B | 66 | 46 | 65 | **19** | No | **Yes** |
| RN003 | 1 | B | 66 | 51 | 65 | **14** | No | **Yes** |
| RN004 | 1 | B | 66 | 46 | 65 | **19** | No | **Yes** |
| RN005 | 1 | B | 66 | 46 | 64 | **18** | No | **Yes** |
| RN006 | 1 | B | 66 | 46 | 63 | **17f** | No | **Yes** |
| RN007 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |
| RN008 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN009 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RN010 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RN011 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN012 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN013 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN014 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RN015 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN019 | 1 | B | 66 | 60 | 65 | 5 | No | No |
| RN020 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |
| RN021 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RN022 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RN023 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RN024 | 1 | B | 66 | 47 | 56 | 9 | No | No |
| RN025 | 1 | B | 66 | 60 | 60 | 0 | No | No |
| RN026 | 1 | B | 66 | 51 | 57 | 6 | No | No |
| RN027 | 1 | B | 66 | 51 | 56 | 5 | No | No |
| RN028 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN029 | 1 | B | 66 | 49 | 56 | 7 | No | No |
| RN030 | 1 | B | 66 | 47 | 56 | 9 | No | No |
| RN031 | 1 | B | 66 | 53 | 57 | 4 | No | No |
| RN032 | 1 | B | 66 | 54 | 57 | 3 | No | No |
| RN033 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN034 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN035 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN036 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN037 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN038 | 1 | B | 66 | 48 | 56 | 8 | No | No |
| RN039 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN040 | 1 | B | 66 | 47 | 56 | 9 | No | No |
| RN041 | 1 | B | 66 | 52 | 55 | 3 | No | No |
| RN042 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN043 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RN044 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN045 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN046 | 1 | B | 66 | 48 | 55 | 7 | No | No |
| RN047 | 1 | B | 66 | 57 | 58 | 1 | No | No |
| RN048 | 1 | B | 66 | 54 | 62 | 8 | No | No |
| RN049 | 1 | B | 66 | 52 | 59 | 7 | No | No |
| RN050 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RN051 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN052 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN053 | 1 | B | 66 | 49 | 52 | 3 | No | No |
| RN054 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RN055 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN056 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN057 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN058 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN059 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RN060 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN061 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN062 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN063 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RN064 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN065 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN066 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN067 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN068 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN069 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN070 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RN071 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN072 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN073 | 1 | B | 66 | 46 | 55 | 9 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN074 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN075 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN076 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN077 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RN078 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN079 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN080 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RN081 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RN082 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN083 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN084 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN085 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN086 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN087 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN088 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN089 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN090 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN091 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN092 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN093 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN094 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN095 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN096 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN097 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN098 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RN099 | 1 | B | 66 | 49 | 53 | 4 | No | No |
| RN100 | 1 | B | 66 | 53 | 55 | 2 | No | No |
| RN101 | 1 | B | 66 | 61 | 61 | 0 | No | No |
| RN102 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN103 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN104 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RN105 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RN106 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RN107 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN108 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN109 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RN110 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RN111 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RN112 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN113 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |
| RN114 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RN115 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RN116 | 1 | B | 66 | 46 | 64 | **18** | No | **Yes** |
| RN117 | 1 | B | 66 | 46 | **67** | **21** | **Yes** | **Yes** |
| RN118 | 1 | B | 66 | 46 | **67** | **21** | **Yes** | **Yes** |
| RN119 | 1 | B | 66 | 46 | **68** | **22** | **Yes** | **Yes** |
| RN120 | 1 | B | 66 | 46 | **67** | **21** | **Yes** | **Yes** |
| RN121 | 1 | B | 66 | 46 | **66** | **20** | **Yes** | **Yes** |
| RN122 | 1 | B | 66 | 46 | **68** | **22** | **Yes** | **Yes** |
| RN123 | 1 | B | 66 | 48 | **70** | **22** | **Yes** | **Yes** |
| RN124 | 1 | B | 66 | 46 | **68** | **22** | **Yes** | **Yes** |
| RN125 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RN126 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |
| RN127 | 1 | B | 66 | 46 | 64 | **18** | No | **Yes** |
| RN128 | 1 | B | 66 | 46 | 65 | **19** | No | **Yes** |
| RN129 | 1 | B | 66 | 46 | **66** | **20** | **Yes** | **Yes** |
| RN130 | 1 | B | 66 | 46 | **66** | **20** | **Yes** | **Yes** |
| RN131 | 1 | B | 66 | 46 | **69** | **23** | **Yes** | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN132 | 1 | B | 66 | 46 | **69** | **23** | **Yes** | **Yes** |
| RN133 | 1 | B | 66 | 46 | **70** | **24** | **Yes** | **Yes** |
| RN137 | 1 | B | 66 | 59 | 64 | 5 | No | No |
| RN138 | 1 | B | 66 | 62 | 64 | 2 | No | No |
| RN139 | 1 | B | 66 | 62 | 63 | 1 | No | No |
| RN140 | 1 | B | 66 | 61 | 62 | 1 | No | No |
| RN141 | 1 | B | 66 | 59 | 60 | 1 | No | No |
| RN142 | 1 | B | 66 | 48 | 55 | 7 | No | No |
| RN143 | 1 | B | 66 | 60 | 61 | 1 | No | No |
| RN144 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN145 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RN146 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN147 | 1 | B | 66 | 48 | 55 | 7 | No | No |
| RN148 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN149 | 1 | D | 51 | 21 | 25 | 4 | No | No |
| RN150 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN151 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN152 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RN153 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN154 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN155 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RN156 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RN157 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN158 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN159 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RN160 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RN161 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN162 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN163 | 1 | B | 66 | 46 | 46 | 0 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN164 | 1 | B | 66 | 48 | 49 | 1 | No | No |
| RN165 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN166 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RN167 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN168 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RN169 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RN170 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RN171 | 1 | B | 66 | 49 | 50 | 1 | No | No |
| RN172 | 1 | B | 66 | 52 | 53 | 1 | No | No |
| RN173 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN174 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN175 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN176 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN177 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN178 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN179 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN180 | 1 | B | 66 | 47 | 50 | 3 | No | No |
| RN181 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN182 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN183 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN184 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN185 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN186 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RN187 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN188 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN189 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN190 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN191 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RN192 | 1 | B | 66 | 46 | 50 | 4 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN193 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN194 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN195 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RN196 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN197 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN198 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN199 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RN200 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN201 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN202 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN203 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RN204 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN205 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN206 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RN207 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN208 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN209 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RN210 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RN211 | 1 | B | 66 | 51 | 64 | **13** | No | **Yes** |
| RN212 | 1 | B | 66 | 51 | 63 | **12** | No | **Yes** |
| RN213 | 1 | B | 66 | 51 | 61 | 10 | No | **Yes** |
| RN214 | 1 | B | 66 | 51 | 59 | 8 | No | No |
| RN215 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN216 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN217 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RN218 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RN219 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN220 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RN221 | 1 | B | 66 | 46 | 54 | 8 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RN222 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN223 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RN224 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN225 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN226 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN227 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RN228 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RN229 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN230 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RN231 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN232 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RN233 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN234 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN235 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RN236 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN237 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RN238 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RN239 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RN240 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RN241 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RN242 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RN243 | 1 | B | 66 | 46 | 64 | **18** | No | **Yes** |
| RN244 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RN245 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RN246 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM001 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM002 | 1 | B | 66 | 46 | **66** | **20** | **Yes** | **Yes** |
| RM003 | 1 | B | 66 | 46 | **68** | **22** | **Yes** | **Yes** |
| RM004 | 1 | B | 66 | 46 | **67** | **21** | **Yes** | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM005 | 1 | B | 66 | 46 | **68** | **22** | **Yes** | **Yes** |
| RM006 | 1 | B | 66 | 46 | **68** | **22** | **Yes** | **Yes** |
| RM007 | 1 | B | 66 | 46 | **68** | **22** | **Yes** | **Yes** |
| RM008 | 1 | B | 66 | 46 | 65 | **19** | No | **Yes** |
| RM009 | 1 | B | 66 | 47 | **67** | **20** | **Yes** | **Yes** |
| RM010 | 1 | B | 66 | 50 | **67** | **17** | **Yes** | **Yes** |
| RM011 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RM012 | 1 | B | 66 | 46 | 65 | **19** | No | **Yes** |
| RM013 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM014 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM015 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM016 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM017 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM018 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM019 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM020 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM021 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM022 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM023 | 1 | B | 66 | 46 | 64 | **18** | No | **Yes** |
| RM024 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RM025 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RM026 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM027 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM028 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM029 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM030 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM031 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM032 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM033 | 1 | B | 66 | 46 | 52 | 6 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM034 | 1 | B | 66 | 46 | **66** | **20** | **Yes** | **Yes** |
| RM035 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM036 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM037 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM038 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM039 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM040 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RM041 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RM042 | 1 | B | 66 | 47 | 50 | 3 | No | No |
| RM043 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM044 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RM045 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RM046 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM047 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM048 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM049 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM050 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM051 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM052 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RM053 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM054 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM055 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM056 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RM057 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RM058 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM059 | 1 | B | 66 | 50 | 53 | 3 | No | No |
| RM060 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM061 | 1 | B | 66 | 49 | 53 | 4 | No | No |
| RM062 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM063 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RM064 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM065 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM066 | 1 | B | 66 | 49 | 53 | 4 | No | No |
| RM067 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RM068 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM069 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM070 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM071 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM072 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM073 | 1 | B | 66 | 50 | 54 | 4 | No | No |
| RM074 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RM075 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM076 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |
| RM077 | 1 | B | 66 | 47 | **66** | **19** | **Yes** | **Yes** |
| RM078 | 1 | B | 66 | 51 | **66** | **15** | **Yes** | **Yes** |
| RM079 | 1 | B | 66 | 58 | **67** | 9 | **Yes** | No |
| RM080 | 1 | D | 51 | 37 | 40 | 3 | No | No |
| RM081 | 1 | B | 66 | 53 | 56 | 3 | No | No |
| RM082 | 1 | B | 66 | 47 | 52 | 5 | No | No |
| RM083 | 1 | B | 66 | 52 | 54 | 2 | No | No |
| RM084 | 1 | B | 66 | 54 | 56 | 2 | No | No |
| RM085 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM086 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RM087 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM088 | 1 | B | 66 | 57 | 58 | 1 | No | No |
| RM089 | 1 | B | 66 | 58 | 59 | 1 | No | No |
| RM090 | 1 | B | 66 | 59 | 59 | 0 | No | No |
| RM091 | 1 | B | 66 | 50 | 55 | 5 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM092 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM093 | 1 | B | 66 | 48 | 56 | 8 | No | No |
| RM094 | 1 | B | 66 | 48 | 55 | 7 | No | No |
| RM095 | 1 | B | 66 | 49 | 55 | 6 | No | No |
| RM096 | 1 | B | 66 | 51 | 57 | 6 | No | No |
| RM097 | 1 | B | 66 | 49 | 56 | 7 | No | No |
| RM098 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM099 | 1 | B | 66 | 50 | 55 | 5 | No | No |
| RM100 | 1 | B | 66 | 50 | 55 | 5 | No | No |
| RM101 | 1 | B | 66 | 47 | 54 | 7 | No | No |
| RM102 | 1 | B | 66 | 48 | 54 | 6 | No | No |
| RM103 | 1 | B | 66 | 54 | 56 | 2 | No | No |
| RM104 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM105 | 1 | B | 66 | 48 | 55 | 7 | No | No |
| RM106 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RM107 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM108 | 1 | B | 66 | 48 | 53 | 5 | No | No |
| RM109 | 1 | B | 66 | 60 | 60 | 0 | No | No |
| RM110 | 1 | C | 66 | 55 | 63 | 8 | No | No |
| RM111 | 1 | C | 66 | 53 | 63 | 10 | No | **Yes** |
| RM112 | 1 | C | 66 | 53 | 65 | **12** | No | **Yes** |
| RM113 | 1 | C | 66 | 51 | **68** | **17** | **Yes** | **Yes** |
| RM114 | 1 | C | 66 | 49 | **69** | **20** | **Yes** | **Yes** |
| RM115 | 1 | C | 66 | 46 | 61 | **15** | No | **Yes** |
| RM116 | 1 | C | 66 | 46 | 58 | **12** | No | **Yes** |
| RM117 | 1 | C | 66 | 46 | 55 | 9 | No | No |
| RM118 | 1 | C | 66 | 46 | 56 | 10 | No | **Yes** |
| RM119 | 1 | C | 66 | 46 | 61 | **15** | No | **Yes** |
| RM120 | 1 | C | 66 | 46 | 63 | **17** | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM121 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RM122 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM123 | 1 | C | 66 | 46 | 57 | **11** | No | **Yes** |
| RM124 | 1 | C | 66 | 46 | 56 | 10 | No | **Yes** |
| RM125 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM126 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM127 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM128 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM129 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM130 | 1 | B | 66 | 51 | **66** | **15** | **Yes** | **Yes** |
| RM131 | 1 | B | 66 | 46 | **67** | **21** | **Yes** | **Yes** |
| RM132 | 1 | B | 66 | 48 | 59 | **11** | No | **Yes** |
| RM133 | 1 | B | 66 | 48 | 59 | **11** | No | **Yes** |
| RM134 | 1 | B | 66 | 48 | 59 | **11** | No | **Yes** |
| RM135 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RM136 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RM137 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RM138 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM139 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM140 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM141 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM142 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM143 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM144 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RM145 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RM146 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RM147 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RM148 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RM149 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM150 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |
| RM151 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |
| RM152 | 1 | B | 66 | 46 | 63 | **17** | No | **Yes** |
| RM153 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM154 | 1 | B | 66 | 47 | 64 | **17** | No | **Yes** |
| RM155 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RM156 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RM157 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM158 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RM159 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RM160 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM161 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM162 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM163 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM164 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM165 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RM166 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM167 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM168 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM169 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RM170 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM171 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM172 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM173 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM174 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM175 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM176 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM177 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM178 | 1 | B | 66 | 46 | 52 | 6 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM179 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM180 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM181 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM182 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM183 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM184 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM185 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM186 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM187 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM188 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM189 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM190 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RM191 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM192 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM193 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM194 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM195 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM196 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM197 | 1 | B | 66 | 47 | 64 | **17** | No | **Yes** |
| RM198 | 1 | B | 66 | 46 | 62 | **16** | No | **Yes** |
| RM199 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM200 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RM201 | 1 | B | 66 | 50 | 58 | 8 | No | No |
| RM202 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM203 | 1 | B | 66 | 47 | 58 | **11** | No | **Yes** |
| RM204 | 1 | B | 66 | 47 | 56 | 9 | No | No |
| RM205 | 1 | B | 66 | 64 | 65 | 1 | No | No |
| RM206 | 1 | B | 66 | 57 | 61 | 4 | No | No |
| RM207 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM208 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RM209 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RM210 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM211 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RM212 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM213 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RM214 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RM215 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM216 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RM217 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RM218 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM219 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RM220 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM221 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM222 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM223 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM224 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RM225 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM226 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RM227 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM228 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RM229 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM230 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM231 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM232 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM233 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM234 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RM235 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RM236 | 1 | B | 66 | 46 | 46 | 0 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RM237 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM238 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RM239 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RM240 | 1 | B | 66 | 52 | 56 | 4 | No | No |
| RM241 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RM242 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RM243 | 1 | B | 66 | 52 | 52 | 0 | No | No |
| RS036 | 1 | B | 66 | 65 | 65 | 0 | No | No |
| RS037 | 1 | B | 66 | 58 | 61 | 3 | No | No |
| RS038 | 1 | B | 66 | 55 | 59 | 4 | No | No |
| RS039 | 1 | B | 66 | 53 | 59 | 6 | No | No |
| RS040 | 1 | B | 66 | 51 | 59 | 8 | No | No |
| RS041 | 1 | B | 66 | 49 | 58 | 9 | No | No |
| RS117 | 1 | B | 66 | 52 | 57 | 5 | No | No |
| RS118 | 1 | B | 66 | 50 | 57 | 7 | No | No |
| RS119 | 1 | B | 66 | 47 | 56 | 9 | No | No |
| RS120 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS135 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS136 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS137 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS138 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RS139 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RS140 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RS141 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RS142 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RS143 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RS144 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS145 | 1 | C | 66 | 49 | 61 | **12** | No | **Yes** |
| RS146 | 1 | B | 66 | 55 | **66** | **11** | **Yes** | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS147 | 1 | B | 66 | 53 | **66** | **13** | **Yes** | **Yes** |
| RS148 | 1 | B | 66 | 54 | 65 | **11** | No | **Yes** |
| RS149 | 1 | B | 66 | 54 | 64 | 10 | No | **Yes** |
| RS150 | 1 | B | 66 | 55 | 65 | 10 | No | **Yes** |
| RS151 | 1 | B | 66 | 55 | **66** | **11** | **Yes** | **Yes** |
| RS152 | 1 | B | 66 | 55 | **67** | **12** | **Yes** | **Yes** |
| RS153 | 1 | B | 66 | 55 | **68** | **13** | **Yes** | **Yes** |
| RS154 | 1 | B | 66 | 55 | **68** | **13** | **Yes** | **Yes** |
| RS155 | 1 | B | 66 | 53 | **66** | **13** | **Yes** | **Yes** |
| RS156 | 1 | B | 66 | 51 | 64 | **13** | No | **Yes** |
| RS157 | 1 | B | 66 | 49 | 62 | **13** | No | **Yes** |
| RS158 | 1 | B | 66 | 50 | 63 | **13** | No | **Yes** |
| RS159 | 1 | B | 66 | 49 | 63 | **14** | No | **Yes** |
| RS160 | 1 | B | 66 | 49 | 62 | **13** | No | **Yes** |
| RS161 | 1 | C | 66 | 52 | 64 | **12** | No | **Yes** |
| RS162 | 1 | B | 66 | 48 | 61 | **13** | No | **Yes** |
| RS163 | 1 | B | 66 | 48 | 61 | **13** | No | **Yes** |
| RS164 | 1 | B | 66 | 48 | 60 | **12** | No | **Yes** |
| RS165 | 1 | B | 66 | 48 | 60 | **12** | No | **Yes** |
| RS166 | 1 | B | 66 | 47 | 59 | **12** | No | **Yes** |
| RS167 | 1 | D | 51 | 21 | 26 | 5 | No | No |
| RS168 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS169 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS170 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS171 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS172 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS173 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS174 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS175 | 1 | B | 66 | 47 | 60 | **13** | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS176 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS177 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS178 | 1 | B | 66 | 49 | 61 | **12** | No | **Yes** |
| RS179 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS180 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS181 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS182 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RS183 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS184 | 1 | C | 66 | 46 | 53 | 7 | No | No |
| RS185 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS186 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS187 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS188 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS189 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS190 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS191 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS192 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS193 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS194 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS195 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS196 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS197 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS198 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS199 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS200 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS201 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS202 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS203 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS204 | 1 | B | 66 | 46 | 49 | 3 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS205 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS206 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS207 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS208 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RS209 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS210 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS211 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS212 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS213 | 1 | B | 66 | 47 | 61 | **14** | No | **Yes** |
| RS214 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS215 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS216 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS217 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS218 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS219 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS220 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS221 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS222 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS223 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS224 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS225 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS226 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS227 | 1 | B | 66 | 48 | 62 | **14** | No | **Yes** |
| RS228 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS229 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS230 | 1 | B | 66 | 47 | 61 | **14** | No | **Yes** |
| RS231 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS232 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS233 | 1 | B | 66 | 46 | 49 | 3 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS234 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS235 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS236 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS237 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS238 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS239 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS240 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS241 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS242 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS243 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS244 | 1 | B | 66 | 47 | 60 | **13** | No | **Yes** |
| RS245 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS246 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS247 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS248 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS249 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS250 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS251 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS252 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS253 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS254 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS255 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS256 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS257 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RS258 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RS259 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RS260 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RS261 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RS262 | 1 | B | 66 | 47 | 61 | **14** | No | **Yes** |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS263 | 1 | B | 66 | 48 | 61 | **13** | No | **Yes** |
| RS264 | 1 | B | 66 | 51 | 63 | **12** | No | **Yes** |
| RS265 | 1 | B | 66 | 51 | 62 | **11** | No | **Yes** |
| RS266 | 1 | B | 66 | 51 | 63 | **12** | No | **Yes** |
| RS267 | 1 | B | 66 | 51 | 63 | **12** | No | **Yes** |
| RS268 | 1 | B | 66 | 51 | 63 | **12** | No | **Yes** |
| RS269 | 1 | B | 66 | 52 | 64 | **12** | No | **Yes** |
| RS270 | 1 | B | 66 | 52 | 65 | **13** | No | **Yes** |
| RS271 | 1 | B | 66 | 53 | **66** | **13** | **Yes** | **Yes** |
| RS272 | 1 | B | 66 | 56 | **69** | **13** | **Yes** | **Yes** |
| RS273 | 1 | B | 66 | 61 | **74** | **13** | **Yes** | **Yes** |
| RS274 | 1 | B | 66 | 56 | **70** | **14** | **Yes** | **Yes** |
| RS275 | 1 | D | 51 | 34 | 39 | 5 | No | No |
| RS276 | 1 | B | 66 | 52 | **66** | **14** | **Yes** | **Yes** |
| RS277 | 1 | B | 66 | 52 | **66** | **14** | **Yes** | **Yes** |
| RS278 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RS279 | 1 | B | 66 | 50 | 63 | **13** | No | **Yes** |
| RS280 | 1 | B | 66 | 52 | 61 | 9 | No | No |
| RS281 | 1 | B | 66 | 53 | 61 | 8 | No | No |
| RS282 | 1 | B | 66 | 53 | 60 | 7 | No | No |
| RS283 | 1 | B | 66 | 53 | 60 | 7 | No | No |
| RS284 | 1 | B | 66 | 54 | 60 | 6 | No | No |
| RS285 | 1 | B | 66 | 54 | 61 | 7 | No | No |
| RS286 | 1 | B | 66 | 54 | 60 | 6 | No | No |
| RS287 | 1 | B | 66 | 54 | 60 | 6 | No | No |
| RS288 | 1 | B | 66 | 55 | 62 | 7 | No | No |
| RS289 | 1 | B | 66 | 55 | 62 | 7 | No | No |
| RS290 | 1 | B | 66 | 55 | 61 | 6 | No | No |
| RS291 | 1 | B | 66 | 55 | 61 | 6 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS292 | 1 | B | 66 | 55 | 61 | 6 | No | No |
| RS293 | 1 | B | 66 | 54 | 61 | 7 | No | No |
| RS294 | 1 | B | 66 | 54 | 59 | 5 | No | No |
| RS295 | 1 | B | 66 | 54 | 60 | 6 | No | No |
| RS296 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS297 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS298 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS299 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS300 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS301 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS302 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS303 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS304 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS305 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RS306 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS307 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS308 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RS309 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS310 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS311 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS312 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS313 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS314 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS315 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS316 | 1 | B | 66 | 48 | 61 | **13** | No | **Yes** |
| RS317 | 1 | B | 66 | 46 | 56 | 10 | No | **Yes** |
| RS318 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS319 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS320 | 1 | B | 66 | 46 | 46 | 0 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS321 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS322 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS323 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS324 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS325 | 1 | B | 66 | 49 | 63 | **14** | No | **Yes** |
| RS326 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RS327 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RS328 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS329 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS330 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS331 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS332 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS333 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS334 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RS335 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS336 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS337 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS338 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS339 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS340 | 1 | B | 66 | 46 | 60 | **14** | No | **Yes** |
| RS341 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS342 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RS343 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS344 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS345 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS346 | 1 | B | 66 | 47 | 55 | 8 | No | No |
| RS347 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS348 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS349 | 1 | B | 66 | 52 | 55 | 3 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS350 | 1 | C | 66 | 58 | 59 | 1 | No | No |
| RS351 | 1 | B | 66 | 56 | 58 | 2 | No | No |
| RS352 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS353 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS354 | 1 | B | 66 | 47 | 57 | 10 | No | **Yes** |
| RS355 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS356 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS357 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS358 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS359 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS360 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS361 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS362 | 1 | B | 66 | 48 | 50 | 2 | No | No |
| RS363 | 1 | B | 66 | 48 | 51 | 3 | No | No |
| RS364 | 1 | B | 66 | 52 | 64 | **12** | No | **Yes** |
| RS365 | 1 | B | 66 | 46 | 58 | **12** | No | **Yes** |
| RS366 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS367 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS368 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS369 | 1 | B | 66 | 48 | 62 | **14** | No | **Yes** |
| RS370 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS371 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS372 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS373 | 1 | B | 66 | 46 | 47 | 1 | No | No |
| RS374 | 1 | B | 66 | 50 | 64 | **14** | No | **Yes** |
| RS375 | 1 | B | 66 | 46 | 61 | **15** | No | **Yes** |
| RS376 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS377 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS378 | 1 | B | 66 | 46 | 49 | 3 | No | No |

**Table 4. TNM 2.5 Existing (2024) and Future (2050) Condition Noise Level Results and Impacts**

| Receiver | Receptors Represented | Land Use Activity Category | UDOT NAC (dBA) | Existing Noise Level[1] (dBA) | Future Noise Level[1] (dBA) | Noise Level Difference (dBA) | Impact | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≥ UDOT NAC | ≥ 10 dBA Increase Over Existing |
| RS379 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS380 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS381 | 1 | B | 66 | 46 | 57 | **11** | No | **Yes** |
| RS382 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS383 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS384 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS385 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS386 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS387 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS388 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS389 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS390 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS391 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS392 | 1 | B | 66 | 46 | 46 | 0 | No | No |
| RS393 | 1 | B | 66 | 46 | 59 | **13** | No | **Yes** |
| RS394 | 1 | B | 66 | 46 | 55 | 9 | No | No |
| RS395 | 1 | B | 66 | 46 | 54 | 8 | No | No |
| RS396 | 1 | B | 66 | 46 | 52 | 6 | No | No |
| RS397 | 1 | B | 66 | 46 | 53 | 7 | No | No |
| RS398 | 1 | B | 66 | 46 | 49 | 3 | No | No |
| RS399 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS400 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS401 | 1 | B | 66 | 46 | 50 | 4 | No | No |
| RS402 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS403 | 1 | B | 66 | 46 | 51 | 5 | No | No |
| RS404 | 1 | B | 66 | 46 | 48 | 2 | No | No |
| RS405 | 1 | B | 66 | 46 | 53 | 7 | No | No |

*[1] dBA rounded to the nearest integer.*

# 8 NOISE ABATEMENT ANALYSIS

All impacted receptors are considered for noise abatement analysis. Sections 8.1 through 8.13 discuss the detailed barrier analyses that considered noise abatement for impacted receptors. Each barrier analysis was conducted to determine a recommended barrier height and length at impacted receptors. A recommended barrier would provide sufficient noise reduction (i.e., is acoustically *feasible* and *reasonable*) at an allowable cost, as defined in Section 4, *Noise Abatement*. The following steps were applied for the noise barrier analysis to recommend or not recommend a noise barrier for balloting:

1. Determine the location of the barrier between the traffic noise source and impacted receptors based on engineering considerations.
2. Determine the estimated length of the barrier based on the distance of the end impacted receptors from the outside travel lane of the traffic noise source.
3. Evaluate a range of uniform barrier heights (i.e., a barrier that has the same height across its entire length) and adjust barrier lengths according to the height to meet *feasible* and *reasonable* criteria, including cost effectiveness. The maximum barrier height considered in each barrier analysis is 17 feet, as recommended in UDOT's *2024 Standard Drawings for Road and Bridge Construction* (UDOT 2024). The minimum barrier height is limited either to the minimum barrier height of six feet tall as recommended in UDOT's *2024 Standard Drawings for Road and Bridge Construction*, a barrier that is either not acoustically feasible, or a barrier that does not meet the noise reduction design goal. Barriers between and including the minimum and maximum heights are evaluated to determine if increasing the barrier height would qualify a barrier to be considered both *feasible* and *reasonable*. In general, taller barrier heights will provide a greater noise reduction and will shorten the overall barrier length.

The following sections describe 13 detailed barrier analyses that considered noise abatement (i.e., noise barriers) for impacted receptors.

## 8.1 Noise Barrier 1 – Proposed

This analysis evaluates noise abatement as a noise barrier for 48 impacted receptors represented by receivers RS145–RS166, RS175, RS178, RS179, RS185, RS190, RS199, RS201, RS211–RS213, RS215, RS227–RS230, RS241–RS244, and RS257–RS263 (see Exhibit 1, *Noise Receptors*). Three noise barrier scenarios are included in this analysis:

- A barrier system (Noise Barrier 1 System Analysis) including two barriers with a gap in the middle. A Bureau of Reclamation buried canal is in this gap, and structures cannot be built on this property.
- A single barrier (Noise Barrier 1 North Analysis) for receptors north of the Bureau of Reclamation property.
- A single barrier (Noise Barrier 1 South Analysis) for receptors south of the Bureau of Reclamation property.

### 8.1.1 Noise Barrier 1 System Analysis

The barriers evaluated range in heights from 15 feet to 17 feet, and lengths of 1,819 feet to 1,969 (see Table 5 and Exhibit 2, *Noise Barriers*).

All barriers achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and are therefore acoustically feasible.

All barriers, except for the 15-foot-tall barrier, achieve at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore meet the noise reduction design goal. Therefore, the 15-foot-tall barrier is not evaluated further in this analysis.

All remaining barriers cost less than the $30,000 allowance per benefited receptor for Activity Category B receptors; however, the remaining barriers do not cost less than $360 per linear foot for the Activity Category C receptor. Therefore, the 16-foot-tall and 17-foot-tall barriers are not evaluated further in this analysis.

### 8.1.2 Noise Barrier 1 North Analysis

The barriers evaluated range in heights from 15 feet to 17 feet, and lengths of 1,169 feet to 1,194 feet (see Table 5 and Exhibit 2, *Noise Barriers*).

All barriers achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and are therefore acoustically feasible.

All barriers, except for the 15-foot-tall barrier, achieve at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore meet the noise reduction design goal. Therefore, the 15-foot-tall barrier is not evaluated further in this analysis.

All remaining barriers cost less than the $30,000 allowance per benefited receptor for Activity Category B receptors.

### 8.1.3 Noise Barrier 1 South Analysis

The barrier evaluated is 17 feet tall and 1,600 feet long (see Table 5 and Exhibit 2, *Noise Barriers*).

The barrier does not achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore not acoustically feasible. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

### 8.1.4 Noise Barrier 1 Scenarios Conclusions

**Noise Barrier 1 System Analysis Conclusion:** The barriers are not considered *feasible* and *reasonable*. Therefore, the barriers are not recommended for balloting (see Table 5).

**Noise Barrier 1 North Analysis Conclusion:** Barriers ranging in height from 16 feet to 17 feet are considered *feasible* and *reasonable*. The 16-foot-tall barrier benefits the same number of receptors as the 17-foot-tall barrier and costs less per benefited receptor. Therefore, a 16-foot-tall barrier is recommended for balloting (see Table 5).

**Noise Barrier 1 South Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, the barrier is not recommended for balloting (see Table 5).

**Table 5. Noise Barrier 1 Analysis Summary**

| Barrier Height (Feet) | Barrier Length for Activity Category B Receptors (Feet) | Barrier Length for Activity Category C Receptors (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Cost for NAC Activity Category C Receptor ($360 Per Linear Foot) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|---|---|
| **Noise Barrier 1 System** | | | | | | | | |
| 15 | 1,194 | 775 | 60 | 30 | n/a | n/a | n/a | No |
| 16 | 1,194 | 675 | 60 | 40 | 33 | $16,101 | $465 | No |
| 17 | 1,194 | 625 | 60 | 40 | 33 | $16,825 | $445 | No |
| **Noise Barrier 1 North** | | | | | | | | |
| 15 | 1,194 | n/a | 67 | 33 | n/a | n/a | n/a | No |
| **16** | **1,169** | **n/a** | **67** | **44** | **22** | **$23,646** | **n/a** | **Yes** |
| 17 | 1,169 | n/a | 67 | 44 | 22 | $24,708 | n/a | No |
| **Noise Barrier 1 South** | | | | | | | | |
| 15 | 1,194 | n/a | 67 | 33 | n/a | n/a | n/a | No |

## 8.2 Noise Barrier 2 – Existing Barrier

This analysis evaluates noise abatement at the existing 16-foot-tall noise barrier on the east side of SR-177 for 17 impacted receptors represented by receivers RS264–RS272, RS296, RS297, RS303–RS305, RS308, RS316, and RS317 (see Exhibit 1, *Noise Receptors*). In accordance with FHWA guidance, the existing barrier was evaluated to determine noise levels for the impacted receptors in a "no barrier" scenario. This "no barrier" scenario was then compared to the "with barrier" scenario to determine if the existing barrier satisfied the requirements of the UDOT *Noise Abatement Policy 08A2-01* for acoustic feasibility and met the noise reduction design goal. The barrier evaluated is 16 feet tall and 1,598 feet long (see Table 6 and Exhibit 2, *Noise Barriers*).

The barrier achieves at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore acoustically feasible.

The barrier achieves at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore meets the noise reduction design goal.

**Noise Barrier 2 Analysis Conclusion:** The existing 16-foot-tall barrier is acoustically feasible and meets the noise reduction design goal. Therefore, the existing barrier is recommended to remain in place (see Table 6).

**Table 6. Noise Barrier 2 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) |
|---|---|---|---|
| 16 | 1,598 | 100 | 78 |

## 8.3 Noise Barrier 3 – Proposed

This analysis evaluates noise abatement as a noise barrier for eight impacted receptors represented by receivers RS273, RS274, RS325–RS327, RS334, RS340, and RS341 (see Exhibit 1, *Noise Receptors*). The barrier evaluated is 17 feet tall and 910 feet long (see Table 7 and Exhibit 2, *Noise Barriers*).

The barrier does not achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore not acoustically feasible. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 3 Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, a barrier is not recommended for balloting (see Table 7).

**Table 7. Noise Barrier 3 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 17 | 910 | 33 | n/a | n/a | n/a | No |

## 8.4 Noise Barrier 4 – Proposed

This analysis evaluates noise abatement as a noise barrier for six impacted receptors represented by receivers RS276–RS279, RS374, and RS393 (see Exhibit 1, *Noise Receptors*). The barrier evaluated is 17 feet tall and 1,205 feet long (see Table 8 and Exhibit 2, *Noise Barriers*).

The barrier does not achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore not acoustically feasible. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 4 Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, a barrier is not recommended for balloting (see Table 8).

**Table 8. Noise Barrier 4 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 17 | 1,205 | 0 | n/a | n/a | n/a | No |

## 8.5 Noise Barrier 5 – Proposed

This analysis evaluates noise abatement as a noise barrier for 10 impacted receptors represented by receivers RS120 and RS135–RS143 (see Exhibit 1, *Noise Receptors*). The barrier evaluated is 17 feet tall and 1,739 feet long (see Table 9 and Exhibit 2, *Noise Barriers*).

The barrier does not achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore not acoustically feasible. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 5 Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, a barrier is not recommended for balloting (see Table 9).

**Table 9. Noise Barrier 5 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 17 | 1,739 | 0 | n/a | n/a | n/a | No |

## 8.6 Noise Barrier 6 – Proposed

This analysis evaluates noise abatement as a noise barrier for seven impacted receptors represented by receivers RM111–RM116 and RM118 (see Exhibit 1, *Noise Receptors*). The barrier evaluated is 17 feet tall and 1,756 feet long (see Table 10 and Exhibit 2, *Noise Barriers*).

The barrier does not achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore not acoustically feasible. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 6 Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, a barrier is not recommended for balloting (see Table 10).

**Table 10. Noise Barrier 6 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 17 | 1,756 | 11 | n/a | n/a | n/a | No |

## 8.7 Noise Barrier 7 – Proposed

This analysis evaluates noise abatement as a noise barrier for 42 impacted receptors represented by receivers RM001–RM014, RM023–RM027, RM034, RM035, RM044, RM045, RM052, RM062–RM065, RM067, RM068, RM070, RM072, RM074–RM079, RM085–RM087, and RM106 (see Exhibit 1, *Noise Receptors*). The barriers evaluated range in heights from nine feet to 17 feet, and lengths of 2,032 feet to 2,557 feet (see Table 11 and Exhibit 2, *Noise Barriers*). All barriers include a 10-foot-tall and 157-foot-long barrier segment on the bridge crossing over 300 North; ten feet is the maximum height UDOT's noise policy allows for a noise barrier installed on a structure.

All barriers achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and are therefore acoustically feasible.

All barriers, except for the nine-foot-tall barrier, achieve at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore meet the noise reduction design goal. Therefore, the nine-foot-tall barrier is not evaluated further in this analysis.

All barriers, except for the 10-foot-tall barrier, cost less than the $30,000 allowance per benefited receptor and are therefore cost-effective. Therefore, the 10-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 7 Analysis Conclusion:** Barriers ranging in height from 11 feet to 17 feet are considered *feasible* and *reasonable*. The 15-foot-tall barrier benefits the same number of receptors as the 16-foot and 17-foot-tall barriers, and costs less per benefited receptor than all other barriers. Therefore, a 15-foot-tall barrier is recommended for balloting (see Table 11).

**Table 11. Noise Barrier 7 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 9 | 2,557 | 82 | 18 | n/a | n/a | No |
| 10 | 2,557 | 82 | 55 | 26 | $31,208 | No |
| 11 | 2,557 | 82 | 64 | 29 | $29,634 | No |
| 12 | 2,282 | 82 | 64 | 34 | $23,736 | No |
| 13 | 2,257 | 82 | 64 | 36 | $23,331 | No |
| 14 | 2,257 | 82 | 64 | 39 | $22,613 | No |
| **15** | **2,057** | **82** | **73** | **40** | **$20,973** | **Yes** |
| 16 | 2,032 | 82 | 73 | 40 | $21,644 | No |
| 17 | 2,032 | 82 | 73 | 40 | $22,582 | No |

## 8.8 Noise Barrier 8 – Proposed

This analysis evaluates noise abatement as a noise barrier for 20 impacted receptors represented by receivers RM119–RM124, RM130, RM155–RM160, RM165, RM166, RM169, and RM197–RM200 (see Exhibit 1, *Noise Receptors*). The barrier evaluated is 17 feet tall and 772 feet long (see Table 12 and Exhibit 2, *Noise Barriers*).

The barrier achieves at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore acoustically feasible.

The barrier does not achieve at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore does not meet the noise reduction design goal. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 8 Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, a barrier is not recommended for balloting (see Table 12).

**Table 12. Noise Barrier 8 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 17 | 772 | 100 | 0 | n/a | n/a | No |

## 8.9 Noise Barrier 9 – Proposed

This analysis evaluates noise abatement as a noise barrier for two impacted receptors represented by receivers RM012 and RM106 (see Exhibit 1, *Noise Receptors*). The barrier evaluated is 17 feet tall and 1,136 feet long (see Table 13 and Exhibit 2, *Noise Barriers*).

The barrier achieves at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore acoustically feasible.

The barrier does not achieve at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore does not meet the noise reduction design goal. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 9 Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, a barrier is not recommended for balloting (see Table 13).

**Table 13. Noise Barrier 9 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 17 | 1,136 | 100 | 0 | n/a | n/a | No |

## 8.10 Noise Barrier 10 – Proposed

This analysis evaluates noise abatement as a noise barrier for 30 impacted receptors represented by receivers RM131–RM154, RM202, RM203, RM207, RM209, RM233, and RM238 (see Exhibit 1, *Noise Receptors*). The barrier evaluated is 17 feet tall and 2,455 feet long (see Table 14 and Exhibit 2, *Noise Barriers*).

The barrier does not achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore not acoustically feasible. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 10 Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, a barrier is not recommended for balloting (see Table 14).

**Table 14. Noise Barrier 10 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 17 | 2,455 | 17 | n/a | n/a | n/a | No |

## 8.11 Noise Barrier 11 – Proposed

This analysis evaluates noise abatement as a noise barrier for five impacted receptors represented by receivers RN001 and RN020–RN023 (see Exhibit 1, *Noise Receptors*). The barriers evaluated range in heights from seven feet to 17 feet, and lengths of 150 feet to 541 feet (see Table 15 and Exhibit 2, *Noise Barriers*).

All barriers achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and are therefore acoustically feasible.

All barriers, except for the seven-foot-tall barrier, achieve at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore meet the noise reduction design goal. Therefore, the seven-foot-tall barrier is not evaluated further in this analysis.

The remaining barriers cost more than the $30,000 allowance per benefited receptor and are therefore not cost-effective.

**Noise Barrier 11 Analysis Conclusion:** The analysis evaluated barriers ranging from 14 to 17 feet in height, which benefited the maximum number of receptors but exceeded the $30,000 allowance per benefited receptor, making them not cost-effective. The analysis then evaluated barriers ranging from seven to 13 feet in height, which benefited fewer receptors, but their shorter lengths increased the likelihood of the barrier being cost-effective. However, barriers at these shorter heights and lengths still exceed the $30,000 allowance per benefited receptor, making them not cost-effective. Therefore, no barriers are considered *feasible* and *reasonable* and a barrier at this location is not recommended for balloting (see Table 15).

**Table 15. Noise Barrier 11 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 7 | 541 | 100 | 0 | n/a | n/a | No |
| 8 | 250 | 100 | 100 | 1 | $71,250 | No |
| 9 | 190 | 100 | 100 | 1 | $57,950 | No |
| 10 | 170 | 100 | 100 | 1 | $55,250 | No |
| 11 | 160 | 100 | 100 | 1 | $55,200 | No |
| 12 | 150 | 100 | 100 | 1 | $54,750 | No |
| 13 | 210 | 100 | 100 | 1 | $80,850 | No |
| 14 | 541 | 100 | 100 | 3 | $73,035 | No |
| 15 | 541 | 100 | 100 | 3 | $76,642 | No |
| 16 | 510 | 100 | 100 | 3 | $75,650 | No |
| 17 | 489 | 100 | 100 | 3 | $75,795 | No |

## 8.12 Noise Barrier 12 – Proposed

This analysis evaluates noise abatement as a noise barrier for 34 impacted receptors represented by receivers RN002–RN014, RN033–RN037, RN039, RN042–RN045, RN050, RN054, RN057, RN059, RN063, RN067, RN070–RN072, RN079, and RN087 (see Exhibit 1, *Noise Receptors*). The barrier evaluated is 17 feet tall and 3,914 feet long, with a 10-foot-tall and 164-foot-long barrier segment on the bridge crossing over 1300 North (see Table 16 and Exhibit 2, *Noise Barriers*). Ten feet is the maximum height UDOT's noise policy allows for a noise barrier installed on a structure.

The barrier achieves at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore acoustically feasible.

The barrier does not achieve at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore does not meet the noise reduction design goal. Therefore, the 17-foot-tall barrier is not evaluated further in this analysis.

**Noise Barrier 12 Analysis Conclusion:** The barrier is not considered *feasible* and *reasonable*. Therefore, a barrier is not recommended for balloting (see Table 16).

**Table 16. Noise Barrier 12 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 17 | 3,914 | 71 | 29 | n/a | n/a | No |

## 8.13 Noise Barrier 13 – Proposed

This analysis evaluates noise abatement as a noise barrier for 54 impacted receptors represented by receivers RN102–RN133, RN179, RN189, RN193, RN199, RN203, RN211–RN213, RN215, RN220, RN222, RN223, RN228, RN229, RN232, RN235, RN236, RN238, RN239, and RN241–RN244 (see Exhibit 1, *Noise Receptors*). The barriers evaluated range in heights from 11 feet to 17 feet, and lengths of 2,644 feet to 2,994 feet (see Table 17 and Exhibit 2, *Noise Barriers*). All barriers include a 10-foot-tall and 169-foot-long barrier segment on the bridge crossing over 1300 North. Ten feet is the maximum height UDOT's noise policy allows for a noise barrier installed on a structure.

All barriers achieve at least a five-dBA noise reduction for at least 50 percent of front-row receptors and are therefore acoustically feasible.

All barriers, except for the 11-foot-tall barrier, achieve at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore meet the noise reduction design goal. The 11-foot-tall barrier is not evaluated further in this analysis.

The remaining barriers each cost more than the $30,000 allowance per benefited receptor and are therefore not cost-effective.

### 8.13.1 Noise Barrier 13 Optimized

Because the 17-foot-tall barrier is near the $30,000 allowance per benefited receptor, an optimized barrier was analyzed to determine if reducing end barrier segments at one-foot increments could reduce the cost per benefited receptor while remaining acoustically feasible and meeting the noise reduction design goal.

The evaluated optimized barrier ranges in height from 13 feet to 17 feet; is 2,644 feet long; and includes a 10-foot-tall and 169-foot-long barrier segment on the bridge crossing over 1300 North.

The optimized barrier achieves at least a five-dBA noise reduction for at least 50 percent of front-row receptors and is therefore acoustically feasible.

The optimized barrier achieves at least a seven-dBA noise reduction for at least 35 percent of front-row receptors and therefore meets the noise reduction design goal.

The optimized barrier costs less than the $30,000 allowance per benefited receptor and is therefore cost-effective.

**Noise Barrier 13 Analysis Conclusion:** Barriers ranging in uniform heights from 11 feet to 17 feet are not considered *feasible* and *reasonable*. However, an optimized barrier that ranges in height from 13 feet to 17 feet is considered *feasible* and *reasonable*. Therefore, the optimized barrier is recommended for balloting (see Table 17).

**Table 17. Noise Barrier 13 Analysis Summary**

| Barrier Height (Feet) | Barrier Length (Feet) | Front-Row Receptors with ≥5 dBA Reduction (Percent) | Front-Row Receptors with ≥7 dBA Reduction (Percent) | Number of Benefited Receptors | Cost Per Benefited Receptor for NAC Activity Category B ($30,000) | Barrier Recommended for Balloting |
|---|---|---|---|---|---|---|
| 11 | 2,994 | 74 | 32 | n/a | n/a | No |
| 12 | 2,994 | 79 | 42 | 27 | $39,442 | No |
| 13 | 2,969 | 79 | 58 | 28 | $39,707 | No |
| 14 | 2,969 | 95 | 58 | 35 | $33,366 | No |
| 15 | 2,794 | 95 | 58 | 37 | $31,066 | No |
| 16 | 2,744 | 95 | 63 | 38 | $31,044 | No |
| **Optimized 13–17** | **2,644** | **89** | **63** | **39** | **$29,915** | **Yes** |
| 17 | 2,719 | 95 | 63 | 40 | $30,489 | No |

# 9 CONSTRUCTION NOISE

Land uses that are sensitive to traffic noise are also sensitive to construction noise during UDOT project delivery. UDOT typically controls construction noise by limiting the hours that construction equipment can be operated and requiring permissible sound levels when construction is occurring. UDOT has developed a supplemental specification—2024 UDOT Special Provision 00555—that establishes noise control during construction (UDOT 2024). All UDOT contractors are required to conform to this specification to reduce the impact of construction noise on the surrounding community. This specification would be applicable for the Proposed Action.

# 10 COORDINATION WITH LOCAL OFFICIALS

Land use compatibility noise data was developed to inform local authorities of future noise levels on undeveloped land next to the Proposed Action, specifically land adjacent to SR-177 which is a major traffic noise generator. For this analysis, one undeveloped property was selected on the west side of SR-177at approximately 500 North. The 66 dBA contour would be approximately 250 feet from the edge of the outside lane. The 71 dBA contour would be approximately 50 feet from the edge of the outside lane.

Although the noise contour information is based on the results of the noise modeling, it should not be interpreted to be site specific for any areas along SR-177. Variations in terrain, the roadway profile, the proximity to intersections, and existing development could change the distances of these noise contours. This information is intended only to provide a general guide for future planning and should not be used in the final design or layout of future development.

# 11 CONCLUSIONS

The following sections provide conclusions for the traffic noise impacts analysis and the noise abatement analysis for the Proposed Action.

## 11.1 Traffic Noise Impact Analysis Conclusions

For the existing condition, outdoor noise levels range from 46 dBA to 65 dBA. Indoor noise levels range from 21 dBA to 37 dBA. Of the 764 receptors in this analysis, none are impacted in the existing condition.

For the future condition (2050), outdoor noise levels range from 46 dBA to 74 dBA. Indoor noise levels range from 25 dBA to 40 dBA. Of the 764 receptors in this analysis, 283 receptors are impacted in the future condition:

- 43 receptors would have a noise level greater than or equal to their NAC threshold.
- 282 receptors would receive an increase of 10 dBA or more over their existing noise levels.
- 42 receptors would experience both types of impacts.

## 11.2 Noise Abatement Analysis Conclusions

Thirteen barrier analyses considered noise abatement for impacted receptors (see Table 18).

**Table 18. Noise Barrier Analysis Summary and Barriers Recommended for Balloting**

| Barrier Analysis | Barrier Recommended for Balloting | Barrier Height (Feet) | Barrier Length (Feet) |
|---|---|---|---|
| **1** | **Yes** | **16** | **1,169** |
| **2** | **Existing Barrier Remain in Place** | **16** | **1,598** |
| 3 | No | n/a | n/a |
| 4 | No | n/a | n/a |
| 5 | No | n/a | n/a |
| 6 | No | n/a | n/a |
| **7** | **Yes** | **15** | **2,057** |
| 8 | No | n/a | n/a |
| 9 | No | n/a | n/a |
| 10 | No | n/a | n/a |
| 11 | No | n/a | n/a |
| 12 | No | n/a | n/a |
| **13** | **Yes** | **Optimized 13–17** | **2,644** |

# 12 REFERENCES

[FHWA] Federal Highway Administration. 1980. *Highway Noise Fundamentals*. September.

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[UDOT] Utah Department of Transportation. 2020. *Noise Abatement UDOT 08A2-01*. May 28.

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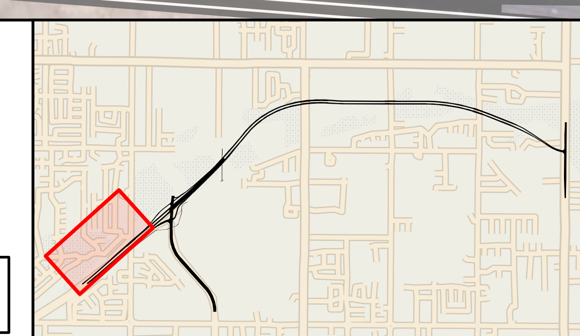
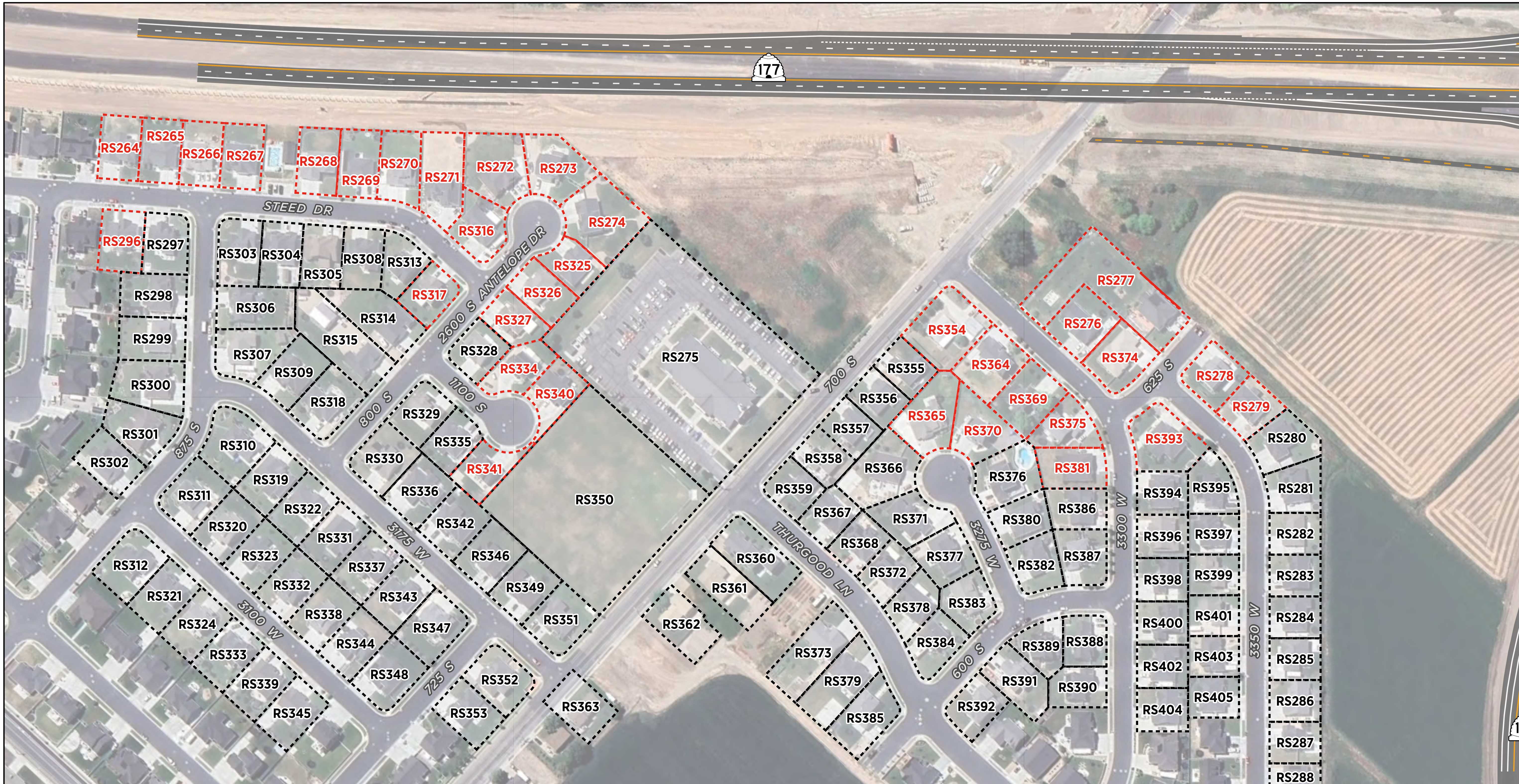
# EXHIBIT 1: NOISE RECEPTORS


**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

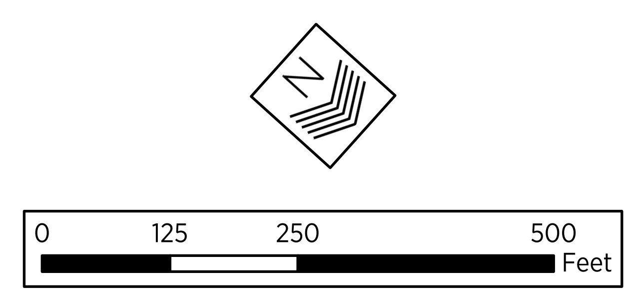
0 125 250 500 Feet

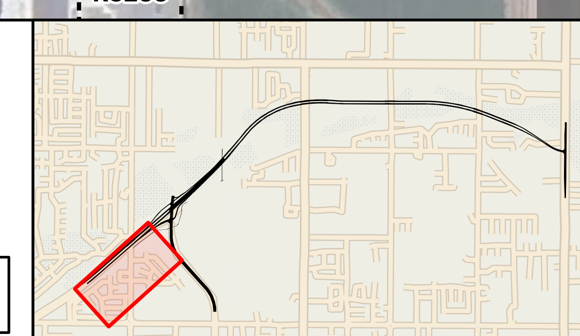





**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area



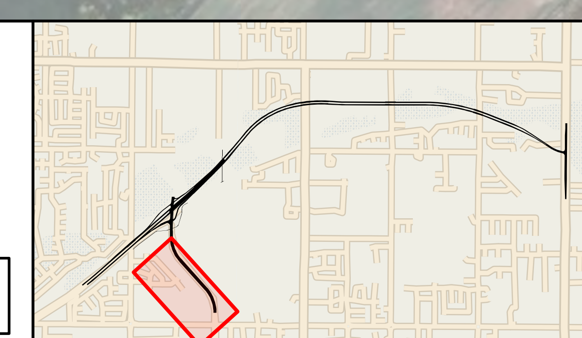



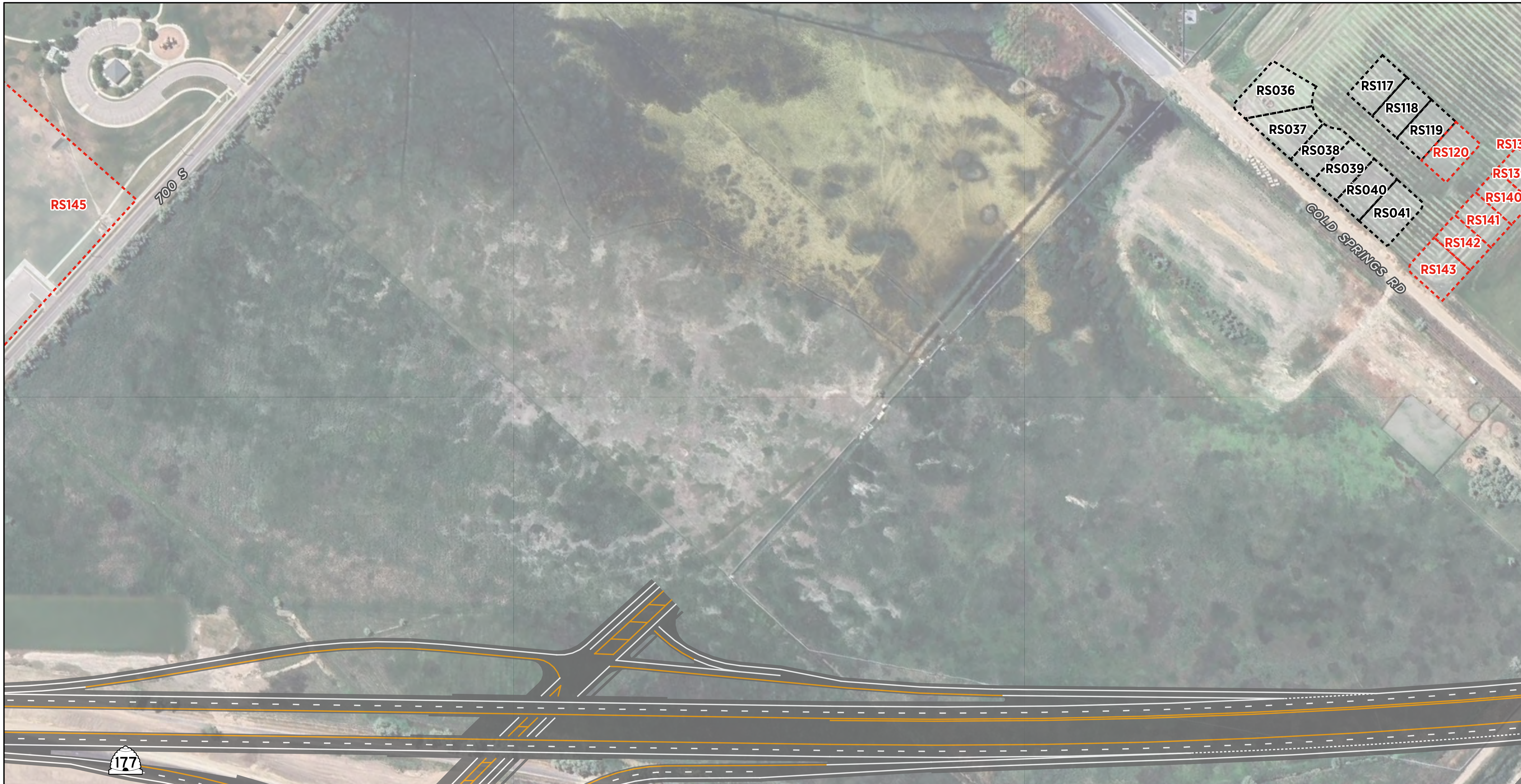

**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

N

0 125 250 500 Feet



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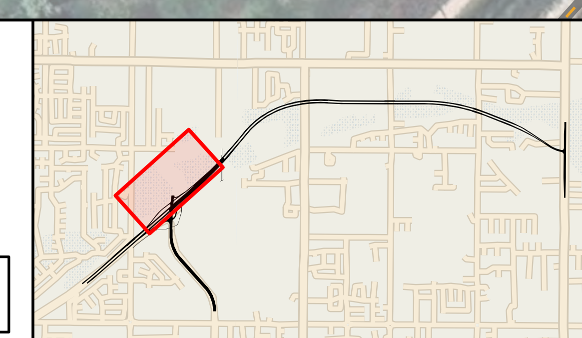
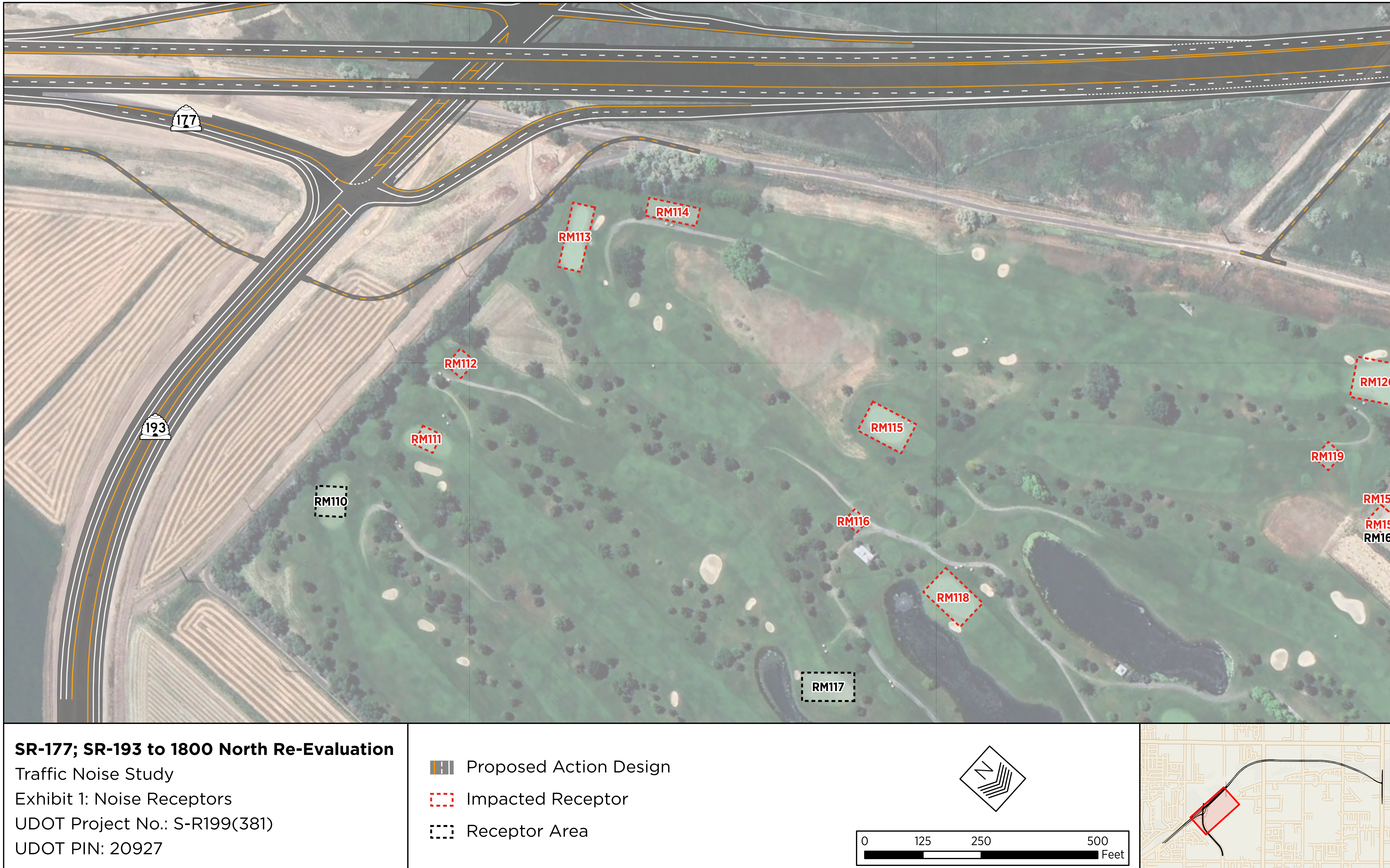
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

0 125 250 500 Feet






**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
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Proposed Action Design
Impacted Receptor
Receptor Area


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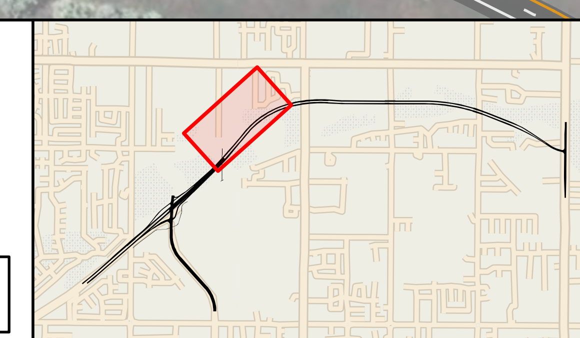
Impacted Receptor
Receptor Area

0 125 250 500 Feet




**SR-177; SR-193 to 1800 North Re-Evaluation**

Traffic Noise Study

Exhibit 1: Noise Receptors

UDOT Project No.: S-R199(381)

UDOT PIN: 20927

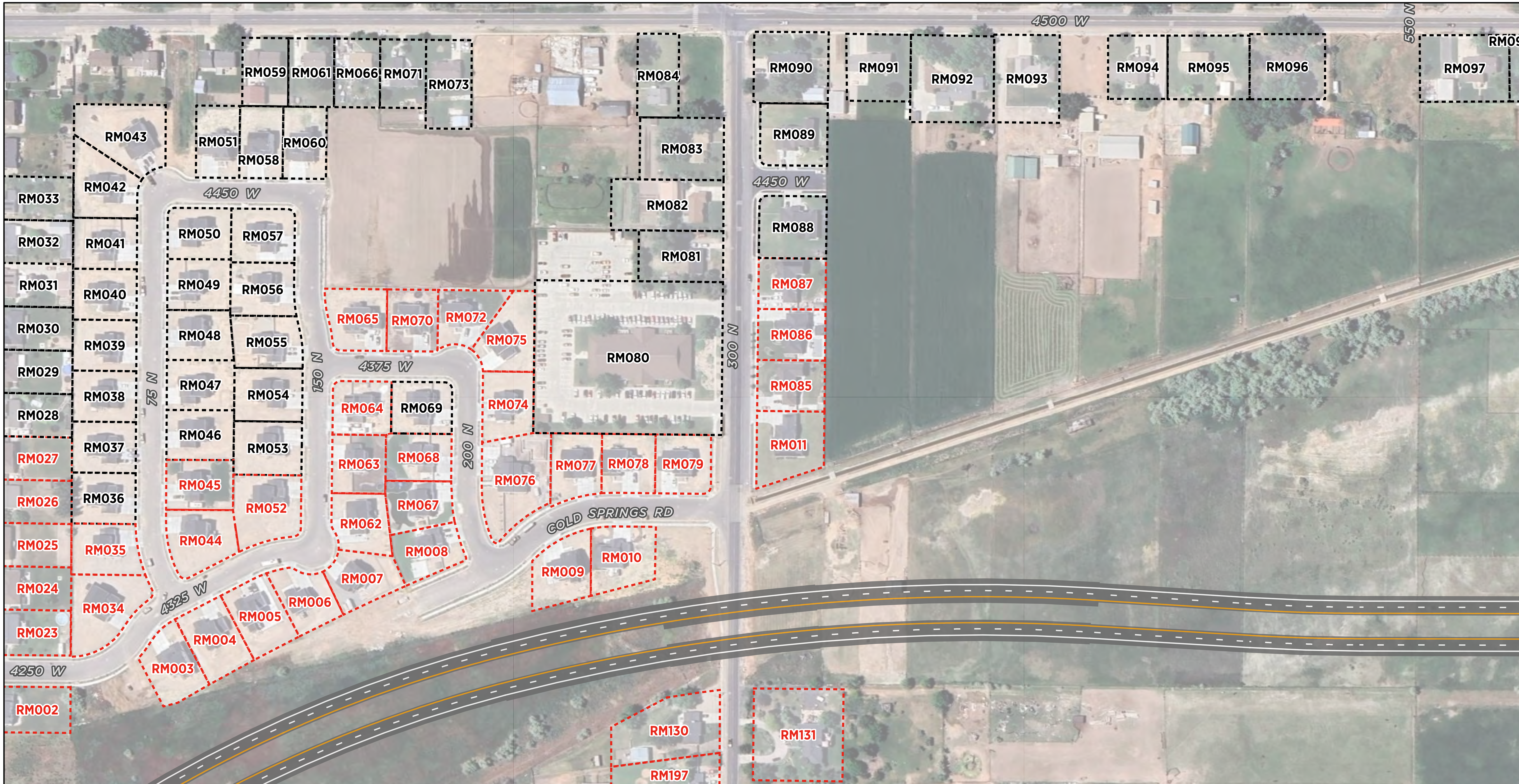
Proposed Action Design

Impacted Receptor

Receptor Area

N

0 125 250 500 Feet




**SR-177; SR-193 to 1800 North Re-Evaluation**
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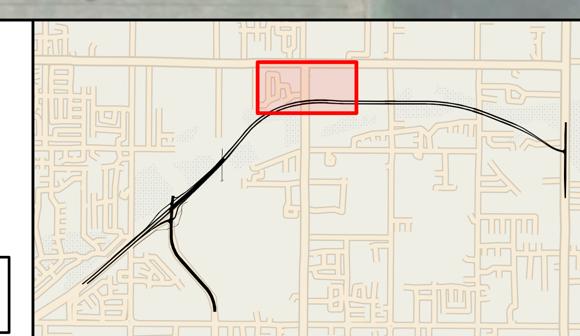
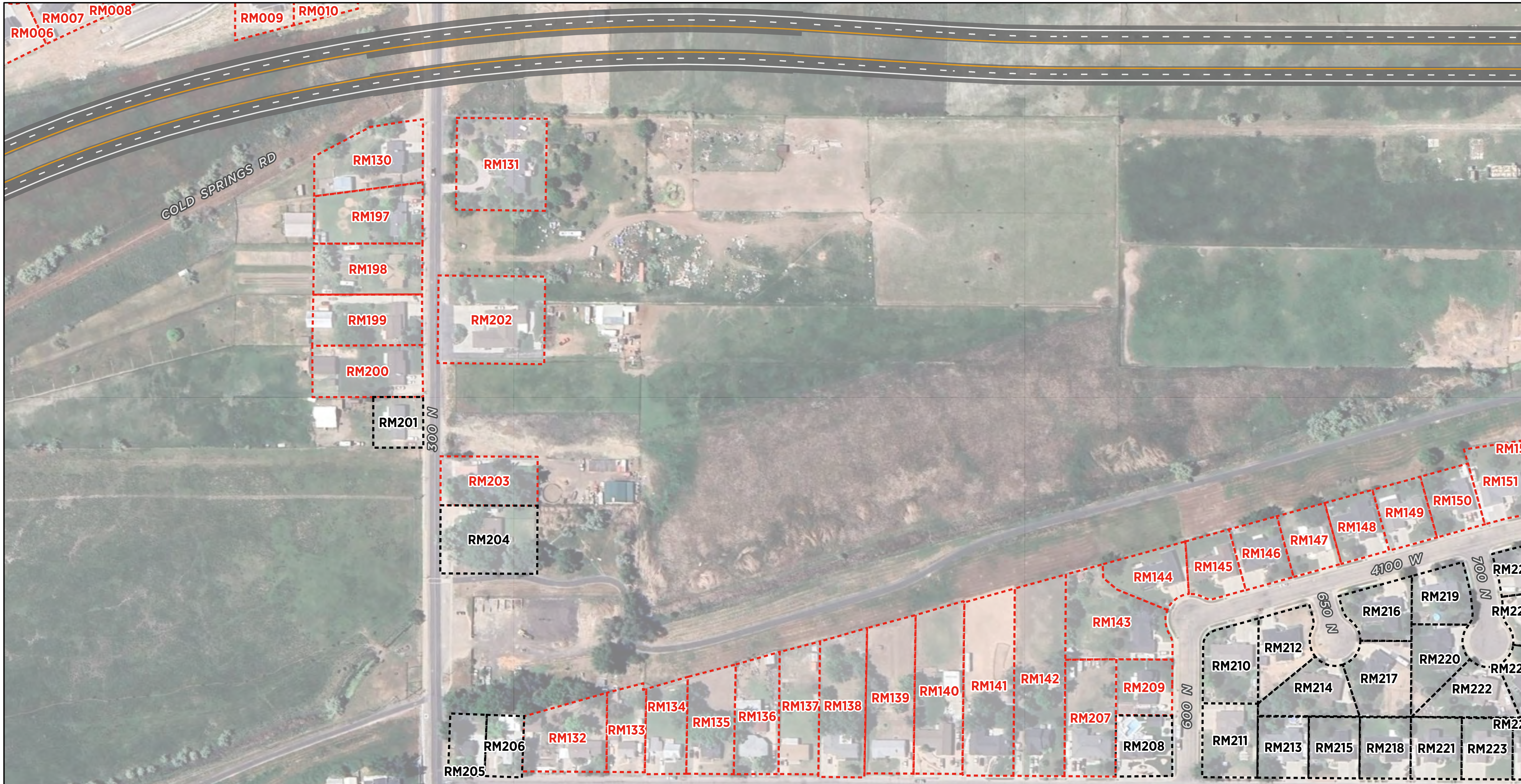
Proposed Action Design
Impacted Receptor
Receptor Area

0 125 250 500 Feet

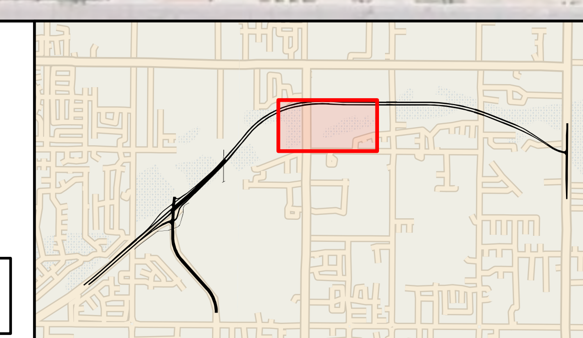


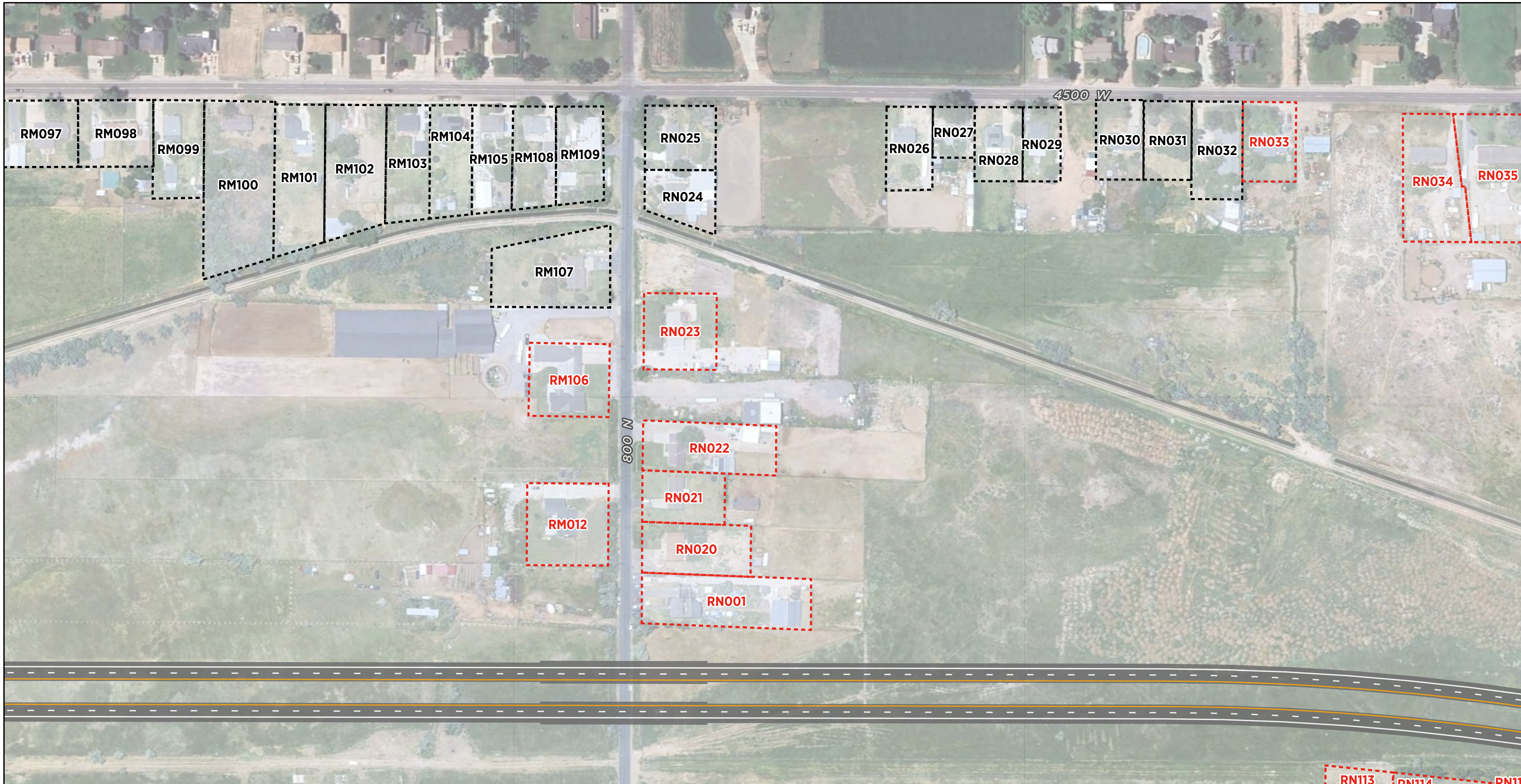



**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

0 125 250 500
Feet






**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
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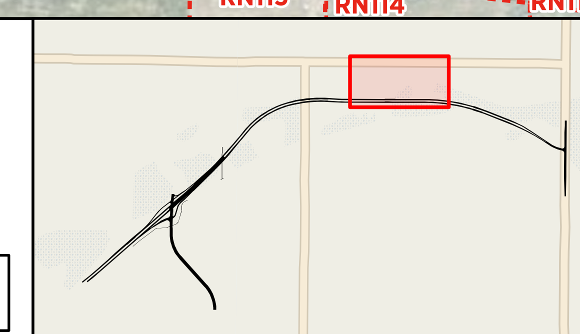
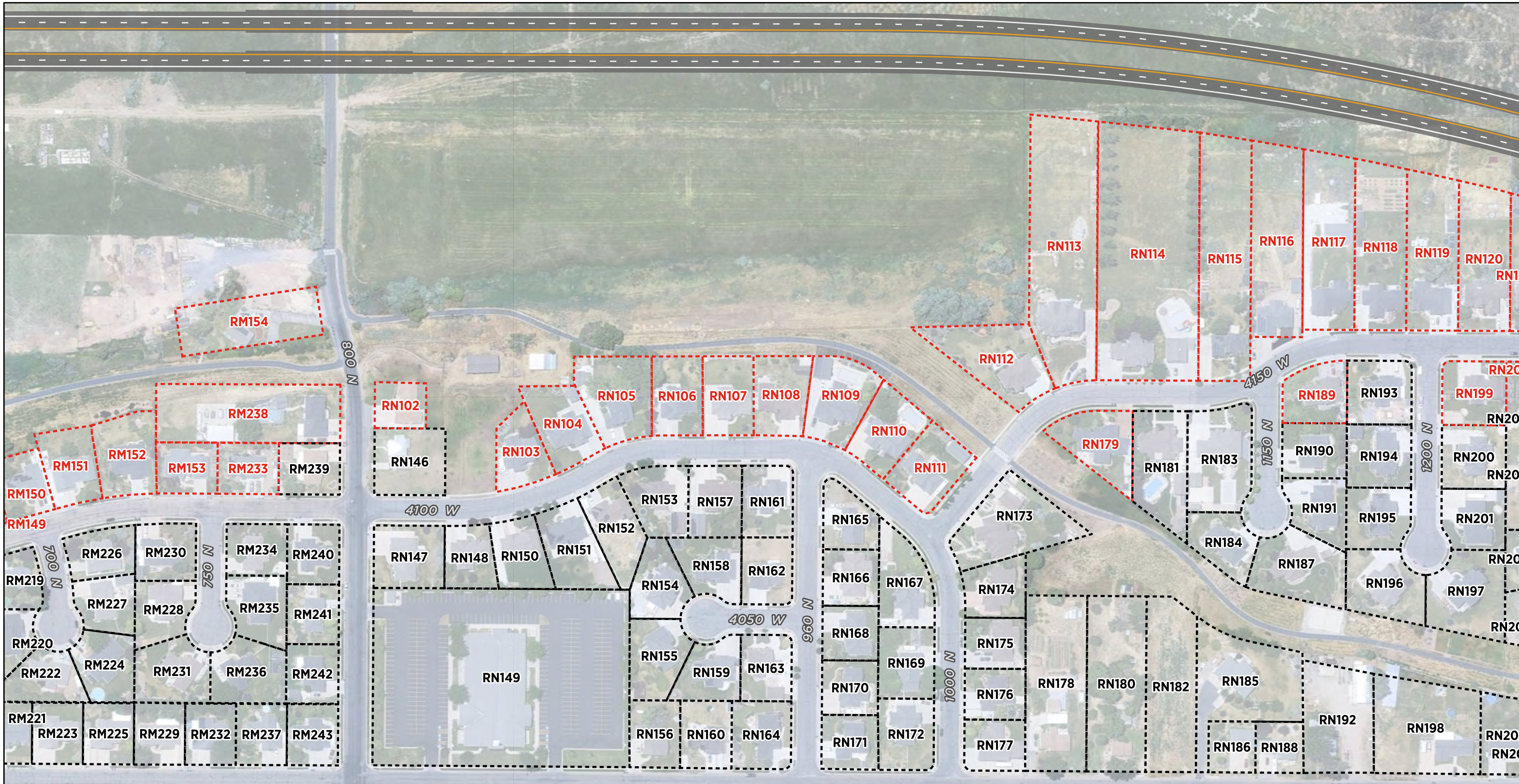
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

0 125 250 500
Feet



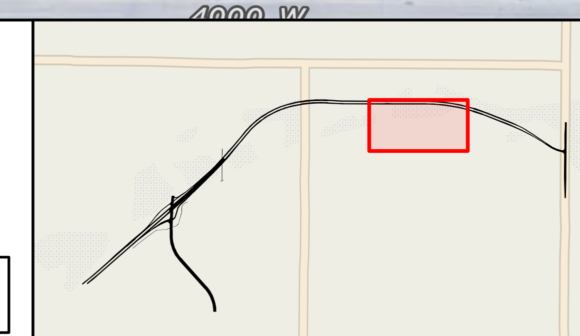


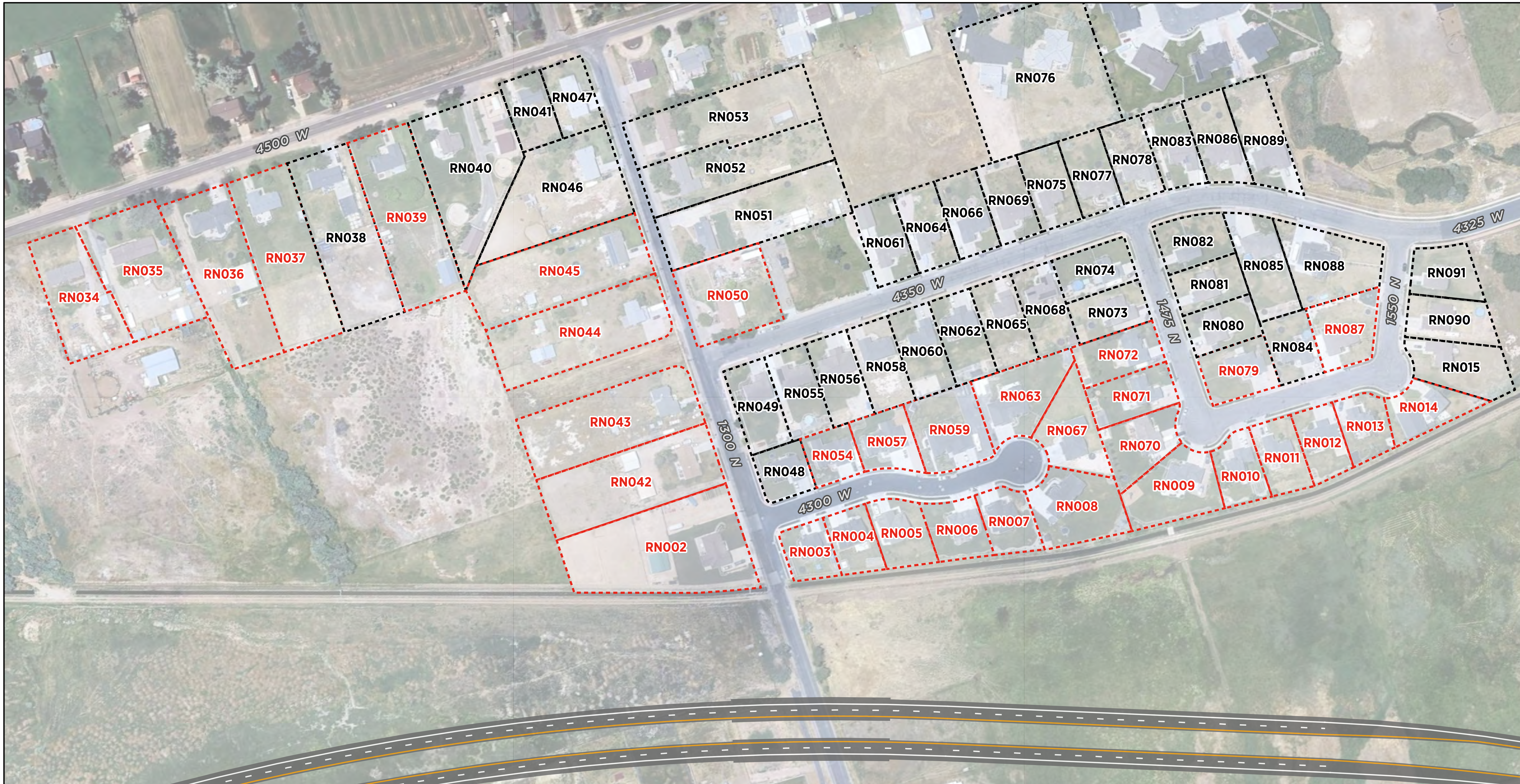

**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

N

0 125 250 500 Feet

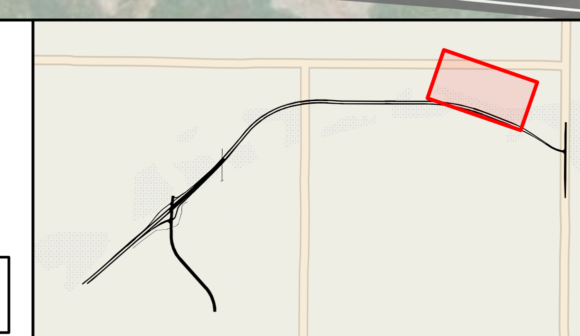


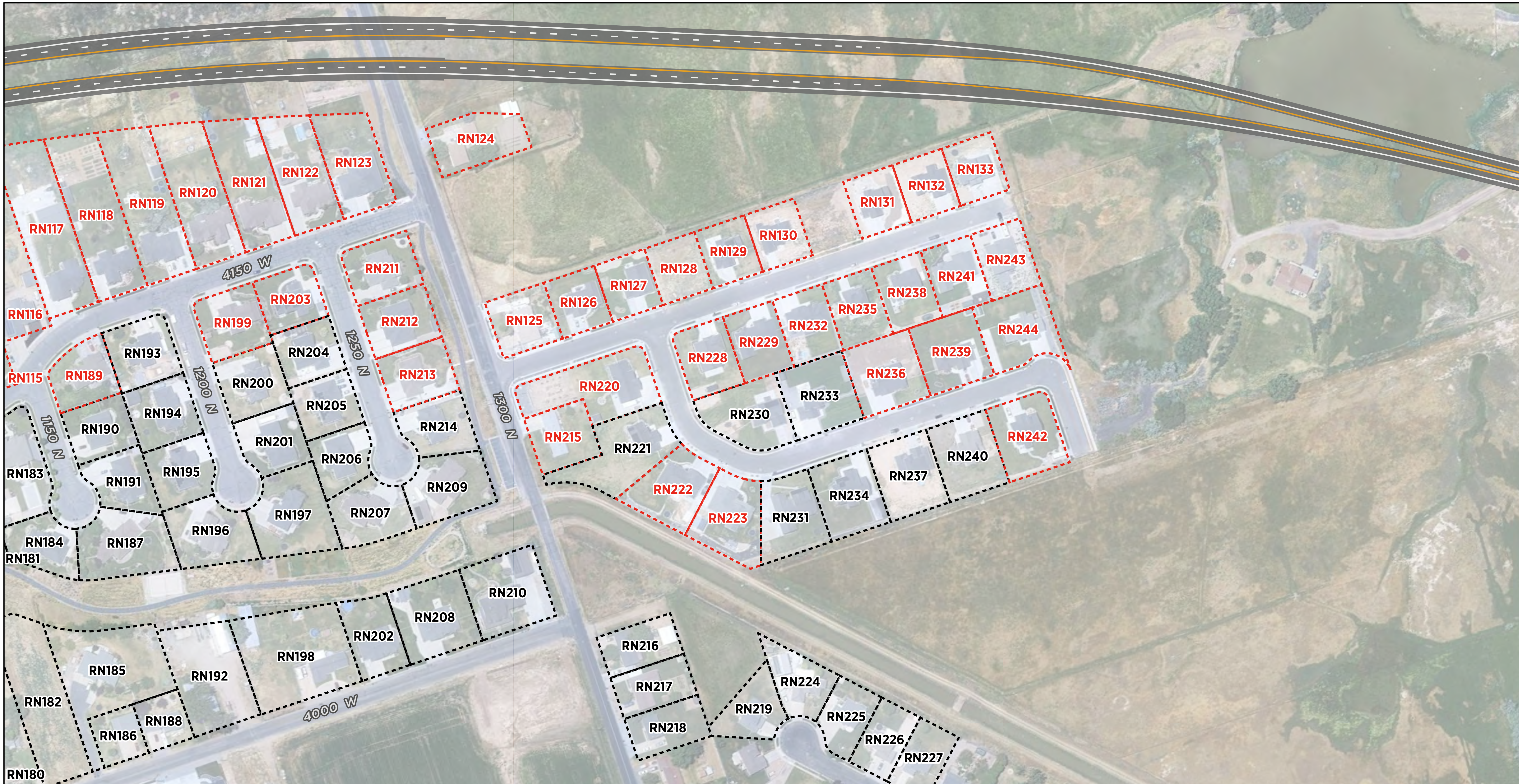



**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

0 125 250 500 Feet

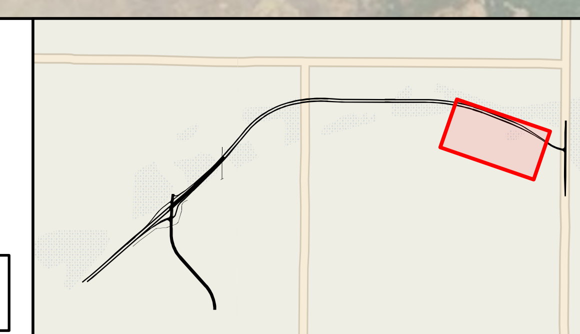





**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

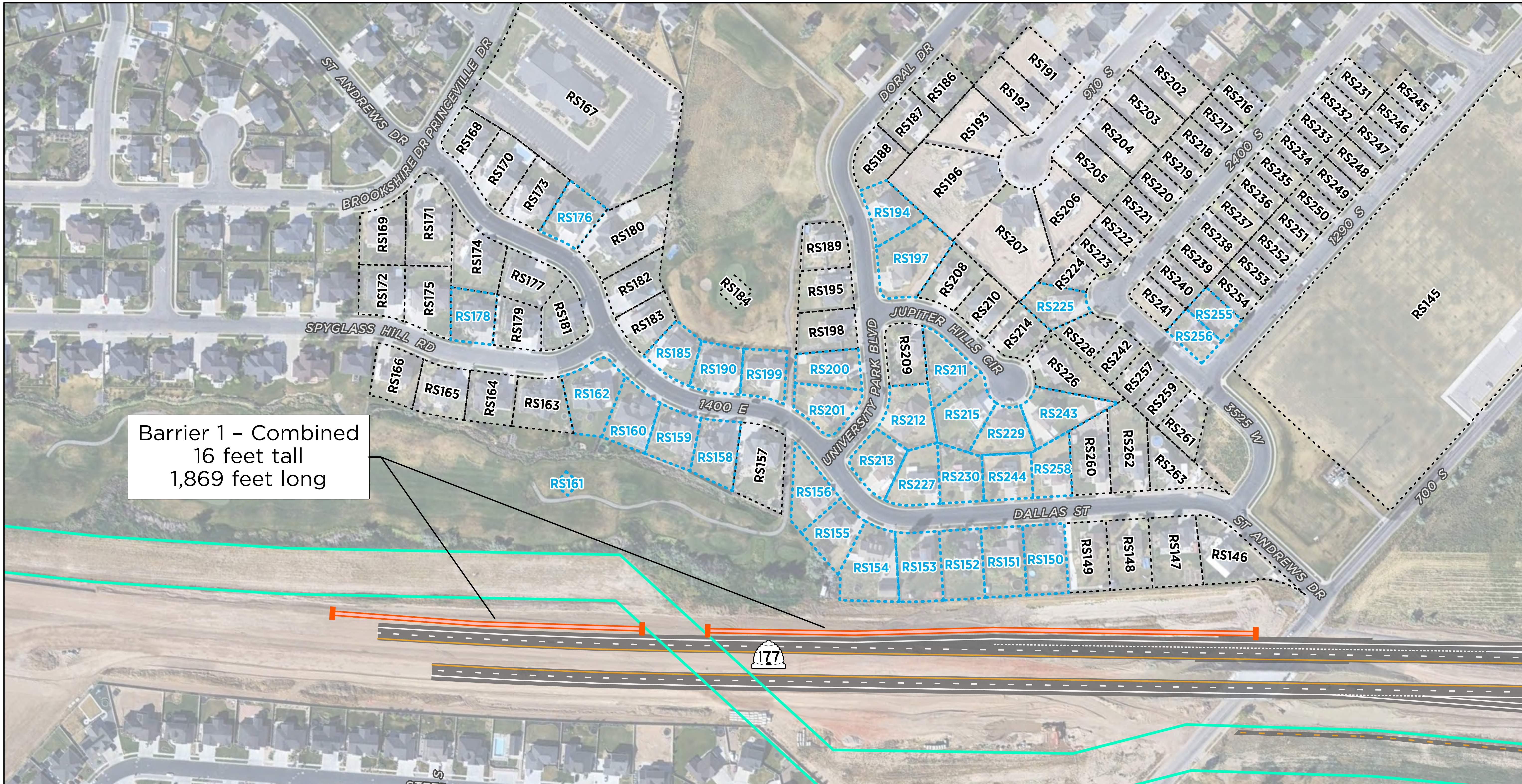
0 125 250 500 Feet




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 1: Noise Receptors
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Impacted Receptor
Receptor Area

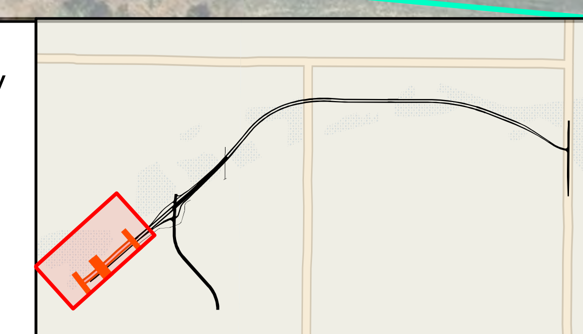
# EXHIBIT 2: NOISE BARRIERS




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Not Recommended for Balloting
Receptor Area
Benefited Receptor
Bureau of Reclamation Property

0 125 250 500 Feet



**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 System**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS145 | No | 1 | C | 49 | 61 | 12 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 |
| RS146 | Yes | 1 | B | 55 | 66 | 11 | 64 | 2 | 0 | 64 | 2 | 0 | 64 | 2 | 0 |
| RS147 | Yes | 1 | B | 53 | 66 | 13 | 62 | 4 | 0 | 62 | 4 | 0 | 62 | 4 | 0 |
| RS148 | Yes | 1 | B | 54 | 65 | 11 | 61 | 4 | 0 | 61 | 4 | 0 | 61 | 4 | 0 |
| RS149 | Yes | 1 | B | 54 | 64 | 10 | 60 | 4 | 0 | 60 | 4 | 0 | 60 | 4 | 0 |
| RS150 | Yes | 1 | B | 55 | 65 | 10 | 59 | 6 | 1 | 60 | 5 | 1 | 60 | 5 | 1 |
| RS151 | Yes | 1 | B | 55 | 66 | 11 | 59 | 7 | 1 | 59 | 7 | 1 | 60 | 6 | 1 |
| RS152 | Yes | 1 | B | 55 | 67 | 12 | 59 | 8 | 1 | 59 | 8 | 1 | 60 | 7 | 1 |
| RS153 | Yes | 1 | B | 55 | 68 | 13 | 59 | 9 | 1 | 60 | 8 | 1 | 60 | 8 | 1 |
| RS154 | Yes | 1 | B | 55 | 68 | 13 | 60 | 8 | 1 | 60 | 8 | 1 | 60 | 8 | 1 |
| RS155 | No | 1 | B | 53 | 66 | 13 | 59 | 7 | 1 | 59 | 7 | 1 | 59 | 7 | 1 |
| RS156 | No | 1 | B | 51 | 64 | 13 | 58 | 6 | 1 | 58 | 6 | 1 | 58 | 6 | 1 |
| RS157 | No | 1 | B | 49 | 62 | 13 | 57 | 5 | 1 | 58 | 4 | 0 | 58 | 4 | 0 |
| RS158 | No | 1 | B | 50 | 63 | 13 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 |
| RS159 | No | 1 | B | 49 | 63 | 14 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 |
| RS160 | No | 1 | B | 49 | 62 | 13 | 57 | 5 | 1 | 57 | 5 | 1 | 57 | 5 | 1 |
| RS161 | Yes | 1 | C | 52 | 64 | 12 | 59 | 5 | 1 | 59 | 5 | 1 | 59 | 5 | 1 |
| RS162 | No | 1 | B | 48 | 61 | 13 | 56 | 5 | 1 | 56 | 5 | 1 | 56 | 5 | 1 |
| RS163 | No | 1 | B | 48 | 61 | 13 | 57 | 4 | 0 | 57 | 4 | 0 | 57 | 4 | 0 |
| RS164 | No | 1 | B | 48 | 60 | 12 | 57 | 3 | 0 | 57 | 3 | 0 | 56 | 4 | 0 |
| RS165 | No | 1 | B | 48 | 60 | 12 | 57 | 3 | 0 | 57 | 3 | 0 | 56 | 4 | 0 |
| RS166 | No | 1 | B | 47 | 59 | 12 | 56 | 3 | 0 | 56 | 3 | 0 | 56 | 3 | 0 |
| RS167 | No | 1 | D | 21 | 26 | 5 | 23 | 3 | 0 | 23 | 3 | 0 | 23 | 3 | 0 |
| RS168 | No | 1 | B | 46 | 49 | 3 | 45 | 4 | 0 | 45 | 4 | 0 | 45 | 4 | 0 |
| RS169 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS170 | No | 1 | B | 46 | 50 | 4 | 46 | 4 | 0 | 46 | 4 | 0 | 46 | 4 | 0 |
| RS171 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 | 46 | 2 | 0 | 46 | 2 | 0 |
| RS172 | No | 1 | B | 46 | 55 | 9 | 51 | 4 | 0 | 51 | 4 | 0 | 51 | 4 | 0 |
| RS173 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 |
| RS174 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RS175 | No | 1 | B | 47 | 60 | 13 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 |
| RS176 | No | 1 | B | 46 | 51 | 5 | 46 | 5 | 1 | 46 | 5 | 1 | 46 | 5 | 1 |
| RS177 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 48 | 4 | 0 |
| RS178 | No | 1 | B | 49 | 61 | 12 | 57 | 4 | 0 | 56 | 5 | 1 | 56 | 5 | 1 |
| RS179 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 | 53 | 3 | 0 | 53 | 3 | 0 |
| RS180 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 |
| RS181 | No | 1 | B | 46 | 55 | 9 | 51 | 4 | 0 | 51 | 4 | 0 | 51 | 4 | 0 |
| RS182 | No | 1 | B | 46 | 53 | 7 | 49 | 4 | 0 | 49 | 4 | 0 | 48 | 5 | 1 |
| RS183 | No | 1 | B | 46 | 54 | 8 | 50 | 4 | 0 | 50 | 4 | 0 | 50 | 4 | 0 |
| RS184 | No | 1 | C | 46 | 53 | 7 | 49 | 4 | 0 | 50 | 3 | 0 | 50 | 3 | 0 |
| RS185 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 |
| RS186 | No | 1 | B | 46 | 49 | 3 | 45 | 4 | 0 | 45 | 4 | 0 | 46 | 3 | 0 |
| RS187 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 48 | 3 | 0 |
| RS188 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RS189 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 |
| RS190 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 52 | 4 | 0 |
| RS191 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS192 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS193 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 System**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS194 | No | 1 | B | 46 | 51 | 5 | 46 | 5 | 1 | 46 | 5 | 1 | 46 | 5 | 1 |
| RS195 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 48 | 3 | 0 |
| RS196 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 |
| RS197 | No | 1 | B | 46 | 51 | 5 | 45 | 6 | 1 | 45 | 6 | 1 | 45 | 6 | 1 |
| RS198 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 50 | 2 | 0 |
| RS199 | No | 1 | B | 46 | 57 | 11 | 52 | 5 | 1 | 52 | 5 | 1 | 52 | 5 | 1 |
| RS200 | No | 1 | B | 46 | 54 | 8 | 49 | 5 | 1 | 49 | 5 | 1 | 49 | 5 | 1 |
| RS201 | No | 1 | B | 46 | 56 | 10 | 50 | 6 | 1 | 50 | 6 | 1 | 51 | 5 | 1 |
| RS202 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 | 46 | 2 | 0 | 46 | 2 | 0 |
| RS203 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS204 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS205 | No | 1 | B | 46 | 48 | 2 | 45 | 3 | 0 | 46 | 2 | 0 | 46 | 2 | 0 |
| RS206 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS207 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 |
| RS208 | No | 1 | B | 46 | 53 | 7 | 49 | 4 | 0 | 49 | 4 | 0 | 50 | 3 | 0 |
| RS209 | No | 1 | B | 46 | 55 | 9 | 51 | 4 | 0 | 51 | 4 | 0 | 51 | 4 | 0 |
| RS210 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 |
| RS211 | No | 1 | B | 46 | 57 | 11 | 49 | 8 | 1 | 49 | 8 | 1 | 50 | 7 | 1 |
| RS212 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 |
| RS213 | No | 1 | B | 47 | 61 | 14 | 54 | 7 | 1 | 54 | 7 | 1 | 54 | 7 | 1 |
| RS214 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 |
| RS215 | No | 1 | B | 46 | 57 | 11 | 50 | 7 | 1 | 50 | 7 | 1 | 51 | 6 | 1 |
| RS216 | No | 1 | B | 46 | 46 | 0 | 42 | 4 | 0 | 42 | 4 | 0 | 43 | 3 | 0 |
| RS217 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS218 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS219 | No | 1 | B | 46 | 47 | 1 | 44 | 3 | 0 | 44 | 3 | 0 | 44 | 3 | 0 |
| RS220 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS221 | No | 1 | B | 46 | 46 | 0 | 42 | 4 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS222 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 44 | 2 | 0 |
| RS223 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS224 | No | 1 | B | 46 | 47 | 1 | 44 | 3 | 0 | 44 | 3 | 0 | 44 | 3 | 0 |
| RS225 | No | 1 | B | 46 | 52 | 6 | 46 | 6 | 1 | 47 | 5 | 1 | 47 | 5 | 1 |
| RS226 | No | 1 | B | 46 | 54 | 8 | 50 | 4 | 0 | 50 | 4 | 0 | 50 | 4 | 0 |
| RS227 | No | 1 | B | 48 | 62 | 14 | 54 | 8 | 1 | 54 | 8 | 1 | 54 | 8 | 1 |
| RS228 | No | 1 | B | 46 | 57 | 11 | 53 | 4 | 0 | 53 | 4 | 0 | 53 | 4 | 0 |
| RS229 | No | 1 | B | 46 | 56 | 10 | 50 | 6 | 1 | 51 | 5 | 1 | 51 | 5 | 1 |
| RS230 | No | 1 | B | 47 | 61 | 14 | 53 | 8 | 1 | 53 | 8 | 1 | 53 | 8 | 1 |
| RS231 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 |
| RS232 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RS233 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 |
| RS234 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS235 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RS236 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 |
| RS237 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RS238 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 |
| RS239 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RS240 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 |
| RS241 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 |
| RS242 | No | 1 | B | 46 | 57 | 11 | 54 | 3 | 0 | 54 | 3 | 0 | 54 | 3 | 0 |

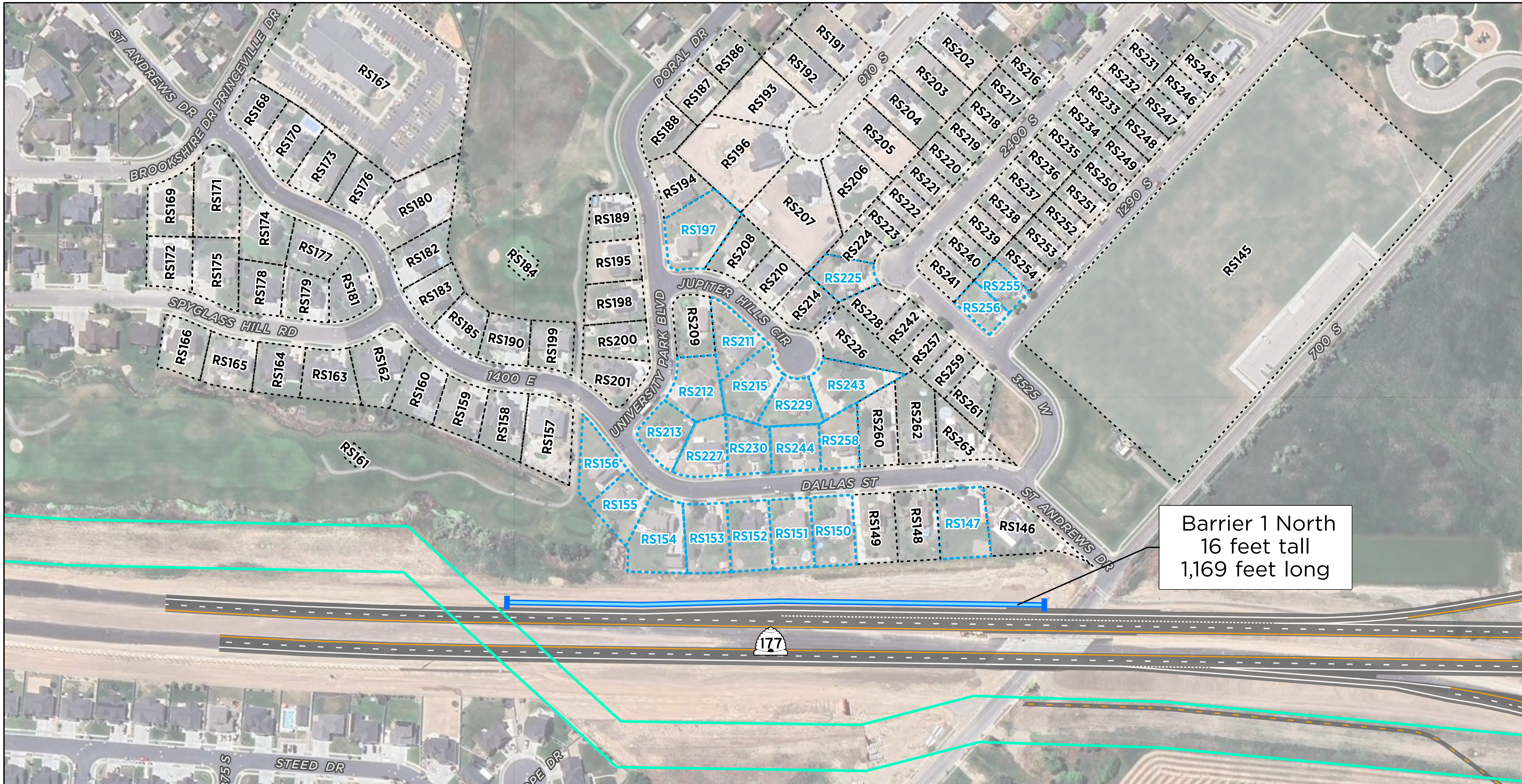
**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 System**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS243 | No | 1 | B | 46 | 57 | 11 | 51 | 6 | 1 | 51 | 6 | 1 | 52 | 5 | 1 |
| RS244 | No | 1 | B | 47 | 60 | 13 | 53 | 7 | 1 | 53 | 7 | 1 | 53 | 7 | 1 |
| RS245 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS246 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS247 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS248 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS249 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS250 | No | 1 | B | 46 | 47 | 1 | 44 | 3 | 0 | 44 | 3 | 0 | 45 | 2 | 0 |
| RS251 | No | 1 | B | 46 | 47 | 1 | 44 | 3 | 0 | 44 | 3 | 0 | 44 | 3 | 0 |
| RS252 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS253 | No | 1 | B | 46 | 48 | 2 | 44 | 4 | 0 | 44 | 4 | 0 | 44 | 4 | 0 |
| RS254 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 | 46 | 2 | 0 | 47 | 1 | 0 |
| RS255 | No | 1 | B | 46 | 55 | 9 | 47 | 8 | 1 | 47 | 8 | 1 | 47 | 8 | 1 |
| RS256 | No | 1 | B | 46 | 52 | 6 | 45 | 7 | 1 | 46 | 6 | 1 | 46 | 6 | 1 |
| RS257 | No | 1 | B | 46 | 58 | 12 | 55 | 3 | 0 | 55 | 3 | 0 | 55 | 3 | 0 |
| RS258 | No | 1 | B | 46 | 60 | 14 | 54 | 6 | 1 | 54 | 6 | 1 | 54 | 6 | 1 |
| RS259 | No | 1 | B | 46 | 59 | 13 | 57 | 2 | 0 | 57 | 2 | 0 | 57 | 2 | 0 |
| RS260 | No | 1 | B | 46 | 60 | 14 | 56 | 4 | 0 | 56 | 4 | 0 | 56 | 4 | 0 |
| RS261 | No | 1 | B | 46 | 60 | 14 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 |
| RS262 | No | 1 | B | 47 | 61 | 14 | 57 | 4 | 0 | 57 | 4 | 0 | 57 | 4 | 0 |
| RS263 | No | 1 | B | 48 | 61 | 13 | 59 | 2 | 0 | 59 | 2 | 0 | 59 | 2 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 System**

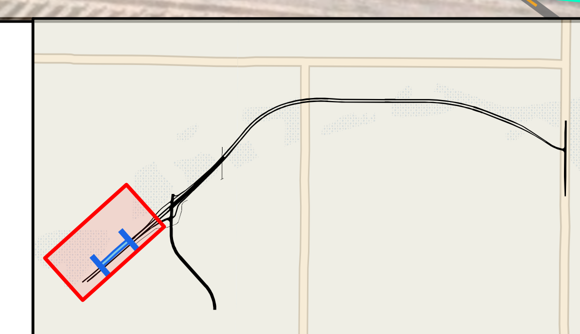
| | NAC | 17-Foot Barrier | 16-Foot Barrier | 15-Foot Barrier |
|---|---|---|---|---|
| | **Inputs – Overall** | | | |
| | Barrier Length (ft.) = | 1,819 | 1,869 | 1,969 |
| | Barrier Height (ft.) = | 17 | 16 | 15 |
| | Barrier Area (sq. ft.) = | 30,923 | 29,904 | 29,535 |
| | **Inputs – Category A, C, D, or E** | | | |
| | Barrier Height (ft.) = | 17 | 16 | 15 |
| | Barrier Length (ft.) = | 625 | 675 | 775 |
| | Barrier Area (ft.) = | 10,625 | 10,800 | 11,625 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 | 0 | 0 |
| | Safety Barrier (linear ft.) = | 625 | 675 | 775 |
| | **Inputs – Category B** | | | |
| | Barrier Height (ft.) = | 17 | 16 | 15 |
| | Barrier Length (ft.) = | 1,194 | 1,194 | 1,194 |
| | Barrier Area (sq. ft.) = | 20,298 | 19,104 | 17,910 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 | 0 | 0 |
| | Safety Barrier (linear ft.) = | 1,194 | 1,194 | 1,194 |
| **Feasibility** | **Acoustic Feasibility** | | | |
| | Front Row Receptors = | 10 | 10 | 10 |
| | Front-Row Receptors with a 5 dBA Reduction = | 6 | 6 | 6 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 60% | 60% | 60% |
| | Acoustically Feasible = | **Yes** | **Yes** | **Yes** |
| **Reasonableness** | **Noise Reduction Design Goal** | | | |
| | Front Row Receptors = | 10 | 10 | 10 |
| | Front Row Receptors with 7 dBA Reduction = | 4 | 4 | 3 |
| | % of Front Row Reduced At Least 7 dBA = | 40% | 40% | 30% |
| | Meets Noise Reduction Design Goal = | **Yes** | **Yes** | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | | | |
| | Barrier Cost (Barrier area x 20) = | $212,500 | $216,000 | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | $0 | $0 | n/a |
| | Safety Barrier (linear ft. x 125) = | $78,125 | $84,375 | n/a |
| | Total Barrier Cost = | $290,625 | $300,375 | n/a |
| | Allowable Cost (length x 360) = | $225,000 | $243,000 | n/a |
| | Cost per Linear Foot = | $465 | $445 | n/a |
| | Cost Reasonable = | **No** | **No** | **n/a** |
| | **Cost Effectiveness – Category B** | | | |
| | Barrier Cost (Barrier area x 20) = | $405,960 | $382,080 | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | $0 | $0 | n/a |
| | Safety Barrier (linear ft. x 125) = | $149,250 | $149,250 | n/a |
| | Total Barrier Cost = | $555,210 | $531,330 | n/a |
| | Allowable Cost (benefited x 30k) = | $990,000 | $990,000 | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | 33 | 33 | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | $16,825 | $16,101 | n/a |
| | Cost Reasonable = | **Yes** | **Yes** | **n/a** |




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Recommended for Balloting
Receptor Area
Benefited Receptor
Bureau of Reclamation Property

0 125 250 500 Feet



**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 North**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS145 | No | 1 | C | 49 | 61 | 12 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 |
| RS146 | Yes | 1 | B | 55 | 66 | 11 | 62 | 4 | 0 | 63 | 3 | 0 | 63 | 3 | 0 |
| RS147 | Yes | 1 | B | 53 | 66 | 13 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 |
| RS148 | Yes | 1 | B | 54 | 65 | 11 | 61 | 4 | 0 | 61 | 4 | 0 | 61 | 4 | 0 |
| RS149 | Yes | 1 | B | 54 | 64 | 10 | 60 | 4 | 0 | 60 | 4 | 0 | 60 | 4 | 0 |
| RS150 | Yes | 1 | B | 55 | 65 | 10 | 59 | 6 | 1 | 60 | 5 | 1 | 60 | 5 | 1 |
| RS151 | Yes | 1 | B | 55 | 66 | 11 | 59 | 7 | 1 | 59 | 7 | 1 | 60 | 6 | 1 |
| RS152 | Yes | 1 | B | 55 | 67 | 12 | 59 | 8 | 1 | 60 | 7 | 1 | 60 | 7 | 1 |
| RS153 | Yes | 1 | B | 55 | 68 | 13 | 60 | 8 | 1 | 60 | 8 | 1 | 60 | 8 | 1 |
| RS154 | Yes | 1 | B | 55 | 68 | 13 | 60 | 8 | 1 | 60 | 8 | 1 | 60 | 8 | 1 |
| RS155 | No | 1 | B | 53 | 66 | 13 | 59 | 7 | 1 | 60 | 6 | 1 | 60 | 6 | 1 |
| RS156 | No | 1 | B | 51 | 64 | 13 | 59 | 5 | 1 | 59 | 5 | 1 | 59 | 5 | 1 |
| RS157 | No | 1 | B | 49 | 62 | 13 | 59 | 3 | 0 | 59 | 3 | 0 | 59 | 3 | 0 |
| RS158 | No | 1 | B | 50 | 63 | 13 | 60 | 3 | 0 | 60 | 3 | 0 | 60 | 3 | 0 |
| RS159 | No | 1 | B | 49 | 63 | 14 | 60 | 3 | 0 | 60 | 3 | 0 | 60 | 3 | 0 |
| RS160 | No | 1 | B | 49 | 62 | 13 | 60 | 2 | 0 | 60 | 2 | 0 | 59 | 3 | 0 |
| RS161 | No | 1 | C | 52 | 64 | 12 | 63 | 1 | 0 | 63 | 1 | 0 | 63 | 1 | 0 |
| RS162 | No | 1 | B | 48 | 61 | 13 | 59 | 2 | 0 | 59 | 2 | 0 | 59 | 2 | 0 |
| RS163 | No | 1 | B | 48 | 61 | 13 | 59 | 2 | 0 | 59 | 2 | 0 | 59 | 2 | 0 |
| RS164 | No | 1 | B | 48 | 60 | 12 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 |
| RS165 | No | 1 | B | 48 | 60 | 12 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 |
| RS166 | No | 1 | B | 47 | 59 | 12 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 |
| RS167 | No | 1 | D | 21 | 26 | 5 | 24 | 2 | 0 | 24 | 2 | 0 | 24 | 2 | 0 |
| RS168 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS169 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 |
| RS170 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RS171 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 | 47 | 1 | 0 | 47 | 1 | 0 |
| RS172 | No | 1 | B | 46 | 55 | 9 | 52 | 3 | 0 | 52 | 3 | 0 | 52 | 3 | 0 |
| RS173 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RS174 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RS175 | No | 1 | B | 47 | 60 | 13 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 |
| RS176 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RS177 | No | 1 | B | 46 | 52 | 6 | 51 | 1 | 0 | 51 | 1 | 0 | 51 | 1 | 0 |
| RS178 | No | 1 | B | 49 | 61 | 12 | 61 | 0 | 0 | 61 | 0 | 0 | 61 | 0 | 0 |
| RS179 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 | 54 | 2 | 0 | 54 | 2 | 0 |
| RS180 | No | 1 | B | 46 | 51 | 5 | 50 | 1 | 0 | 50 | 1 | 0 | 50 | 1 | 0 |
| RS181 | No | 1 | B | 46 | 55 | 9 | 53 | 2 | 0 | 53 | 2 | 0 | 53 | 2 | 0 |
| RS182 | No | 1 | B | 46 | 53 | 7 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 |
| RS183 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 |
| RS184 | No | 1 | C | 46 | 53 | 7 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 |
| RS185 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 | 53 | 3 | 0 | 53 | 3 | 0 |
| RS186 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS187 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RS188 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RS189 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RS190 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 | 54 | 2 | 0 | 54 | 2 | 0 |
| RS191 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS192 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS193 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 North**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS194 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 |
| RS195 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RS196 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 |
| RS197 | No | 1 | B | 46 | 51 | 5 | 45 | 6 | 1 | 45 | 6 | 1 | 45 | 6 | 1 |
| RS198 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RS199 | No | 1 | B | 46 | 57 | 11 | 53 | 4 | 0 | 53 | 4 | 0 | 53 | 4 | 0 |
| RS200 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 | 52 | 2 | 0 | 51 | 3 | 0 |
| RS201 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 | 53 | 3 | 0 | 52 | 4 | 0 |
| RS202 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 | 46 | 2 | 0 | 46 | 2 | 0 |
| RS203 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 47 | 2 | 0 |
| RS204 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS205 | No | 1 | B | 46 | 48 | 2 | 45 | 3 | 0 | 46 | 2 | 0 | 46 | 2 | 0 |
| RS206 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 |
| RS207 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 |
| RS208 | No | 1 | B | 46 | 53 | 7 | 50 | 3 | 0 | 50 | 3 | 0 | 50 | 3 | 0 |
| RS209 | No | 1 | B | 46 | 55 | 9 | 52 | 3 | 0 | 52 | 3 | 0 | 52 | 3 | 0 |
| RS210 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 |
| RS211 | No | 1 | B | 46 | 57 | 11 | 50 | 7 | 1 | 50 | 7 | 1 | 50 | 7 | 1 |
| RS212 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 |
| RS213 | No | 1 | B | 47 | 61 | 14 | 55 | 6 | 1 | 55 | 6 | 1 | 55 | 6 | 1 |
| RS214 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 |
| RS215 | No | 1 | B | 46 | 57 | 11 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 |
| RS216 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 44 | 2 | 0 |
| RS217 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS218 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 |
| RS219 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 |
| RS220 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 |
| RS221 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS222 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 |
| RS223 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 |
| RS224 | No | 1 | B | 46 | 47 | 1 | 44 | 3 | 0 | 44 | 3 | 0 | 44 | 3 | 0 |
| RS225 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 | 47 | 5 | 1 | 47 | 5 | 1 |
| RS226 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 |
| RS227 | No | 1 | B | 48 | 62 | 14 | 54 | 8 | 1 | 54 | 8 | 1 | 54 | 8 | 1 |
| RS228 | No | 1 | B | 46 | 57 | 11 | 54 | 3 | 0 | 54 | 3 | 0 | 54 | 3 | 0 |
| RS229 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 |
| RS230 | No | 1 | B | 47 | 61 | 14 | 54 | 7 | 1 | 54 | 7 | 1 | 54 | 7 | 1 |
| RS231 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RS232 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RS233 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 |
| RS234 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 47 | 2 | 0 |
| RS235 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RS236 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 |
| RS237 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RS238 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 |
| RS239 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RS240 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 |
| RS241 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 |
| RS242 | No | 1 | B | 46 | 57 | 11 | 54 | 3 | 0 | 54 | 3 | 0 | 55 | 2 | 0 |

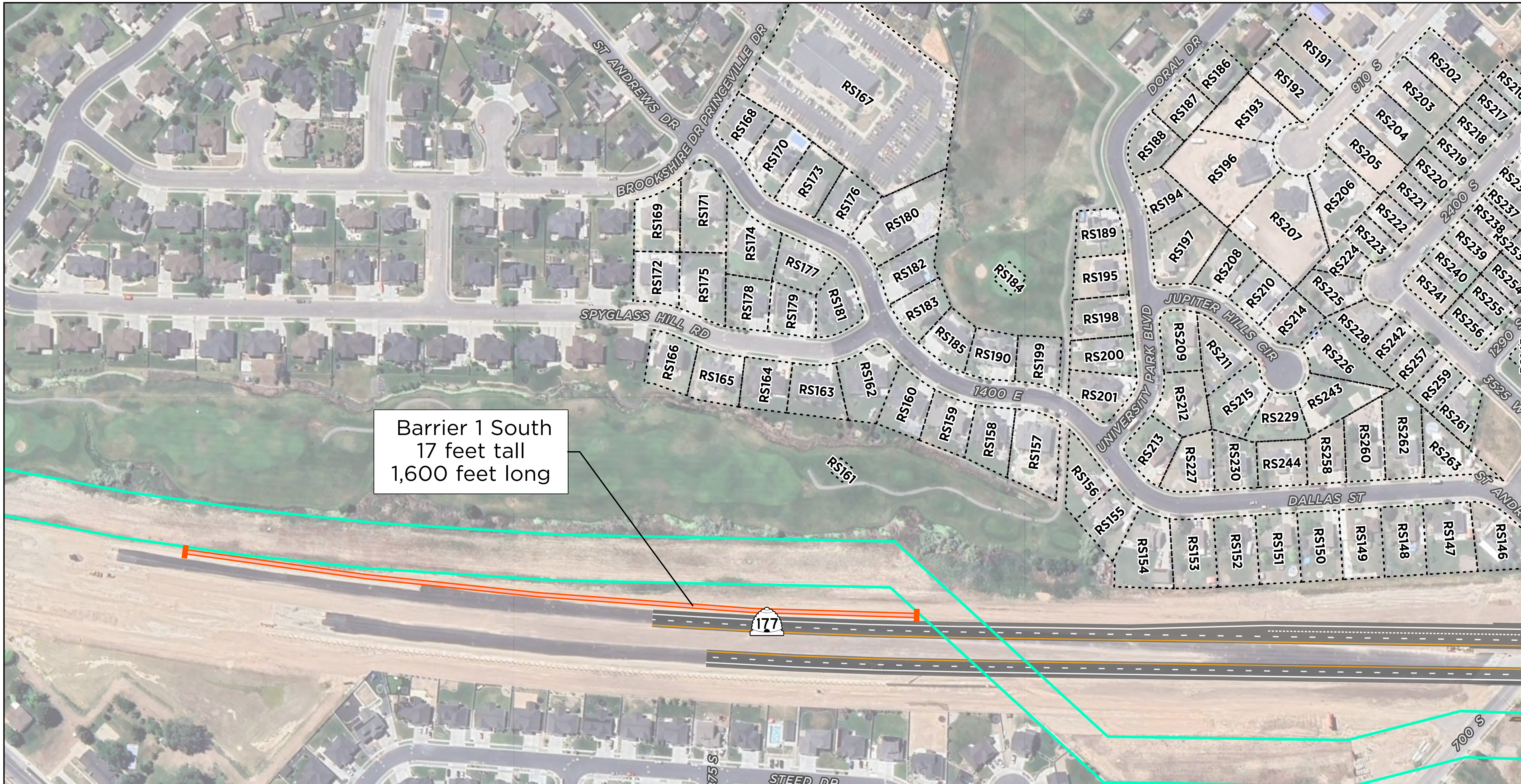
**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 North**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS243 | No | 1 | B | 46 | 57 | 11 | 51 | 6 | 1 | 52 | 5 | 1 | 52 | 5 | 1 |
| RS244 | No | 1 | B | 47 | 60 | 13 | 53 | 7 | 1 | 54 | 6 | 1 | 54 | 6 | 1 |
| RS245 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS246 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 |
| RS247 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 44 | 2 | 0 |
| RS248 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS249 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS250 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 |
| RS251 | No | 1 | B | 46 | 47 | 1 | 44 | 3 | 0 | 44 | 3 | 0 | 45 | 2 | 0 |
| RS252 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RS253 | No | 1 | B | 46 | 48 | 2 | 44 | 4 | 0 | 45 | 3 | 0 | 45 | 3 | 0 |
| RS254 | No | 1 | B | 46 | 48 | 2 | 45 | 3 | 0 | 45 | 3 | 0 | 45 | 3 | 0 |
| RS255 | No | 1 | B | 46 | 55 | 9 | 47 | 8 | 1 | 47 | 8 | 1 | 47 | 8 | 1 |
| RS256 | No | 1 | B | 46 | 52 | 6 | 46 | 6 | 1 | 46 | 6 | 1 | 46 | 6 | 1 |
| RS257 | No | 1 | B | 46 | 58 | 12 | 55 | 3 | 0 | 55 | 3 | 0 | 55 | 3 | 0 |
| RS258 | No | 1 | B | 46 | 60 | 14 | 54 | 6 | 1 | 54 | 6 | 1 | 54 | 6 | 1 |
| RS259 | No | 1 | B | 46 | 59 | 13 | 57 | 2 | 0 | 57 | 2 | 0 | 57 | 2 | 0 |
| RS260 | No | 1 | B | 46 | 60 | 14 | 56 | 4 | 0 | 56 | 4 | 0 | 56 | 4 | 0 |
| RS261 | No | 1 | B | 46 | 60 | 14 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 |
| RS262 | No | 1 | B | 47 | 61 | 14 | 57 | 4 | 0 | 57 | 4 | 0 | 57 | 4 | 0 |
| RS263 | No | 1 | B | 48 | 61 | 13 | 59 | 2 | 0 | 59 | 2 | 0 | 59 | 2 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 North**

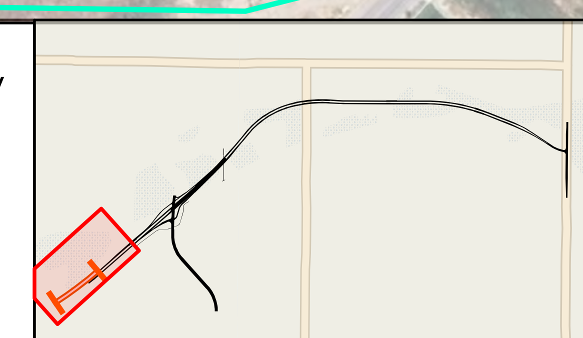
| | NAC | 17-Foot Barrier | 16-Foot Barrier | 15-Foot Barrier |
|---|---|---|---|---|
| | **Inputs – Overall** | | | |
| | Barrier Length (ft.) = | 1,169 | 1,169 | 1,194 |
| | Barrier Height (ft.) = | 17 | 16 | 15 |
| | Barrier Area (sq. ft.) = | 19,873 | 18,704 | 17,910 |
| | **Inputs – Category A, C, D, or E** | | | |
| | Barrier Height (ft.) = | n/a | n/a | n/a |
| | Barrier Length (ft.) = | n/a | n/a | n/a |
| | Barrier Area (ft.) = | n/a | n/a | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a | n/a | n/a |
| | Safety Barrier (linear ft.) = | n/a | n/a | n/a |
| | **Inputs – Category B** | | | |
| | Barrier Height (ft.) = | 17 | 16 | 15 |
| | Barrier Length (ft.) = | 1,169 | 1,169 | 1,194 |
| | Barrier Area (sq. ft.) = | 19,873 | 18,704 | 17,910 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 | 0 | 0 |
| | Safety Barrier (linear ft.) = | 1,169 | 1,169 | 1,194 |
| **Feasibility** | **Acoustic Feasibility** | | | |
| | Front Row Receptors = | 9 | 9 | 9 |
| | Front-Row Receptors with a 5 dBA Reduction = | 6 | 6 | 6 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 67% | 67% | 67% |
| | Acoustically Feasible = | **Yes** | **Yes** | **Yes** |
| **Reasonableness** | **Noise Reduction Design Goal** | | | |
| | Front Row Receptors = | 9 | 9 | 9 |
| | Front Row Receptors with 7 dBA Reduction = | 4 | 4 | 3 |
| | % of Front Row Reduced At Least 7 dBA = | 44% | 44% | 33% |
| | Meets Noise Reduction Design Goal = | **Yes** | **Yes** | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | | | |
| | Barrier Cost (Barrier area x 20) = | n/a | n/a | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a | n/a | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a | n/a | n/a |
| | Total Barrier Cost = | n/a | n/a | n/a |
| | Allowable Cost (length x 360) = | n/a | n/a | n/a |
| | Cost Reasonable = | **n/a** | **n/a** | **n/a** |
| | **Cost Effectiveness – Category B** | | | |
| | Barrier Cost (Barrier area x 20) = | $397,460 | $374,080 | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | $0 | $0 | n/a |
| | Safety Barrier (linear ft. x 125) = | $146,125 | $146,125 | n/a |
| | Total Barrier Cost = | $543,585 | $520,205 | n/a |
| | Allowable Cost (benefited x 30k) = | $660,000 | $660,000 | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | 22 | 22 | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | $24,708 | $23,646 | n/a |
| | Cost Reasonable = | **Yes** | **Yes** | **n/a** |
| | **Is Noise Barrier 1 North Feasible and Reasonable?** | **Yes** | **Yes** | **No** |




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Not Recommended for Balloting
Receptor Area
Benefited Receptor
Bureau of Reclamation Property

0 125 250 500 Feet



SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 1 South

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS145 | No | 1 | C | 49 | 61 | 12 | 61 | 0 | 0 |
| RS146 | No | 1 | B | 55 | 66 | 11 | 66 | 0 | 0 |
| RS147 | No | 1 | B | 53 | 66 | 13 | 66 | 0 | 0 |
| RS148 | No | 1 | B | 54 | 65 | 11 | 65 | 0 | 0 |
| RS149 | No | 1 | B | 54 | 64 | 10 | 64 | 0 | 0 |
| RS150 | No | 1 | B | 55 | 65 | 10 | 65 | 0 | 0 |
| RS151 | No | 1 | B | 55 | 66 | 11 | 66 | 0 | 0 |
| RS152 | No | 1 | B | 55 | 67 | 12 | 67 | 0 | 0 |
| RS153 | No | 1 | B | 55 | 68 | 13 | 68 | 0 | 0 |
| RS154 | No | 1 | B | 55 | 68 | 13 | 68 | 0 | 0 |
| RS155 | No | 1 | B | 53 | 66 | 13 | 66 | 0 | 0 |
| RS156 | No | 1 | B | 51 | 64 | 13 | 64 | 0 | 0 |
| RS157 | No | 1 | B | 49 | 62 | 13 | 62 | 0 | 0 |
| RS158 | No | 1 | B | 50 | 63 | 13 | 63 | 0 | 0 |
| RS159 | No | 1 | B | 49 | 63 | 14 | 62 | 1 | 0 |
| RS160 | No | 1 | B | 49 | 62 | 13 | 61 | 1 | 0 |
| RS161 | Yes | 1 | C | 52 | 64 | 12 | 61 | 3 | 0 |
| RS162 | No | 1 | B | 48 | 61 | 13 | 59 | 2 | 0 |
| RS163 | No | 1 | B | 48 | 61 | 13 | 59 | 2 | 0 |
| RS164 | No | 1 | B | 48 | 60 | 12 | 58 | 2 | 0 |
| RS165 | No | 1 | B | 48 | 60 | 12 | 57 | 3 | 0 |
| RS166 | No | 1 | B | 47 | 59 | 12 | 56 | 3 | 0 |
| RS167 | No | 1 | D | 21 | 26 | 5 | 26 | 0 | 0 |
| RS168 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RS169 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 |
| RS170 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RS171 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RS172 | No | 1 | B | 46 | 55 | 9 | 53 | 2 | 0 |
| RS173 | No | 1 | B | 46 | 51 | 5 | 50 | 1 | 0 |
| RS174 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 |
| RS175 | No | 1 | B | 47 | 60 | 13 | 58 | 2 | 0 |
| RS176 | No | 1 | B | 46 | 51 | 5 | 50 | 1 | 0 |
| RS177 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 |
| RS178 | No | 1 | B | 49 | 61 | 12 | 57 | 4 | 0 |
| RS179 | No | 1 | B | 46 | 56 | 10 | 55 | 1 | 0 |
| RS180 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 |
| RS181 | No | 1 | B | 46 | 55 | 9 | 52 | 3 | 0 |
| RS182 | No | 1 | B | 46 | 53 | 7 | 50 | 3 | 0 |
| RS183 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 |
| RS184 | No | 1 | C | 46 | 53 | 7 | 52 | 1 | 0 |
| RS185 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RS186 | No | 1 | B | 46 | 49 | 3 | 49 | 0 | 0 |
| RS187 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RS188 | No | 1 | B | 46 | 52 | 6 | 51 | 1 | 0 |
| RS189 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RS190 | No | 1 | B | 46 | 56 | 10 | 55 | 1 | 0 |
| RS191 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS192 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS193 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 1 South

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS194 | No | 1 | B | 46 | 51 | 5 | 50 | 1 | 0 |
| RS195 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RS196 | No | 1 | B | 46 | 52 | 6 | 51 | 1 | 0 |
| RS197 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RS198 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RS199 | No | 1 | B | 46 | 57 | 11 | 56 | 1 | 0 |
| RS200 | No | 1 | B | 46 | 54 | 8 | 53 | 1 | 0 |
| RS201 | No | 1 | B | 46 | 56 | 10 | 56 | 0 | 0 |
| RS202 | No | 1 | B | 46 | 48 | 2 | 48 | 0 | 0 |
| RS203 | No | 1 | B | 46 | 49 | 3 | 49 | 0 | 0 |
| RS204 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RS205 | No | 1 | B | 46 | 48 | 2 | 48 | 0 | 0 |
| RS206 | No | 1 | B | 46 | 49 | 3 | 49 | 0 | 0 |
| RS207 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RS208 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |
| RS209 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RS210 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RS211 | No | 1 | B | 46 | 57 | 11 | 57 | 0 | 0 |
| RS212 | No | 1 | B | 46 | 56 | 10 | 56 | 0 | 0 |
| RS213 | No | 1 | B | 47 | 61 | 14 | 60 | 1 | 0 |
| RS214 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RS215 | No | 1 | B | 46 | 57 | 11 | 57 | 0 | 0 |
| RS216 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 |
| RS217 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS218 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS219 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 |
| RS220 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS221 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RS222 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS223 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS224 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RS225 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RS226 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RS227 | No | 1 | B | 48 | 62 | 14 | 62 | 0 | 0 |
| RS228 | No | 1 | B | 46 | 57 | 11 | 57 | 0 | 0 |
| RS229 | No | 1 | B | 46 | 56 | 10 | 56 | 0 | 0 |
| RS230 | No | 1 | B | 47 | 61 | 14 | 60 | 1 | 0 |
| RS231 | No | 1 | B | 46 | 49 | 3 | 49 | 0 | 0 |
| RS232 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RS233 | No | 1 | B | 46 | 49 | 3 | 49 | 0 | 0 |
| RS234 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RS235 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RS236 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RS237 | No | 1 | B | 46 | 52 | 6 | 51 | 1 | 0 |
| RS238 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RS239 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RS240 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RS241 | No | 1 | B | 46 | 57 | 11 | 57 | 0 | 0 |
| RS242 | No | 1 | B | 46 | 57 | 11 | 57 | 0 | 0 |

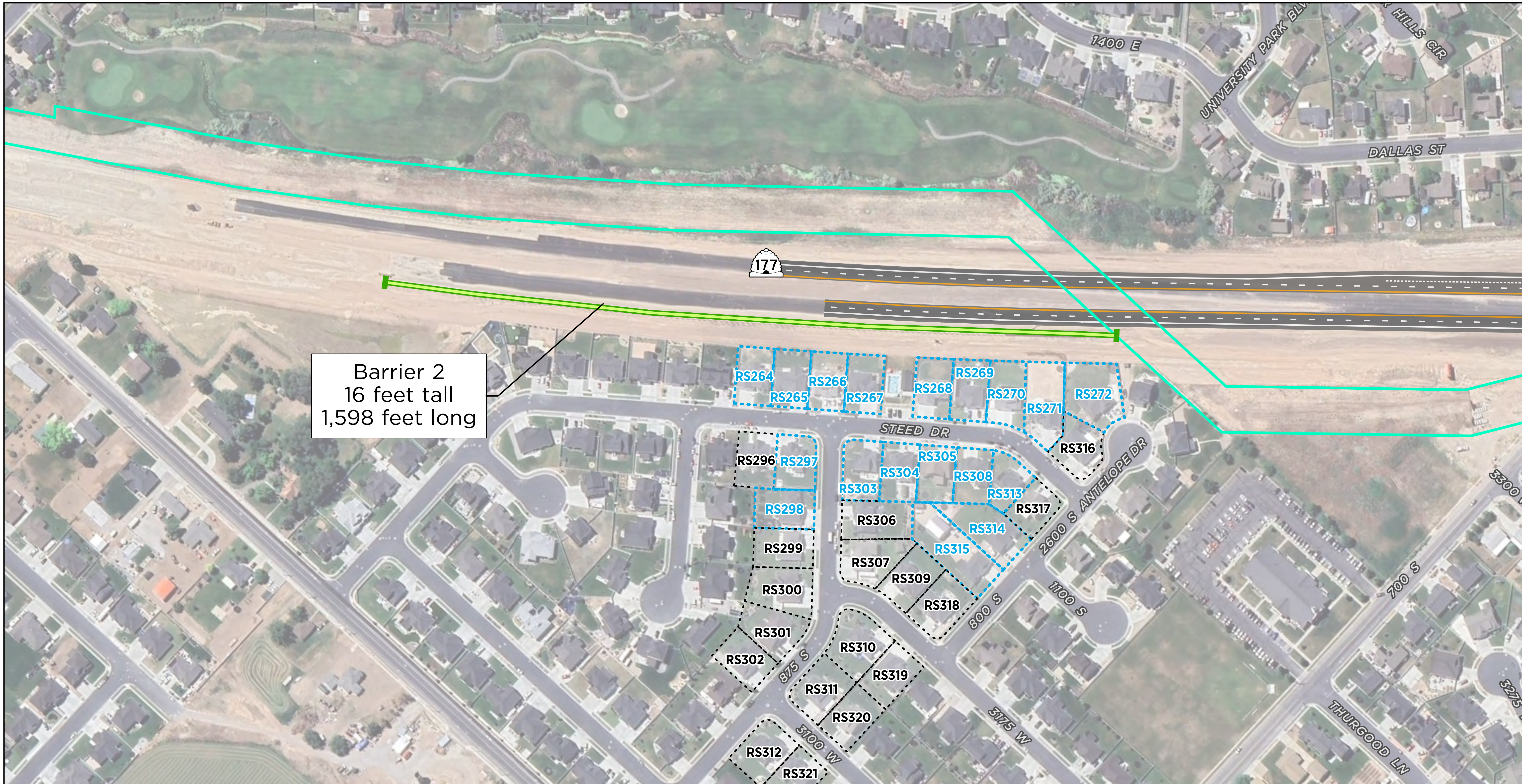
**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 1 South**

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS243 | No | 1 | B | 46 | 57 | 11 | 57 | 0 | 0 |
| RS244 | No | 1 | B | 47 | 60 | 13 | 60 | 0 | 0 |
| RS245 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS246 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS247 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS248 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |
| RS249 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |
| RS250 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RS251 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RS252 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS253 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RS254 | No | 1 | B | 46 | 48 | 2 | 48 | 0 | 0 |
| RS255 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RS256 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RS257 | No | 1 | B | 46 | 58 | 12 | 58 | 0 | 0 |
| RS258 | No | 1 | B | 46 | 60 | 14 | 60 | 0 | 0 |
| RS259 | No | 1 | B | 46 | 59 | 13 | 59 | 0 | 0 |
| RS260 | No | 1 | B | 46 | 60 | 14 | 60 | 0 | 0 |
| RS261 | No | 1 | B | 46 | 60 | 14 | 59 | 1 | 0 |
| RS262 | No | 1 | B | 47 | 61 | 14 | 61 | 0 | 0 |
| RS263 | No | 1 | B | 48 | 61 | 13 | 61 | 0 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 1 South

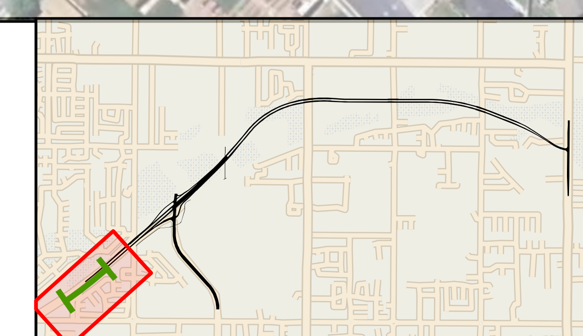
| | NAC | 17-Foot Barrier |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 1,600 |
| | Barrier Height (ft.) = | 17 |
| | Barrier Area (sq. ft.) = | 27,200 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | 17 |
| | Barrier Length (ft.) = | 350 |
| | Barrier Area (ft.) = | 5,950 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 350 |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 17 |
| | Barrier Length (ft.) = | 1,250 |
| | Barrier Area (sq. ft.) = | 21,250 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 1,250 |
| Feasibility | **Acoustic Feasibility** | |
| | Front Row Receptors = | 1 |
| | Front-Row Receptors with a 5 dBA Reduction = | 0 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 0% |
| | Acoustically Feasible = | **No** |
| Reasonableness | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 1 |
| | Front Row Receptors with 7 dBA Reduction = | 0 |
| | % of Front Row Reduced At Least 7 dBA = | 0% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |
| | Is Noise Barrier 1 South Feasible and Reasonable? | No |




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Remain-in-Place
Benefited Receptor
Receptor Area
Bureau of Reclamation Property

0 125 250 500 Feet



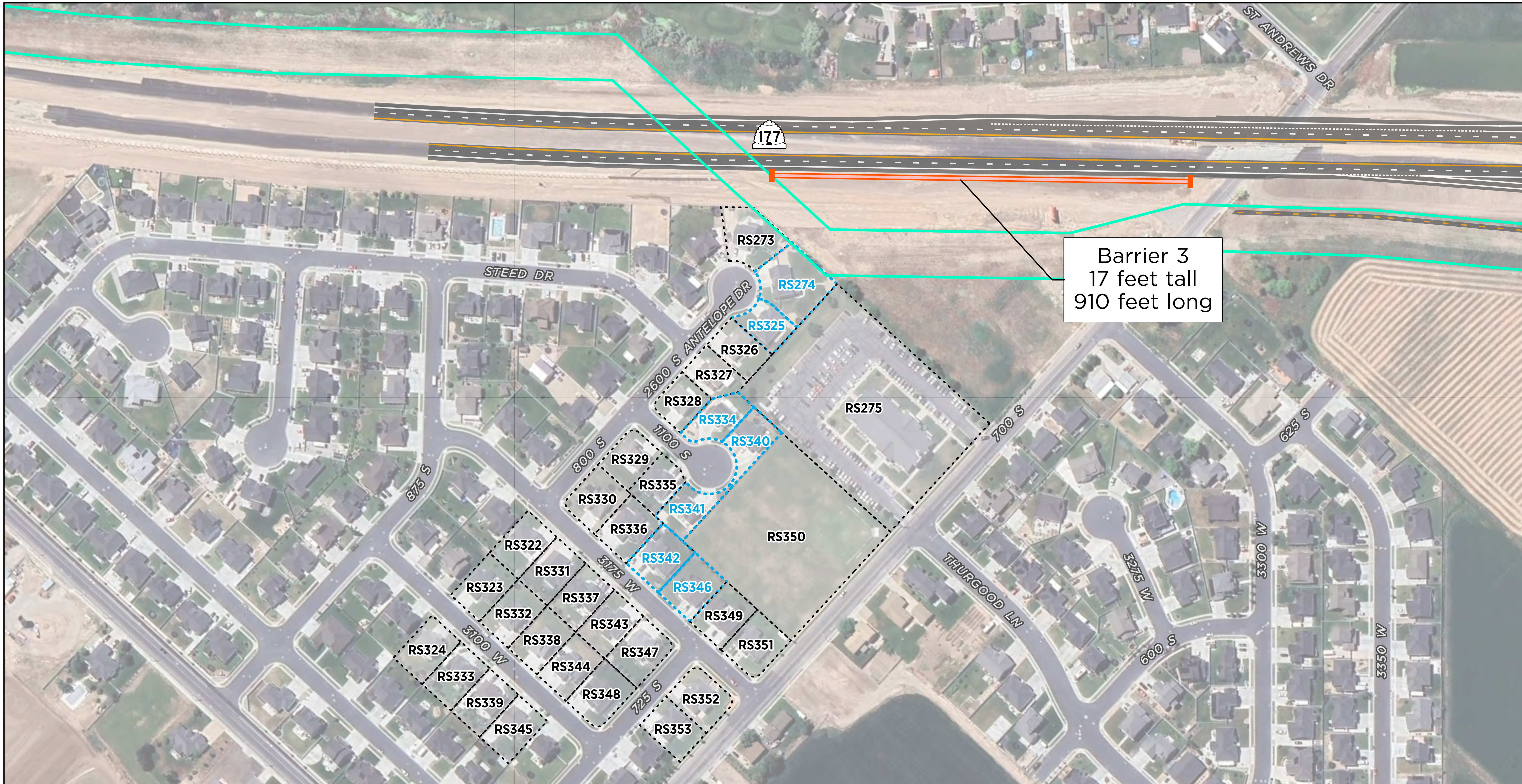
SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 2

| NAC | | | | | | | Existing 16-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future W/O Barrier dBA | Increase dBA | dBA | Reduction dBA | Benefited Receptors |
| RS264 | Yes | 1 | B | 51 | 76 | 25 | 63 | 13 | 1 |
| RS265 | Yes | 1 | B | 51 | 76 | 25 | 62 | 14 | 1 |
| RS266 | Yes | 1 | B | 51 | 75 | 24 | 63 | 12 | 1 |
| RS267 | Yes | 1 | B | 51 | 75 | 24 | 63 | 12 | 1 |
| RS268 | Yes | 1 | B | 51 | 75 | 24 | 63 | 12 | 1 |
| RS269 | Yes | 1 | B | 52 | 75 | 23 | 64 | 11 | 1 |
| RS270 | Yes | 1 | B | 52 | 74 | 22 | 65 | 9 | 1 |
| RS271 | Yes | 1 | B | 53 | 73 | 20 | 67 | 6 | 1 |
| RS272 | Yes | 1 | B | 56 | 74 | 18 | 69 | 5 | 1 |
| RS296 | No | 1 | B | 46 | 60 | 14 | 56 | 4 | 0 |
| RS297 | No | 1 | B | 46 | 59 | 13 | 52 | 7 | 1 |
| RS298 | No | 1 | B | 46 | 50 | 4 | 45 | 5 | 1 |
| RS299 | No | 1 | B | 46 | 49 | 3 | 45 | 4 | 0 |
| RS300 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RS301 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS302 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 |
| RS303 | No | 1 | B | 46 | 62 | 16 | 54 | 8 | 1 |
| RS304 | No | 1 | B | 46 | 64 | 18 | 54 | 10 | 1 |
| RS305 | No | 1 | B | 46 | 60 | 14 | 53 | 7 | 1 |
| RS306 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 |
| RS307 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 |
| RS308 | No | 1 | B | 46 | 62 | 16 | 53 | 9 | 1 |
| RS309 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 |
| RS310 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RS311 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 |
| RS312 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RS313 | No | 1 | B | 46 | 60 | 14 | 55 | 5 | 1 |
| RS314 | No | 1 | B | 46 | 53 | 7 | 48 | 5 | 1 |
| RS315 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 |
| RS316 | No | 1 | B | 48 | 65 | 17 | 61 | 4 | 0 |
| RS317 | No | 1 | B | 46 | 60 | 14 | 56 | 4 | 0 |
| RS318 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RS319 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RS320 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS321 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 2

| | NAC | Existing 16-Foot Barrier |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 1,598 |
| | Barrier Height (ft.) = | 16 |
| | Barrier Area (sq. ft.) = | 25,568 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | n/a |
| | Barrier Length (ft.) = | n/a |
| | Barrier Area (ft.) = | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | Safety Barrier (linear ft.) = | n/a |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 16 |
| | Barrier Length (ft.) = | 1,598 |
| | Barrier Area (sq. ft.) = | 25,568 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 0 |
| Feasibility | **Acoustic Feasibility** | |
| | Front Row Receptors = | 9 |
| | Front-Row Receptors with a 5 dBA Reduction = | 9 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 100% |
| | Acoustically Feasible = | **Yes** |
| Reasonableness | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 9 |
| | Front Row Receptors with 7 dBA Reduction = | 7 |
| | % of Front Row Reduced At Least 7 dBA = | 78% |
| | Meets Noise Reduction Design Goal = | **Yes** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Is Noise Barrier 2 Feasible?** | **Yes** |

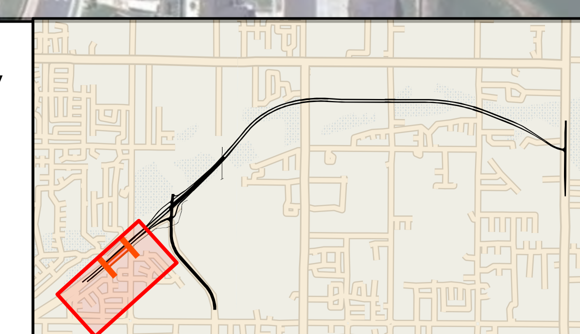



**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Not Recommended for Balloting
Benefited Receptor
Receptor Area
Bureau of Reclamation Property

N

0 125 250 500 Feet



SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 3

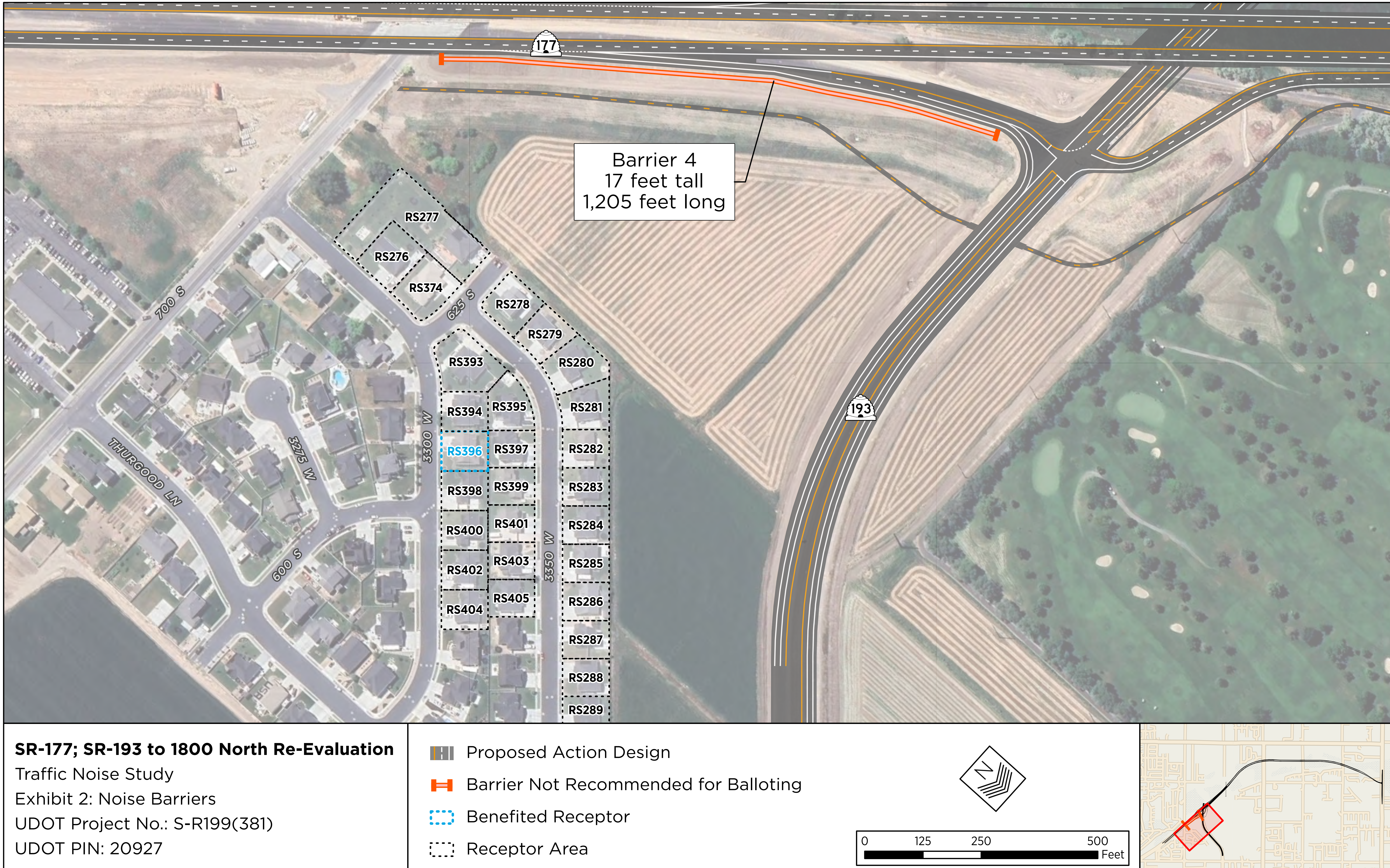
| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS273 | Yes | 1 | B | 61 | 74 | 13 | 72 | 2 | 0 |
| RS274 | Yes | 1 | B | 56 | 70 | 14 | 65 | 5 | 1 |
| RS275 | Yes | 1 | D | 34 | 39 | 5 | 36 | 3 | 0 |
| RS322 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 |
| RS323 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RS324 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 |
| RS325 | No | 1 | B | 49 | 63 | 14 | 56 | 7 | 1 |
| RS326 | No | 1 | B | 46 | 58 | 12 | 54 | 4 | 0 |
| RS327 | No | 1 | B | 46 | 58 | 12 | 54 | 4 | 0 |
| RS328 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RS329 | No | 1 | B | 46 | 55 | 9 | 52 | 3 | 0 |
| RS330 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 |
| RS331 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 |
| RS332 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RS333 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RS334 | No | 1 | B | 46 | 59 | 13 | 54 | 5 | 1 |
| RS335 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RS336 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS337 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RS338 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RS339 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 |
| RS340 | No | 1 | B | 46 | 60 | 14 | 54 | 6 | 1 |
| RS341 | No | 1 | B | 46 | 57 | 11 | 51 | 6 | 1 |
| RS342 | No | 1 | B | 46 | 53 | 7 | 48 | 5 | 1 |
| RS343 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RS344 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RS345 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 |
| RS346 | No | 1 | B | 47 | 55 | 8 | 50 | 5 | 1 |
| RS347 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RS348 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |
| RS349 | No | 1 | B | 52 | 55 | 3 | 53 | 2 | 0 |
| RS350 | No | 1 | C | 58 | 59 | 1 | 59 | 0 | 0 |
| RS351 | No | 1 | B | 56 | 58 | 2 | 57 | 1 | 0 |
| RS352 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RS353 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 3

| | NAC | 17-Foot Barrier |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 910 |
| | Barrier Height (ft.) = | 17 |
| | Barrier Area (sq. ft.) = | 15,470 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | n/a |
| | Barrier Length (ft.) = | n/a |
| | Barrier Area (ft.) = | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | Safety Barrier (linear ft.) = | n/a |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 17 |
| | Barrier Length (ft.) = | 910 |
| | Barrier Area (sq. ft.) = | 15,470 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 910 |
| Feasibility | **Acoustic Feasibility** | |
| | Front Row Receptors = | 3 |
| | Front-Row Receptors with a 5 dBA Reduction = | 1 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 33% |
| | Acoustically Feasible = | **No** |
| Reasonableness | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 3 |
| | Front Row Receptors with 7 dBA Reduction = | 0 |
| | % of Front Row Reduced At Least 7 dBA = | 0% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |

Is Noise Barrier 3 Feasible and Reasonable? No




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 4

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS276 | Yes | 1 | B | 52 | 66 | 14 | 64 | 2 | 0 |
| RS277 | Yes | 1 | B | 52 | 66 | 14 | 64 | 2 | 0 |
| RS278 | Yes | 1 | B | 46 | 59 | 13 | 56 | 3 | 0 |
| RS279 | Yes | 1 | B | 50 | 63 | 13 | 60 | 3 | 0 |
| RS280 | No | 1 | B | 52 | 61 | 9 | 60 | 1 | 0 |
| RS281 | No | 1 | B | 53 | 61 | 8 | 60 | 1 | 0 |
| RS282 | No | 1 | B | 53 | 60 | 7 | 60 | 0 | 0 |
| RS283 | No | 1 | B | 53 | 60 | 7 | 60 | 0 | 0 |
| RS284 | No | 1 | B | 54 | 60 | 6 | 60 | 0 | 0 |
| RS285 | No | 1 | B | 54 | 61 | 7 | 60 | 1 | 0 |
| RS286 | No | 1 | B | 54 | 60 | 6 | 60 | 0 | 0 |
| RS287 | No | 1 | B | 54 | 60 | 6 | 60 | 0 | 0 |
| RS288 | No | 1 | B | 55 | 62 | 7 | 61 | 1 | 0 |
| RS289 | No | 1 | B | 55 | 62 | 7 | 61 | 1 | 0 |
| RS290 | No | 1 | B | 55 | 61 | 6 | 61 | 0 | 0 |
| RS291 | No | 1 | B | 55 | 61 | 6 | 61 | 0 | 0 |
| RS374 | No | 1 | B | 49 | 64 | 15 | 63 | 1 | 0 |
| RS393 | No | 1 | B | 46 | 59 | 13 | 57 | 2 | 0 |
| RS394 | No | 1 | B | 46 | 55 | 9 | 52 | 3 | 0 |
| RS395 | No | 1 | B | 46 | 54 | 8 | 53 | 1 | 0 |
| RS396 | No | 1 | B | 46 | 52 | 6 | 46 | 6 | 1 |
| RS397 | No | 1 | B | 46 | 53 | 7 | 52 | 1 | 0 |
| RS398 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 |
| RS399 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RS400 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 |
| RS401 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RS402 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RS403 | No | 1 | B | 46 | 51 | 5 | 49 | 2 | 0 |
| RS404 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RS405 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 4

| NAC | 17-Foot Barrier |
|---|---|

| | | |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 1,205 |
| | Barrier Height (ft.) = | 17 |
| | Barrier Area (sq. ft.) = | 20,485 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | n/a |
| | Barrier Length (ft.) = | n/a |
| | Barrier Area (ft.) = | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | Safety Barrier (linear ft.) = | n/a |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 17 |
| | Barrier Length (ft.) = | 1,205 |
| | Barrier Area (sq. ft.) = | 20,485 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 1,205 |
| Feasibility | **Acoustic Feasibility** | |
| | Front Row Receptors = | 4 |
| | Front-Row Receptors with a 5 dBA Reduction = | 0 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 0% |
| | Acoustically Feasible = | **No** |
| Reasonableness | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 4 |
| | Front Row Receptors with 7 dBA Reduction = | 0 |
| | % of Front Row Reduced At Least 7 dBA = | 0% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |

**Is Noise Barrier 4 Feasible and Reasonable?** No


**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Not Recommended for Balloting
Receptor Area

0 125 250 500 Feet

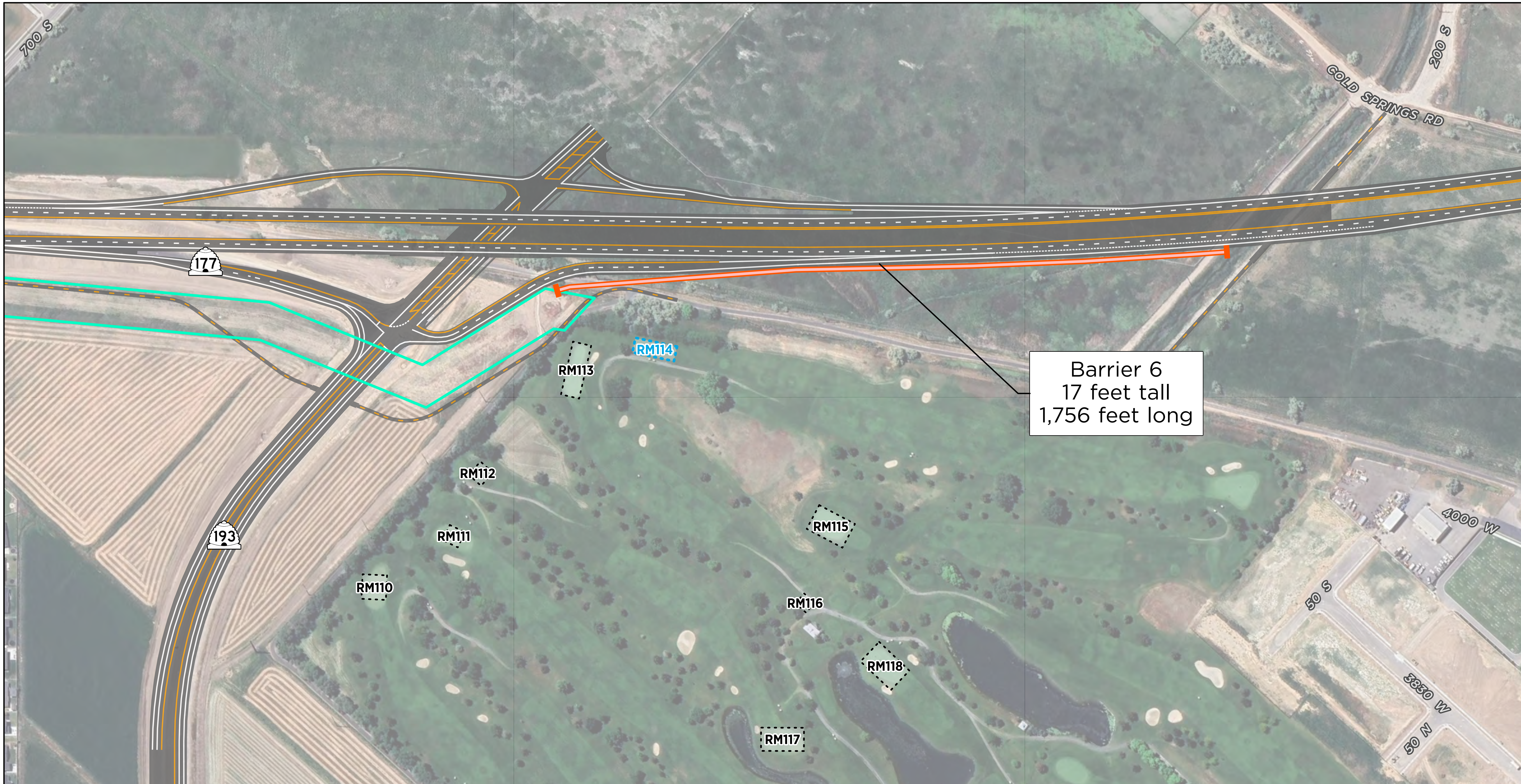
SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 5

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RS036 | Yes | 1 | B | 65 | 65 | 0 | 65 | 0 | 0 |
| RS037 | Yes | 1 | B | 58 | 61 | 3 | 60 | 1 | 0 |
| RS038 | Yes | 1 | B | 55 | 59 | 4 | 58 | 1 | 0 |
| RS039 | Yes | 1 | B | 53 | 59 | 6 | 57 | 2 | 0 |
| RS040 | Yes | 1 | B | 51 | 59 | 8 | 57 | 2 | 0 |
| RS041 | Yes | 1 | B | 49 | 58 | 9 | 56 | 2 | 0 |
| RS117 | No | 1 | B | 52 | 57 | 5 | 55 | 2 | 0 |
| RS118 | No | 1 | B | 50 | 57 | 7 | 55 | 2 | 0 |
| RS119 | No | 1 | B | 47 | 56 | 9 | 54 | 2 | 0 |
| RS120 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 |
| RS135 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 |
| RS136 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 |
| RS137 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 |
| RS138 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 |
| RS139 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 |
| RS140 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 |
| RS141 | No | 1 | B | 46 | 59 | 13 | 57 | 2 | 0 |
| RS142 | No | 1 | B | 46 | 59 | 13 | 57 | 2 | 0 |
| RS143 | Yes | 1 | B | 46 | 60 | 14 | 58 | 2 | 0 |
| RS144 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 5

| | NAC | 17-Foot Barrier |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 1,739 |
| | Barrier Height (ft.) = | 17 |
| | Barrier Area (sq. ft.) = | 29,563 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | n/a |
| | Barrier Length (ft.) = | n/a |
| | Barrier Area (ft.) = | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | Safety Barrier (linear ft.) = | n/a |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 17 |
| | Barrier Length (ft.) = | 1,739 |
| | Barrier Area (sq. ft.) = | 29,563 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 1,739 |
| Feasibility | **Acoustic Feasibility** | |
| | Front Row Receptors = | 7 |
| | Front-Row Receptors with a 5 dBA Reduction = | 0 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 0% |
| | Acoustically Feasible = | **No** |
| Reasonableness | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 7 |
| | Front Row Receptors with 7 dBA Reduction = | 0 |
| | % of Front Row Reduced At Least 7 dBA = | 0% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |
| | Is Noise Barrier 5 Feasible and Reasonable? | No |




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

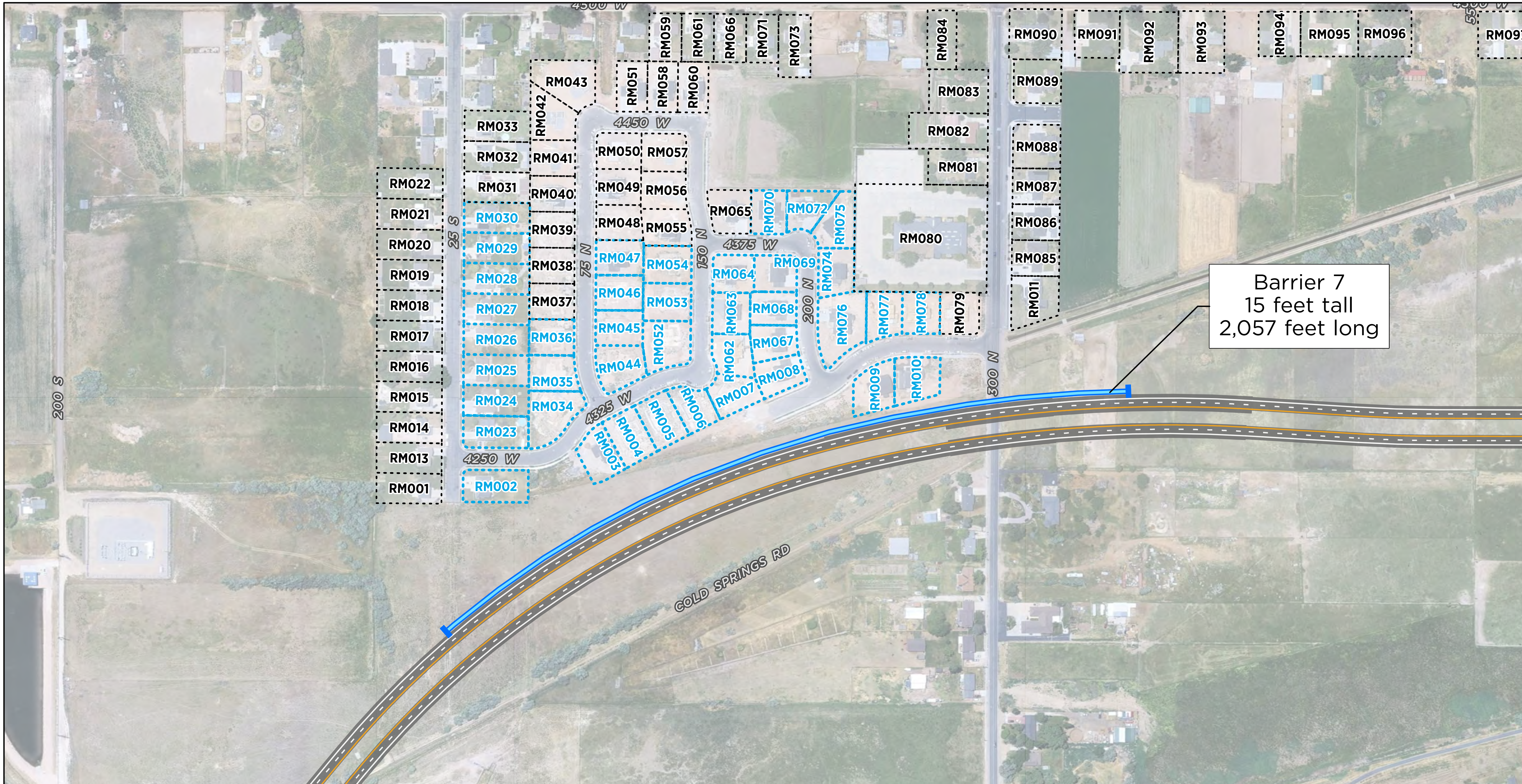
**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 6**

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM110 | Yes | 1 | C | 55 | 63 | 8 | 63 | 0 | 0 |
| RM111 | Yes | 1 | C | 53 | 63 | 10 | 63 | 0 | 0 |
| RM112 | Yes | 1 | C | 53 | 65 | 12 | 65 | 0 | 0 |
| RM113 | Yes | 1 | C | 51 | 68 | 17 | 66 | 2 | 0 |
| RM114 | Yes | 1 | C | 49 | 69 | 20 | 64 | 5 | 1 |
| RM115 | Yes | 1 | C | 46 | 61 | 15 | 57 | 4 | 0 |
| RM116 | Yes | 1 | C | 46 | 58 | 12 | 56 | 2 | 0 |
| RM117 | Yes | 1 | C | 46 | 55 | 9 | 53 | 2 | 0 |
| RM118 | Yes | 1 | C | 46 | 56 | 10 | 54 | 2 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 6**

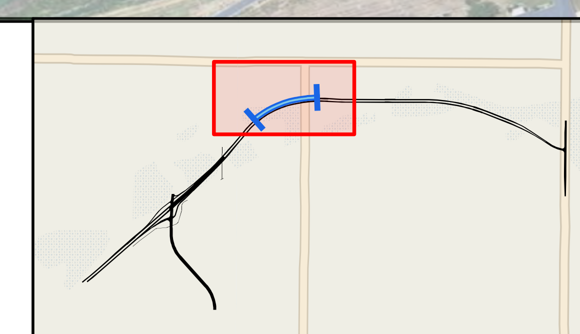
| | NAC | 17-Foot Barrier |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 1,756 |
| | Barrier Height (ft.) = | 17 |
| | Barrier Area (sq. ft.) = | 29,852 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | 17 |
| | Barrier Length (ft.) = | 1,756 |
| | Barrier Area (ft.) = | 29,852 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 1,756 |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 0 |
| | Barrier Length (ft.) = | 0 |
| | Barrier Area (sq. ft.) = | 0 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 0 |
| **Feasibility** | **Acoustic Feasibility** | |
| | Front Row Receptors = | 9 |
| | Front-Row Receptors with a 5 dBA Reduction = | 1 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 11% |
| | Acoustically Feasible = | **No** |
| **Reasonableness** | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 9 |
| | Front Row Receptors with 7 dBA Reduction = | 0 |
| | % of Front Row Reduced At Least 7 dBA = | 0% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Is Noise Barrier 6 Feasible and Reasonable?** | **No** |




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Recommended for Balloting
Receptor Area
Benefited Receptor

0 125 250 500 Feet



**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 7**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | | 14-Foot Barrier | | | 13-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM001 | Yes | 1 | B | 46 | 60 | 14 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 | 56 | 4 | 0 | 56 | 4 | 0 |
| RM002 | Yes | 1 | B | 46 | 66 | 20 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 |
| RM003 | Yes | 1 | B | 46 | 68 | 22 | 59 | 9 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 60 | 8 | 1 |
| RM004 | Yes | 1 | B | 46 | 67 | 21 | 58 | 9 | 1 | 58 | 9 | 1 | 58 | 9 | 1 | 59 | 8 | 1 | 59 | 8 | 1 |
| RM005 | Yes | 1 | B | 46 | 68 | 22 | 58 | 10 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 60 | 8 | 1 |
| RM006 | Yes | 1 | B | 46 | 68 | 22 | 58 | 10 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 60 | 8 | 1 |
| RM007 | Yes | 1 | B | 46 | 68 | 22 | 59 | 9 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 60 | 8 | 1 |
| RM008 | Yes | 1 | B | 46 | 65 | 19 | 55 | 10 | 1 | 55 | 10 | 1 | 56 | 9 | 1 | 56 | 9 | 1 | 56 | 9 | 1 |
| RM009 | Yes | 1 | B | 47 | 67 | 20 | 60 | 7 | 1 | 60 | 7 | 1 | 60 | 7 | 1 | 61 | 6 | 1 | 61 | 6 | 1 |
| RM010 | Yes | 1 | B | 50 | 67 | 17 | 61 | 6 | 1 | 61 | 6 | 1 | 62 | 5 | 1 | 62 | 5 | 1 | 62 | 5 | 1 |
| RM011 | Yes | 1 | B | 46 | 61 | 15 | 58 | 3 | 0 | 59 | 2 | 0 | 59 | 2 | 0 | 58 | 3 | 0 | 59 | 2 | 0 |
| RM012 | No | 1 | B | 46 | 65 | 19 | 64 | 1 | 0 | 64 | 1 | 0 | 64 | 1 | 0 | 64 | 1 | 0 | 64 | 1 | 0 |
| RM013 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 | 54 | 3 | 0 | 54 | 3 | 0 |
| RM014 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 | 54 | 2 | 0 | 54 | 2 | 0 | 53 | 3 | 0 | 53 | 3 | 0 |
| RM015 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 |
| RM016 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 52 | 2 | 0 | 51 | 3 | 0 | 51 | 3 | 0 |
| RM017 | No | 1 | B | 46 | 53 | 7 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 | 50 | 3 | 0 | 51 | 2 | 0 |
| RM018 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RM019 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 |
| RM020 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 49 | 2 | 0 | 49 | 2 | 0 | 49 | 2 | 0 |
| RM021 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RM022 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RM023 | No | 1 | B | 46 | 64 | 18 | 54 | 10 | 1 | 54 | 10 | 1 | 54 | 10 | 1 | 54 | 10 | 1 | 55 | 9 | 1 |
| RM024 | No | 1 | B | 46 | 61 | 15 | 53 | 8 | 1 | 53 | 8 | 1 | 53 | 8 | 1 | 53 | 8 | 1 | 54 | 7 | 1 |
| RM025 | No | 1 | B | 46 | 59 | 13 | 51 | 8 | 1 | 51 | 8 | 1 | 52 | 7 | 1 | 52 | 7 | 1 | 52 | 7 | 1 |
| RM026 | No | 1 | B | 46 | 57 | 11 | 50 | 7 | 1 | 50 | 7 | 1 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 |
| RM027 | No | 1 | B | 46 | 56 | 10 | 49 | 7 | 1 | 50 | 6 | 1 | 50 | 6 | 1 | 50 | 6 | 1 | 51 | 5 | 1 |
| RM028 | No | 1 | B | 46 | 54 | 8 | 48 | 6 | 1 | 49 | 5 | 1 | 49 | 5 | 1 | 49 | 5 | 1 | 50 | 4 | 0 |
| RM029 | No | 1 | B | 46 | 53 | 7 | 48 | 5 | 1 | 48 | 5 | 1 | 48 | 5 | 1 | 48 | 5 | 1 | 49 | 4 | 0 |
| RM030 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 | 47 | 5 | 1 | 47 | 5 | 1 | 48 | 4 | 0 | 48 | 4 | 0 |
| RM031 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 48 | 3 | 0 |
| RM032 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RM033 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 | 49 | 3 | 0 |
| RM034 | No | 1 | B | 46 | 66 | 20 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 57 | 9 | 1 | 57 | 9 | 1 |
| RM035 | No | 1 | B | 46 | 57 | 11 | 52 | 5 | 1 | 52 | 5 | 1 | 52 | 5 | 1 | 52 | 5 | 1 | 52 | 5 | 1 |
| RM036 | No | 1 | B | 46 | 54 | 8 | 49 | 5 | 1 | 49 | 5 | 1 | 49 | 5 | 1 | 49 | 5 | 1 | 50 | 4 | 0 |
| RM037 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 |
| RM038 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RM039 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 |
| RM040 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 |
| RM041 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 |
| RM042 | No | 1 | B | 47 | 50 | 3 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RM043 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 |
| RM044 | No | 1 | B | 46 | 61 | 15 | 51 | 10 | 1 | 51 | 10 | 1 | 52 | 9 | 1 | 52 | 9 | 1 | 52 | 9 | 1 |
| RM045 | No | 1 | B | 46 | 59 | 13 | 50 | 9 | 1 | 50 | 9 | 1 | 51 | 8 | 1 | 51 | 8 | 1 | 51 | 8 | 1 |
| RM046 | No | 1 | B | 46 | 54 | 8 | 48 | 6 | 1 | 48 | 6 | 1 | 48 | 6 | 1 | 48 | 6 | 1 | 49 | 5 | 1 |
| RM047 | No | 1 | B | 46 | 53 | 7 | 48 | 5 | 1 | 48 | 5 | 1 | 48 | 5 | 1 | 48 | 5 | 1 | 48 | 5 | 1 |
| RM048 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 |
| RM049 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 48 | 3 | 0 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 7**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | | 14-Foot Barrier | | | 13-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM050 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 48 | 2 | 0 |
| RM051 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 49 | 1 | 0 |
| RM052 | No | 1 | B | 46 | 58 | 12 | 49 | 9 | 1 | 49 | 9 | 1 | 50 | 8 | 1 | 50 | 8 | 1 | 51 | 7 | 1 |
| RM053 | No | 1 | B | 46 | 53 | 7 | 47 | 6 | 1 | 47 | 6 | 1 | 48 | 5 | 1 | 47 | 6 | 1 | 48 | 5 | 1 |
| RM054 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 | 47 | 5 | 1 | 47 | 5 | 1 | 46 | 6 | 1 | 47 | 5 | 1 |
| RM055 | No | 1 | B | 46 | 50 | 4 | 46 | 4 | 0 | 46 | 4 | 0 | 46 | 4 | 0 | 46 | 4 | 0 | 47 | 3 | 0 |
| RM056 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 | 47 | 2 | 0 |
| RM057 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 | 47 | 2 | 0 |
| RM058 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RM059 | No | 1 | B | 50 | 53 | 3 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 |
| RM060 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 |
| RM061 | No | 1 | B | 49 | 53 | 4 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 | 52 | 1 | 0 |
| RM062 | No | 1 | B | 46 | 62 | 16 | 52 | 10 | 1 | 52 | 10 | 1 | 53 | 9 | 1 | 53 | 9 | 1 | 53 | 9 | 1 |
| RM063 | No | 1 | B | 46 | 58 | 12 | 50 | 8 | 1 | 50 | 8 | 1 | 50 | 8 | 1 | 51 | 7 | 1 | 51 | 7 | 1 |
| RM064 | No | 1 | B | 46 | 56 | 10 | 48 | 8 | 1 | 48 | 8 | 1 | 48 | 8 | 1 | 49 | 7 | 1 | 49 | 7 | 1 |
| RM065 | No | 1 | B | 46 | 57 | 11 | 54 | 3 | 0 | 54 | 3 | 0 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 |
| RM066 | No | 1 | B | 49 | 53 | 4 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 |
| RM067 | No | 1 | B | 46 | 61 | 15 | 51 | 10 | 1 | 51 | 10 | 1 | 51 | 10 | 1 | 52 | 9 | 1 | 52 | 9 | 1 |
| RM068 | No | 1 | B | 46 | 57 | 11 | 49 | 8 | 1 | 49 | 8 | 1 | 49 | 8 | 1 | 50 | 7 | 1 | 50 | 7 | 1 |
| RM069 | No | 1 | B | 46 | 53 | 7 | 47 | 6 | 1 | 47 | 6 | 1 | 47 | 6 | 1 | 47 | 6 | 1 | 48 | 5 | 1 |
| RM070 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 |
| RM071 | No | 1 | B | 46 | 53 | 7 | 50 | 3 | 0 | 50 | 3 | 0 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 |
| RM072 | No | 1 | B | 46 | 56 | 10 | 50 | 6 | 1 | 50 | 6 | 1 | 50 | 6 | 1 | 50 | 6 | 1 | 50 | 6 | 1 |
| RM073 | No | 1 | B | 50 | 54 | 4 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 |
| RM074 | No | 1 | B | 46 | 59 | 13 | 51 | 8 | 1 | 51 | 8 | 1 | 52 | 7 | 1 | 52 | 7 | 1 | 52 | 7 | 1 |
| RM075 | No | 1 | B | 46 | 57 | 11 | 50 | 7 | 1 | 50 | 7 | 1 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 |
| RM076 | No | 1 | B | 46 | 63 | 17 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 |
| RM077 | No | 1 | B | 47 | 66 | 19 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 |
| RM078 | No | 1 | B | 51 | 66 | 15 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 |
| RM079 | No | 1 | B | 58 | 67 | 9 | 63 | 4 | 0 | 63 | 4 | 0 | 63 | 4 | 0 | 63 | 4 | 0 | 63 | 4 | 0 |
| RM080 | No | 1 | D | 37 | 40 | 3 | 38 | 2 | 0 | 38 | 2 | 0 | 38 | 2 | 0 | 39 | 1 | 0 | 39 | 1 | 0 |
| RM081 | No | 1 | B | 53 | 56 | 3 | 54 | 2 | 0 | 54 | 2 | 0 | 54 | 2 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RM082 | No | 1 | B | 47 | 52 | 5 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RM083 | No | 1 | B | 52 | 54 | 2 | 53 | 1 | 0 | 53 | 1 | 0 | 53 | 1 | 0 | 53 | 1 | 0 | 53 | 1 | 0 |
| RM084 | No | 1 | B | 54 | 56 | 2 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RM085 | No | 1 | B | 46 | 60 | 14 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 |
| RM086 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 |
| RM087 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 |
| RM088 | No | 1 | B | 57 | 58 | 1 | 58 | 0 | 0 | 58 | 0 | 0 | 58 | 0 | 0 | 58 | 0 | 0 | 58 | 0 | 0 |
| RM089 | No | 1 | B | 58 | 59 | 1 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 |
| RM090 | No | 1 | B | 59 | 59 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 |
| RM091 | No | 1 | B | 50 | 55 | 5 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 |
| RM092 | No | 1 | B | 46 | 55 | 9 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 |
| RM093 | No | 1 | B | 48 | 56 | 8 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RM094 | No | 1 | B | 48 | 55 | 7 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM095 | No | 1 | B | 49 | 55 | 6 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM096 | No | 1 | B | 51 | 57 | 6 | 56 | 1 | 0 | 56 | 1 | 0 | 56 | 1 | 0 | 56 | 1 | 0 | 56 | 1 | 0 |
| RM097 | No | 1 | B | 49 | 56 | 7 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RM098 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 7**

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | | 14-Foot Barrier | | | 13-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM099 | No | 1 | B | 50 | 55 | 5 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM100 | No | 1 | B | 50 | 55 | 5 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM101 | No | 1 | B | 47 | 54 | 7 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 |
| RM102 | No | 1 | B | 48 | 54 | 6 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 |
| RM103 | No | 1 | B | 54 | 56 | 2 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 |
| RM104 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 |
| RM105 | No | 1 | B | 48 | 55 | 7 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM106 | No | 1 | B | 46 | 59 | 13 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 |
| RM107 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM108 | No | 1 | B | 48 | 53 | 5 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 |
| RM109 | No | 1 | B | 60 | 60 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 7**

| | NAC | 17-Foot Barrier | 16-Foot Barrier | 15-Foot Barrier | 14-Foot Barrier | 13-Foot Barrier |
|---|---|---|---|---|---|---|
| | **Inputs – Overall** | | | | | |
| | Barrier Length (ft.) = | 2,032 | 2,032 | 2,057 | 2,257 | 2,257 |
| | *Barrier Height (ft.) = | 17 & 10 | 16 & 10 | 15 & 10 | 14 & 10 | 13 & 10 |
| | Barrier Area (sq. ft.) = | 33,445 | 31,570 | 30,070 | 30,970 | 28,870 |
| | **Inputs – Category A, C, D, or E** | | | | | |
| | Barrier Height (ft.) = | n/a | n/a | n/a | n/a | n/a |
| | Barrier Length (ft.) = | n/a | n/a | n/a | n/a | n/a |
| | Barrier Area (ft.) = | n/a | n/a | n/a | n/a | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a | n/a | n/a | n/a | n/a |
| | Safety Barrier (linear ft.) = | n/a | n/a | n/a | n/a | n/a |
| | **Inputs – Category B** | | | | | |
| | Barrier Height (ft.) = | 17 & 10 | 16 & 10 | 15 & 10 | 14 & 10 | 13 & 10 |
| | Barrier Length (ft.) = | 2,032 | 2,032 | 2,057 | 2,257 | 2,257 |
| | Barrier Area (sq. ft.) = | 33,445 | 31,570 | 30,070 | 30,970 | 28,870 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 | 0 | 0 | 0 | 0 |
| | **Safety Barrier (linear ft.) = | 1,875 | 1,875 | 1,900 | 2,100 | 2,100 |
| **Feasibility** | **Acoustic Feasibility** | | | | | |
| | Front Row Receptors = | 11 | 11 | 11 | 11 | 11 |
| | Front-Row Receptors with a 5 dBA Reduction = | 9 | 9 | 9 | 9 | 9 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 82% | 82% | 82% | 82% | 82% |
| | Acoustically Feasible = | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Reasonableness** | **Noise Reduction Design Goal** | | | | | |
| | Front Row Receptors = | 11 | 11 | 11 | 11 | 11 |
| | Front Row Receptors with 7 dBA Reduction = | 8 | 8 | 8 | 7 | 7 |
| | % of Front Row Reduced At Least 7 dBA = | 73% | 73% | 73% | 64% | 64% |
| | Meets Noise Reduction Design Goal = | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| | **Cost Effectiveness – Category A, C, D, or E** | | | | | |
| | Barrier Cost (Barrier area x 20) = | n/a | n/a | n/a | n/a | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a | n/a | n/a | n/a | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a | n/a | n/a | n/a | n/a |
| | Total Barrier Cost = | n/a | n/a | n/a | n/a | n/a |
| | Allowable Cost (length x 360) = | n/a | n/a | n/a | n/a | n/a |
| | Cost Reasonable = | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** |
| | **Cost Effectiveness – Category B** | | | | | |
| | Barrier Cost (Barrier area x 20) = | $668,900 | $631,400 | $601,400 | $619,400 | $577,400 |
| | Right-of-Way Acquisition (sq. ft. x 20) = | $0 | $0 | $0 | $0 | $0 |
| | Safety Barrier (linear ft. x 125) = | $234,375 | $234,375 | $237,500 | $262,500 | $262,500 |
| | Total Barrier Cost = | $903,275 | $865,775 | $838,900 | $881,900 | $839,900 |
| | Allowable Cost (benefited x 30k) = | $1,200,000 | $1,200,000 | $1,200,000 | $1,170,000 | $1,080,000 |
| | Benefited (Category B w/ 5 dBA Reduction) = | 40 | 40 | 40 | 39 | 36 |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | $22,582 | $21,644 | $20,973 | $22,613 | $23,331 |
| | Cost Reasonable = | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| | **Is Noise Barrier 7 Feasible and Reasonable?** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |

*Overall barrier heights include a uniform barrier at the height indicated and a 10-foot-tall and 157-foot-long segment on the bridge over 300 North.

**Safety barrier length excludes the proposed 157-foot-long barrier length on the bridge over 300 North.

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 7**

| NAC | | | | | | | 12-Foot Barrier | | | 11-Foot Barrier | | | 10-Foot Barrier | | | 9-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM001 | Yes | 1 | B | 46 | 60 | 14 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 |
| RM002 | Yes | 1 | B | 46 | 66 | 20 | 58 | 8 | 1 | 59 | 7 | 1 | 60 | 6 | 1 | 60 | 6 | 1 |
| RM003 | Yes | 1 | B | 46 | 68 | 22 | 60 | 8 | 1 | 61 | 7 | 1 | 61 | 7 | 1 | 61 | 7 | 1 |
| RM004 | Yes | 1 | B | 46 | 67 | 21 | 60 | 7 | 1 | 60 | 7 | 1 | 60 | 7 | 1 | 61 | 6 | 1 |
| RM005 | Yes | 1 | B | 46 | 68 | 22 | 60 | 8 | 1 | 60 | 8 | 1 | 61 | 7 | 1 | 61 | 7 | 1 |
| RM006 | Yes | 1 | B | 46 | 68 | 22 | 60 | 8 | 1 | 60 | 8 | 1 | 61 | 7 | 1 | 62 | 6 | 1 |
| RM007 | Yes | 1 | B | 46 | 68 | 22 | 60 | 8 | 1 | 61 | 7 | 1 | 61 | 7 | 1 | 62 | 6 | 1 |
| RM008 | Yes | 1 | B | 46 | 65 | 19 | 57 | 8 | 1 | 57 | 8 | 1 | 58 | 7 | 1 | 59 | 6 | 1 |
| RM009 | Yes | 1 | B | 47 | 67 | 20 | 61 | 6 | 1 | 61 | 6 | 1 | 62 | 5 | 1 | 62 | 5 | 1 |
| RM010 | Yes | 1 | B | 50 | 67 | 17 | 62 | 5 | 1 | 62 | 5 | 1 | 62 | 5 | 1 | 62 | 5 | 1 |
| RM011 | Yes | 1 | B | 46 | 61 | 15 | 59 | 2 | 0 | 58 | 3 | 0 | 58 | 3 | 0 | 59 | 2 | 0 |
| RM012 | No | 1 | B | 46 | 65 | 19 | 64 | 1 | 0 | 64 | 1 | 0 | 64 | 1 | 0 | 64 | 1 | 0 |
| RM013 | No | 1 | B | 46 | 57 | 11 | 54 | 3 | 0 | 54 | 3 | 0 | 54 | 3 | 0 | 54 | 3 | 0 |
| RM014 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 | 53 | 3 | 0 | 54 | 2 | 0 | 54 | 2 | 0 |
| RM015 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 |
| RM016 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 52 | 2 | 0 | 52 | 2 | 0 |
| RM017 | No | 1 | B | 46 | 53 | 7 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 |
| RM018 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RM019 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RM020 | No | 1 | B | 46 | 51 | 5 | 49 | 2 | 0 | 49 | 2 | 0 | 49 | 2 | 0 | 49 | 2 | 0 |
| RM021 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RM022 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 49 | 1 | 0 |
| RM023 | No | 1 | B | 46 | 64 | 18 | 56 | 8 | 1 | 56 | 8 | 1 | 57 | 7 | 1 | 57 | 7 | 1 |
| RM024 | No | 1 | B | 46 | 61 | 15 | 55 | 6 | 1 | 55 | 6 | 1 | 56 | 5 | 1 | 56 | 5 | 1 |
| RM025 | No | 1 | B | 46 | 59 | 13 | 53 | 6 | 1 | 54 | 5 | 1 | 54 | 5 | 1 | 55 | 4 | 0 |
| RM026 | No | 1 | B | 46 | 57 | 11 | 52 | 5 | 1 | 52 | 5 | 1 | 53 | 4 | 0 | 53 | 4 | 0 |
| RM027 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 52 | 4 | 0 | 52 | 4 | 0 | 53 | 3 | 0 |
| RM028 | No | 1 | B | 46 | 54 | 8 | 50 | 4 | 0 | 51 | 3 | 0 | 51 | 3 | 0 | 52 | 2 | 0 |
| RM029 | No | 1 | B | 46 | 53 | 7 | 49 | 4 | 0 | 50 | 3 | 0 | 50 | 3 | 0 | 51 | 2 | 0 |
| RM030 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 50 | 2 | 0 |
| RM031 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 49 | 2 | 0 | 49 | 2 | 0 |
| RM032 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RM033 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RM034 | No | 1 | B | 46 | 66 | 20 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 59 | 7 | 1 |
| RM035 | No | 1 | B | 46 | 57 | 11 | 53 | 4 | 0 | 53 | 4 | 0 | 53 | 4 | 0 | 54 | 3 | 0 |
| RM036 | No | 1 | B | 46 | 54 | 8 | 50 | 4 | 0 | 50 | 4 | 0 | 51 | 3 | 0 | 51 | 3 | 0 |
| RM037 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 50 | 2 | 0 | 50 | 2 | 0 | 50 | 2 | 0 |
| RM038 | No | 1 | B | 46 | 51 | 5 | 49 | 2 | 0 | 49 | 2 | 0 | 50 | 1 | 0 | 50 | 1 | 0 |
| RM039 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RM040 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RM041 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 |
| RM042 | No | 1 | B | 47 | 50 | 3 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 50 | 0 | 0 |
| RM043 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 |
| RM044 | No | 1 | B | 46 | 61 | 15 | 53 | 8 | 1 | 54 | 7 | 1 | 54 | 7 | 1 | 55 | 6 | 1 |
| RM045 | No | 1 | B | 46 | 59 | 13 | 52 | 7 | 1 | 53 | 6 | 1 | 53 | 6 | 1 | 54 | 5 | 1 |
| RM046 | No | 1 | B | 46 | 54 | 8 | 49 | 5 | 1 | 50 | 4 | 0 | 50 | 4 | 0 | 51 | 3 | 0 |
| RM047 | No | 1 | B | 46 | 53 | 7 | 49 | 4 | 0 | 49 | 4 | 0 | 50 | 3 | 0 | 50 | 3 | 0 |
| RM048 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 | 49 | 2 | 0 |
| RM049 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 | 49 | 2 | 0 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 7**

| NAC | | | | | | | 12-Foot Barrier | | | 11-Foot Barrier | | | 10-Foot Barrier | | | 9-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM050 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 49 | 1 | 0 |
| RM051 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RM052 | No | 1 | B | 46 | 58 | 12 | 51 | 7 | 1 | 52 | 6 | 1 | 52 | 6 | 1 | 53 | 5 | 1 |
| RM053 | No | 1 | B | 46 | 53 | 7 | 48 | 5 | 1 | 49 | 4 | 0 | 49 | 4 | 0 | 50 | 3 | 0 |
| RM054 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 | 48 | 4 | 0 | 48 | 4 | 0 | 49 | 3 | 0 |
| RM055 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RM056 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 48 | 1 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RM057 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 |
| RM058 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 49 | 1 | 0 |
| RM059 | No | 1 | B | 50 | 53 | 3 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 |
| RM060 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 50 | 2 | 0 |
| RM061 | No | 1 | B | 49 | 53 | 4 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 |
| RM062 | No | 1 | B | 46 | 62 | 16 | 54 | 8 | 1 | 55 | 7 | 1 | 55 | 7 | 1 | 56 | 6 | 1 |
| RM063 | No | 1 | B | 46 | 58 | 12 | 52 | 6 | 1 | 52 | 6 | 1 | 53 | 5 | 1 | 53 | 5 | 1 |
| RM064 | No | 1 | B | 46 | 56 | 10 | 50 | 6 | 1 | 50 | 6 | 1 | 51 | 5 | 1 | 51 | 5 | 1 |
| RM065 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 |
| RM066 | No | 1 | B | 49 | 53 | 4 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 | 52 | 1 | 0 |
| RM067 | No | 1 | B | 46 | 61 | 15 | 53 | 8 | 1 | 53 | 8 | 1 | 54 | 7 | 1 | 54 | 7 | 1 |
| RM068 | No | 1 | B | 46 | 57 | 11 | 51 | 6 | 1 | 51 | 6 | 1 | 52 | 5 | 1 | 52 | 5 | 1 |
| RM069 | No | 1 | B | 46 | 53 | 7 | 48 | 5 | 1 | 49 | 4 | 0 | 49 | 4 | 0 | 50 | 3 | 0 |
| RM070 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 52 | 4 | 0 | 52 | 4 | 0 |
| RM071 | No | 1 | B | 46 | 53 | 7 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 | 51 | 2 | 0 |
| RM072 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 52 | 4 | 0 |
| RM073 | No | 1 | B | 50 | 54 | 4 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 |
| RM074 | No | 1 | B | 46 | 59 | 13 | 52 | 7 | 1 | 53 | 6 | 1 | 53 | 6 | 1 | 54 | 5 | 1 |
| RM075 | No | 1 | B | 46 | 57 | 11 | 52 | 5 | 1 | 52 | 5 | 1 | 52 | 5 | 1 | 53 | 4 | 0 |
| RM076 | No | 1 | B | 46 | 63 | 17 | 58 | 5 | 1 | 58 | 5 | 1 | 59 | 4 | 0 | 59 | 4 | 0 |
| RM077 | No | 1 | B | 47 | 66 | 19 | 61 | 5 | 1 | 60 | 6 | 1 | 61 | 5 | 1 | 61 | 5 | 1 |
| RM078 | No | 1 | B | 51 | 66 | 15 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 | 61 | 5 | 1 |
| RM079 | No | 1 | B | 58 | 67 | 9 | 63 | 4 | 0 | 63 | 4 | 0 | 63 | 4 | 0 | 63 | 4 | 0 |
| RM080 | No | 1 | D | 37 | 40 | 3 | 39 | 1 | 0 | 39 | 1 | 0 | 39 | 1 | 0 | 39 | 1 | 0 |
| RM081 | No | 1 | B | 53 | 56 | 3 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RM082 | No | 1 | B | 47 | 52 | 5 | 50 | 2 | 0 | 50 | 2 | 0 | 51 | 1 | 0 | 51 | 1 | 0 |
| RM083 | No | 1 | B | 52 | 54 | 2 | 53 | 1 | 0 | 53 | 1 | 0 | 53 | 1 | 0 | 54 | 0 | 0 |
| RM084 | No | 1 | B | 54 | 56 | 2 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RM085 | No | 1 | B | 46 | 60 | 14 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 |
| RM086 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 |
| RM087 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 | 55 | 2 | 0 |
| RM088 | No | 1 | B | 57 | 58 | 1 | 58 | 0 | 0 | 58 | 0 | 0 | 58 | 0 | 0 | 58 | 0 | 0 |
| RM089 | No | 1 | B | 58 | 59 | 1 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 |
| RM090 | No | 1 | B | 59 | 59 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 |
| RM091 | No | 1 | B | 50 | 55 | 5 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 |
| RM092 | No | 1 | B | 46 | 55 | 9 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 |
| RM093 | No | 1 | B | 48 | 56 | 8 | 55 | 1 | 0 | 54 | 2 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RM094 | No | 1 | B | 48 | 55 | 7 | 55 | 0 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 |
| RM095 | No | 1 | B | 49 | 55 | 6 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM096 | No | 1 | B | 51 | 57 | 6 | 56 | 1 | 0 | 56 | 1 | 0 | 56 | 1 | 0 | 56 | 1 | 0 |
| RM097 | No | 1 | B | 49 | 56 | 7 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RM098 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 7**

| NAC | | | | | | | 12-Foot Barrier | | | 11-Foot Barrier | | | 10-Foot Barrier | | | 9-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM099 | No | 1 | B | 50 | 55 | 5 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM100 | No | 1 | B | 50 | 55 | 5 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM101 | No | 1 | B | 47 | 54 | 7 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 |
| RM102 | No | 1 | B | 48 | 54 | 6 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 |
| RM103 | No | 1 | B | 54 | 56 | 2 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 |
| RM104 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 |
| RM105 | No | 1 | B | 48 | 55 | 7 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM106 | No | 1 | B | 46 | 59 | 13 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 |
| RM107 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RM108 | No | 1 | B | 48 | 53 | 5 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 |
| RM109 | No | 1 | B | 60 | 60 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 |

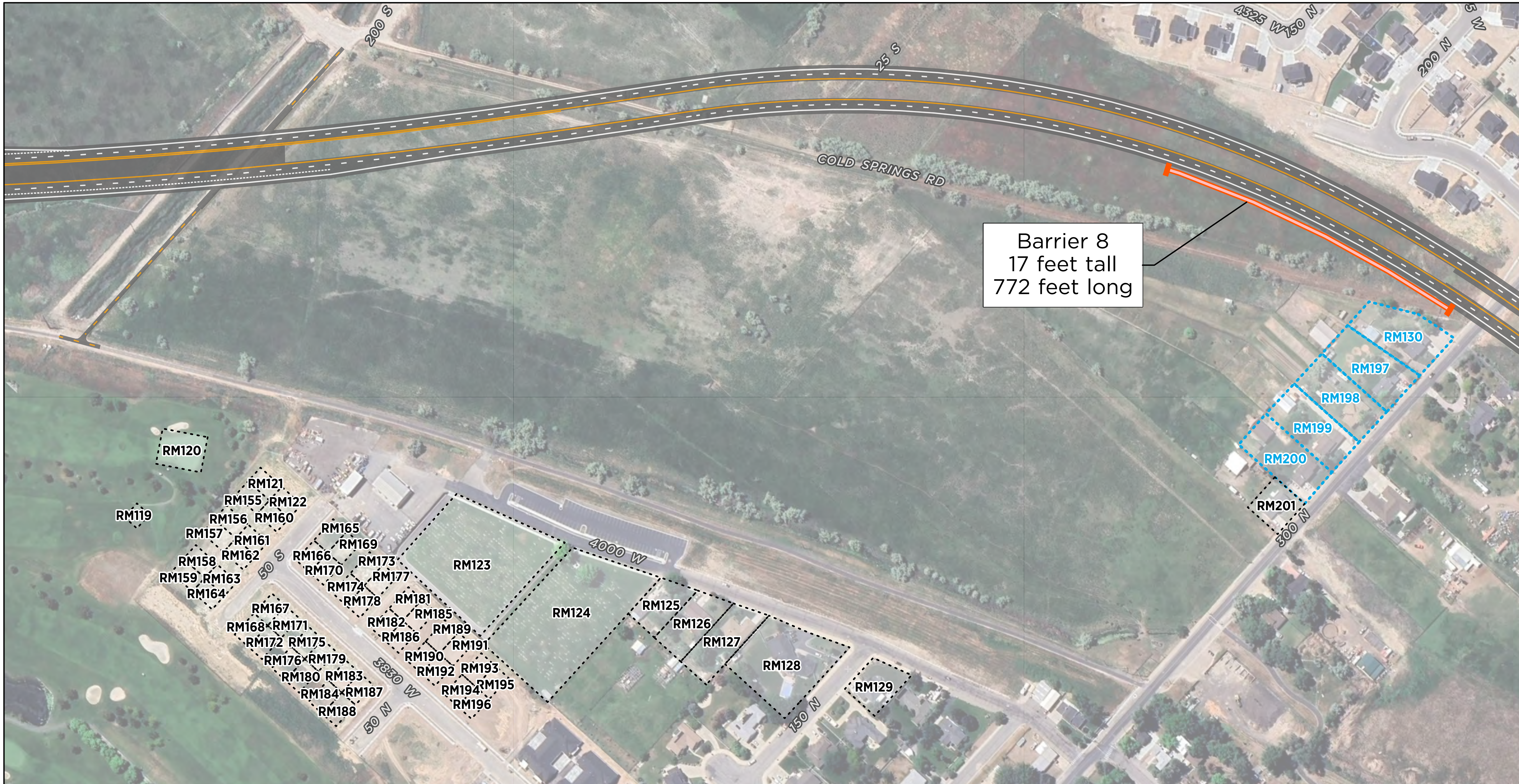
= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 7**

| | NAC | 12-Foot Barrier | 11-Foot Barrier | 10-Foot Barrier | 9-Foot Barrier |
|---|---|---|---|---|---|
| | **Inputs – Overall** | | | | |
| | Barrier Length (ft.) = | 2,282 | 2,557 | 2,557 | 2,557 |
| | *Barrier Height (ft.) = | 12 & 10 | 11 & 10 | 10 & 10 | 9 & 10 |
| | Barrier Area (sq. ft.) = | 27,070 | 27,970 | 25,570 | 23,170 |
| | **Inputs – Category A, C, D, or E** | | | | |
| | Barrier Height (ft.) = | n/a | n/a | n/a | n/a |
| | Barrier Length (ft.) = | n/a | n/a | n/a | n/a |
| | Barrier Area (ft.) = | n/a | n/a | n/a | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a | n/a | n/a | n/a |
| | Safety Barrier (linear ft.) = | n/a | n/a | n/a | n/a |
| | **Inputs – Category B** | | | | |
| | Barrier Height (ft.) = | 12 & 10 | 11 & 10 | 10 & 10 | 9 & 10 |
| | Barrier Length (ft.) = | 2,282 | 2,557 | 2,557 | 2,557 |
| | Barrier Area (sq. ft.) = | 27,070 | 27,970 | 25,570 | 23,170 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 | 0 | 0 | 0 |
| | **Safety Barrier (linear ft.) = | 2,125 | 2,400 | 2,400 | 2,400 |
| **Feasibility** | **Acoustic Feasibility** | | | | |
| | Front Row Receptors = | 11 | 11 | 11 | 11 |
| | Front-Row Receptors with a 5 dBA Reduction = | 9 | 9 | 9 | 9 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 82% | 82% | 82% | 82% |
| | Acoustically Feasible = | **Yes** | **Yes** | **Yes** | **Yes** |
| **Reasonableness** | **Noise Reduction Design Goal** | | | | |
| | Front Row Receptors = | 11 | 11 | 11 | 11 |
| | Front Row Receptors with 7 dBA Reduction = | 7 | 7 | 6 | 2 |
| | % of Front Row Reduced At Least 7 dBA = | 64% | 64% | 55% | 18% |
| | Meets Noise Reduction Design Goal = | **Yes** | **Yes** | **Yes** | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | | | | |
| | Barrier Cost (Barrier area x 20) = | n/a | n/a | n/a | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a | n/a | n/a | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a | n/a | n/a | n/a |
| | Total Barrier Cost = | n/a | n/a | n/a | n/a |
| | Allowable Cost (length x 360) = | n/a | n/a | n/a | n/a |
| | Cost Reasonable = | **n/a** | **n/a** | **n/a** | **n/a** |
| | **Cost Effectiveness – Category B** | | | | |
| | Barrier Cost (Barrier area x 20) = | $541,400 | $559,400 | $511,400 | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | $0 | $0 | $0 | n/a |
| | Safety Barrier (linear ft. x 125) = | $265,625 | $300,000 | $300,000 | n/a |
| | Total Barrier Cost = | $807,025 | $859,400 | $811,400 | n/a |
| | Allowable Cost (benefited x 30k) = | $1,020,000 | $870,000 | $780,000 | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | 34 | 29 | 26 | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | $23,736 | $29,634 | $31,208 | n/a |
| | Cost Reasonable = | **Yes** | **Yes** | **No** | **n/a** |
| | **Is Noise Barrier 7 Feasible and Reasonable?** | **Yes** | **Yes** | **No** | **No** |

*Overall barrier heights include a uniform barrier at the height indicated and a 10-foot-tall and 157-foot-long segment on the bridge over 300 North.

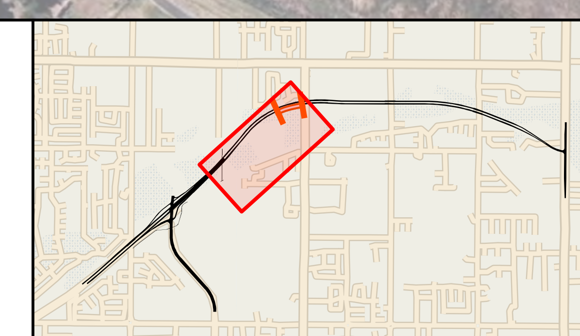
**Safety barrier length excludes the proposed 157-foot-long barrier length on the bridge over 300 North.




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Not Recommended for Balloting
Benefited Receptor
Receptor Area

0 125 250 500 Feet



SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 8

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM119 | No | 1 | C | 46 | 61 | 15 | 61 | 0 | 0 |
| RM120 | No | 1 | C | 46 | 63 | 17 | 63 | 0 | 0 |
| RM121 | No | 1 | B | 46 | 62 | 16 | 62 | 0 | 0 |
| RM122 | No | 1 | B | 46 | 60 | 14 | 60 | 0 | 0 |
| RM123 | No | 1 | C | 46 | 57 | 11 | 57 | 0 | 0 |
| RM124 | No | 1 | C | 46 | 56 | 10 | 56 | 0 | 0 |
| RM125 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RM126 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RM127 | No | 1 | B | 46 | 55 | 9 | 54 | 1 | 0 |
| RM128 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RM129 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RM130 | Yes | 1 | B | 51 | 66 | 15 | 60 | 6 | 1 |
| RM155 | No | 1 | B | 46 | 62 | 16 | 61 | 1 | 0 |
| RM156 | No | 1 | B | 46 | 61 | 15 | 61 | 0 | 0 |
| RM157 | No | 1 | B | 46 | 60 | 14 | 60 | 0 | 0 |
| RM158 | No | 1 | B | 46 | 59 | 13 | 59 | 0 | 0 |
| RM159 | No | 1 | B | 46 | 59 | 13 | 59 | 0 | 0 |
| RM160 | No | 1 | B | 46 | 57 | 11 | 56 | 1 | 0 |
| RM161 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RM162 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RM163 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RM164 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |
| RM165 | No | 1 | B | 46 | 59 | 13 | 59 | 0 | 0 |
| RM166 | No | 1 | B | 46 | 56 | 10 | 56 | 0 | 0 |
| RM167 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RM168 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |
| RM169 | No | 1 | B | 46 | 57 | 11 | 56 | 1 | 0 |
| RM170 | No | 1 | B | 46 | 54 | 8 | 53 | 1 | 0 |
| RM171 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RM172 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RM173 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RM174 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |
| RM175 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RM176 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RM177 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RM178 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RM179 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |
| RM180 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RM181 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RM182 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RM183 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RM184 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RM185 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RM186 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RM187 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RM188 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RM189 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RM190 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RM191 | No | 1 | B | 46 | 54 | 8 | 53 | 1 | 0 |

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 8

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM192 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RM193 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |
| RM194 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RM195 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |
| RM196 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RM197 | No | 1 | B | 47 | 64 | 17 | 58 | 6 | 1 |
| RM198 | No | 1 | B | 46 | 62 | 16 | 56 | 6 | 1 |
| RM199 | No | 1 | B | 46 | 60 | 14 | 55 | 5 | 1 |
| RM200 | No | 1 | B | 46 | 59 | 13 | 54 | 5 | 1 |
| RM201 | No | 1 | B | 50 | 58 | 8 | 54 | 4 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 8

| | | NAC | 17-Foot Barrier |
|---|---|---|---|
| | | **Inputs – Overall** | |
| | | Barrier Length (ft.) = | 772 |
| | | Barrier Height (ft.) = | 17 |
| | | Barrier Area (sq. ft.) = | 13,124 |
| | | **Inputs – Category A, C, D, or E** | |
| | | Barrier Height (ft.) = | n/a |
| | | Barrier Length (ft.) = | n/a |
| | | Barrier Area (ft.) = | n/a |
| | | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | | Safety Barrier (linear ft.) = | n/a |
| | | **Inputs – Category B** | |
| | | Barrier Height (ft.) = | 17 |
| | | Barrier Length (ft.) = | 772 |
| | | Barrier Area (sq. ft.) = | 13,124 |
| | | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | | Safety Barrier (linear ft.) = | 772 |
| Feasibility | | **Acoustic Feasibility** | |
| | | Front Row Receptors = | 1 |
| | | Front-Row Receptors with a 5 dBA Reduction = | 1 |
| | | % of Front-Row Receptors Reduced At Least 5 dBA = | 100% |
| | | Acoustically Feasible = | **Yes** |
| Reasonableness | | **Noise Reduction Design Goal** | |
| | | Front Row Receptors = | 1 |
| | | Front Row Receptors with 7 dBA Reduction = | 0 |
| | | % of Front Row Reduced At Least 7 dBA = | 0% |
| | | Meets Noise Reduction Design Goal = | **No** |
| | | **Cost Effectiveness – Category A, C, D, or E** | |
| | | Barrier Cost (Barrier area x 20) = | n/a |
| | | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | | Safety Barrier (linear ft. x 125) = | n/a |
| | | Total Barrier Cost = | n/a |
| | | Allowable Cost (length x 360) = | n/a |
| | | Cost Reasonable = | **n/a** |
| | | **Cost Effectiveness – Category B** | |
| | | Barrier Cost (Barrier area x 20) = | n/a |
| | | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | | Safety Barrier (linear ft. x 125) = | n/a |
| | | Total Barrier Cost = | n/a |
| | | Allowable Cost (benefited x 30k) = | n/a |
| | | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | | Cost Reasonable = | **n/a** |

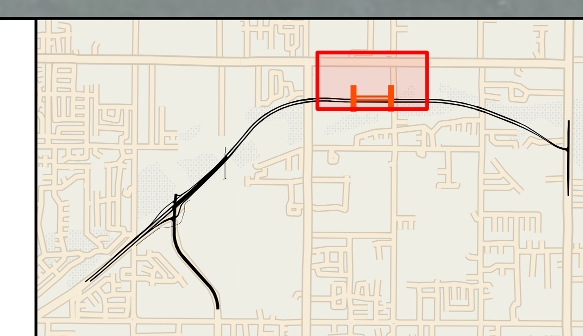
| | |
|---|---|
| Is Noise Barrier 8 Feasible and Reasonable? | No |


**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Not Recommended for Balloting
Benefited Receptor
Receptor Area

N

0 125 250 500
Feet



SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier **9**

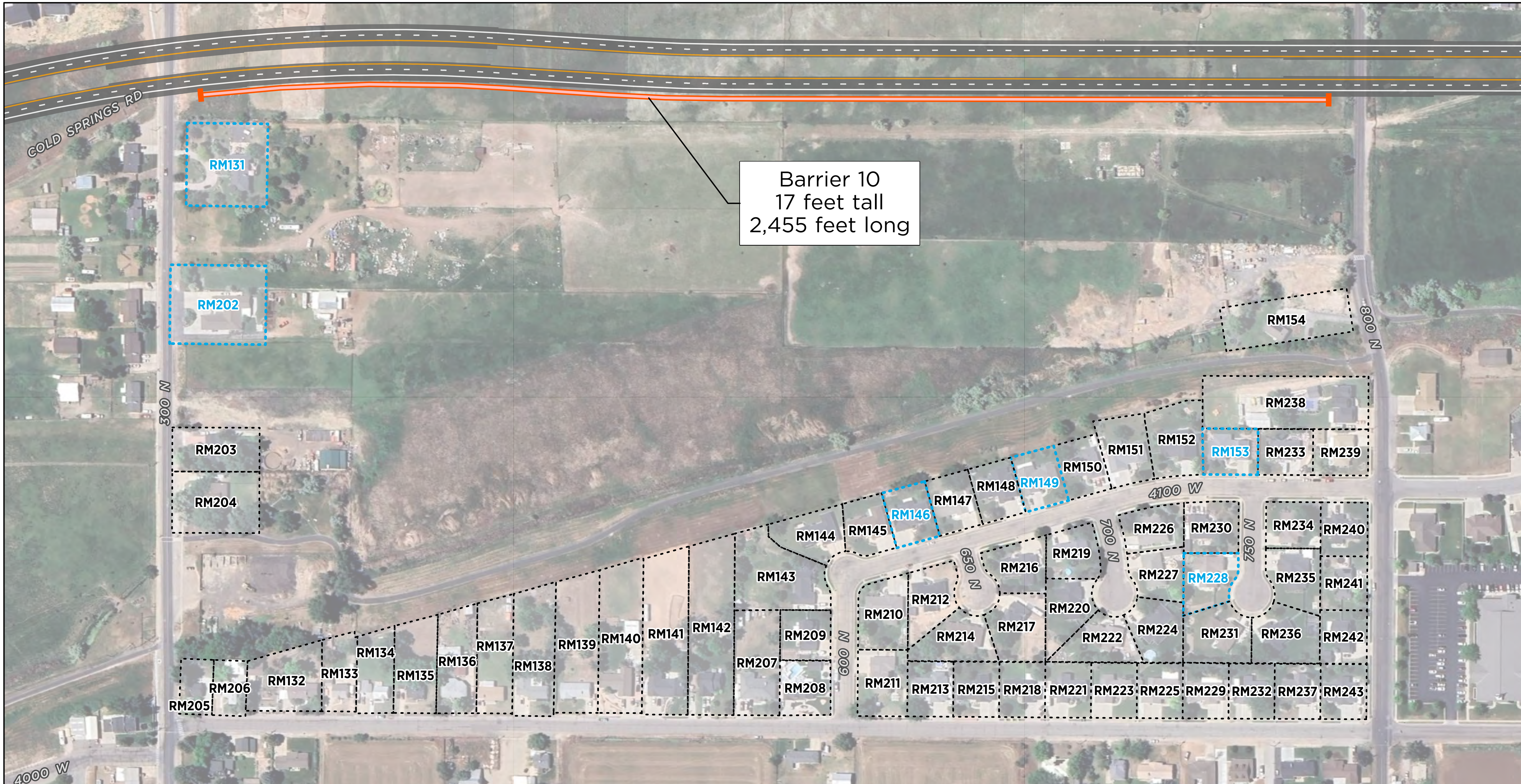
| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM012 | Yes | 1 | B | 46 | 65 | 19 | 60 | 5 | 1 |
| RM097 | No | 1 | B | 49 | 56 | 7 | 55 | 1 | 0 |
| RM098 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 |
| RM099 | No | 1 | B | 50 | 55 | 5 | 54 | 1 | 0 |
| RM100 | No | 1 | B | 50 | 55 | 5 | 54 | 1 | 0 |
| RM101 | No | 1 | B | 47 | 54 | 7 | 53 | 1 | 0 |
| RM102 | No | 1 | B | 48 | 54 | 6 | 53 | 1 | 0 |
| RM103 | No | 1 | B | 54 | 56 | 2 | 55 | 1 | 0 |
| RM104 | No | 1 | B | 46 | 53 | 7 | 51 | 2 | 0 |
| RM105 | No | 1 | B | 48 | 55 | 7 | 54 | 1 | 0 |
| RM106 | No | 1 | B | 46 | 59 | 13 | 54 | 5 | 1 |
| RM107 | No | 1 | B | 46 | 55 | 9 | 52 | 3 | 0 |
| RM108 | No | 1 | B | 48 | 53 | 5 | 52 | 1 | 0 |
| RM109 | No | 1 | B | 60 | 60 | 0 | 60 | 0 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier **9**

| | | NAC | 17-Foot Barrier |
|---|---|---|---|
| | | **Inputs – Overall** | |
| | | Barrier Length (ft.) = | 1,136 |
| | | Barrier Height (ft.) = | 17 |
| | | Barrier Area (sq. ft.) = | 19,312 |
| | | **Inputs – Category A, C, D, or E** | |
| | | Barrier Height (ft.) = | n/a |
| | | Barrier Length (ft.) = | n/a |
| | | Barrier Area (ft.) = | n/a |
| | | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | | Safety Barrier (linear ft.) = | n/a |
| | | **Inputs – Category B** | |
| | | Barrier Height (ft.) = | 17 |
| | | Barrier Length (ft.) = | 1,136 |
| | | Barrier Area (sq. ft.) = | 19,312 |
| | | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | | Safety Barrier (linear ft.) = | 1,136 |
| Feasibility | | **Acoustic Feasibility** | |
| | | Front Row Receptors = | 1 |
| | | Front-Row Receptors with a 5 dBA Reduction = | 1 |
| | | % of Front-Row Receptors Reduced At Least 5 dBA = | 100% |
| | | Acoustically Feasible = | **Yes** |
| Reasonableness | | **Noise Reduction Design Goal** | |
| | | Front Row Receptors = | 1 |
| | | Front Row Receptors with 7 dBA Reduction = | 0 |
| | | % of Front Row Reduced At Least 7 dBA = | 0% |
| | | Meets Noise Reduction Design Goal = | **No** |
| | | **Cost Effectiveness – Category A, C, D, or E** | |
| | | Barrier Cost (Barrier area x 20) = | n/a |
| | | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | | Safety Barrier (linear ft. x 125) = | n/a |
| | | Total Barrier Cost = | n/a |
| | | Allowable Cost (length x 360) = | n/a |
| | | Cost Reasonable = | **n/a** |
| | | **Cost Effectiveness – Category B** | |
| | | Barrier Cost (Barrier area x 20) = | n/a |
| | | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | | Safety Barrier (linear ft. x 125) = | n/a |
| | | Total Barrier Cost = | n/a |
| | | Allowable Cost (benefited x 30k) = | n/a |
| | | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | | Cost Reasonable = | **n/a** |

Is Noise Barrier 9 Feasible and Reasonable? No




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Not Recommended for Balloting
Benefited Receptor
Receptor Area

0 125 250 500 Feet

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 10

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM131 | Yes | 1 | B | 46 | 67 | 21 | 57 | 10 | 1 |
| RM132 | No | 1 | B | 48 | 59 | 11 | 58 | 1 | 0 |
| RM133 | Yes | 1 | B | 48 | 59 | 11 | 58 | 1 | 0 |
| RM134 | Yes | 1 | B | 48 | 59 | 11 | 58 | 1 | 0 |
| RM135 | Yes | 1 | B | 46 | 58 | 12 | 57 | 1 | 0 |
| RM136 | Yes | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 |
| RM137 | Yes | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 |
| RM138 | Yes | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 |
| RM139 | Yes | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 |
| RM140 | Yes | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RM141 | Yes | 1 | B | 46 | 56 | 10 | 52 | 4 | 0 |
| RM142 | Yes | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 |
| RM143 | Yes | 1 | B | 46 | 57 | 11 | 54 | 3 | 0 |
| RM144 | Yes | 1 | B | 46 | 61 | 15 | 57 | 4 | 0 |
| RM145 | Yes | 1 | B | 46 | 61 | 15 | 57 | 4 | 0 |
| RM146 | Yes | 1 | B | 46 | 62 | 16 | 57 | 5 | 1 |
| RM147 | Yes | 1 | B | 46 | 62 | 16 | 58 | 4 | 0 |
| RM148 | Yes | 1 | B | 46 | 62 | 16 | 58 | 4 | 0 |
| RM149 | Yes | 1 | B | 46 | 63 | 17 | 58 | 5 | 1 |
| RM150 | Yes | 1 | B | 46 | 63 | 17 | 59 | 4 | 0 |
| RM151 | Yes | 1 | B | 46 | 63 | 17 | 59 | 4 | 0 |
| RM152 | Yes | 1 | B | 46 | 63 | 17 | 60 | 3 | 0 |
| RM153 | Yes | 1 | B | 46 | 60 | 14 | 54 | 6 | 1 |
| RM154 | Yes | 1 | B | 47 | 64 | 17 | 61 | 3 | 0 |
| RM202 | No | 1 | B | 46 | 60 | 14 | 53 | 7 | 1 |
| RM203 | No | 1 | B | 47 | 58 | 11 | 54 | 4 | 0 |
| RM204 | No | 1 | B | 47 | 56 | 9 | 52 | 4 | 0 |
| RM205 | No | 1 | B | 64 | 65 | 1 | 64 | 1 | 0 |
| RM206 | No | 1 | B | 57 | 61 | 4 | 60 | 1 | 0 |
| RM207 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 |
| RM208 | No | 1 | B | 46 | 55 | 9 | 52 | 3 | 0 |
| RM209 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 |
| RM210 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RM211 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RM212 | No | 1 | B | 46 | 50 | 4 | 46 | 4 | 0 |
| RM213 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 |
| RM214 | No | 1 | B | 46 | 48 | 2 | 44 | 4 | 0 |
| RM215 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RM216 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 |
| RM217 | No | 1 | B | 46 | 48 | 2 | 44 | 4 | 0 |
| RM218 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RM219 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 |
| RM220 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 |
| RM221 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RM222 | No | 1 | B | 46 | 46 | 0 | 42 | 4 | 0 |
| RM223 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 |
| RM224 | No | 1 | B | 46 | 48 | 2 | 44 | 4 | 0 |
| RM225 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 |
| RM226 | No | 1 | B | 46 | 53 | 7 | 49 | 4 | 0 |

SR-177; SR-193 to 1800 N Noise Abatement Analysis
**Noise Barrier 10**

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RM227 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 |
| RM228 | No | 1 | B | 46 | 48 | 2 | 43 | 5 | 1 |
| RM229 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 |
| RM230 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 |
| RM231 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RM232 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RM233 | No | 1 | B | 46 | 60 | 14 | 57 | 3 | 0 |
| RM234 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 |
| RM235 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 |
| RM236 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RM237 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |
| RM238 | No | 1 | B | 46 | 60 | 14 | 58 | 2 | 0 |
| RM239 | No | 1 | B | 46 | 54 | 8 | 53 | 1 | 0 |
| RM240 | No | 1 | B | 52 | 56 | 4 | 55 | 1 | 0 |
| RM241 | No | 1 | B | 46 | 47 | 1 | 44 | 3 | 0 |
| RM242 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RM243 | No | 1 | B | 52 | 52 | 0 | 52 | 0 | 0 |

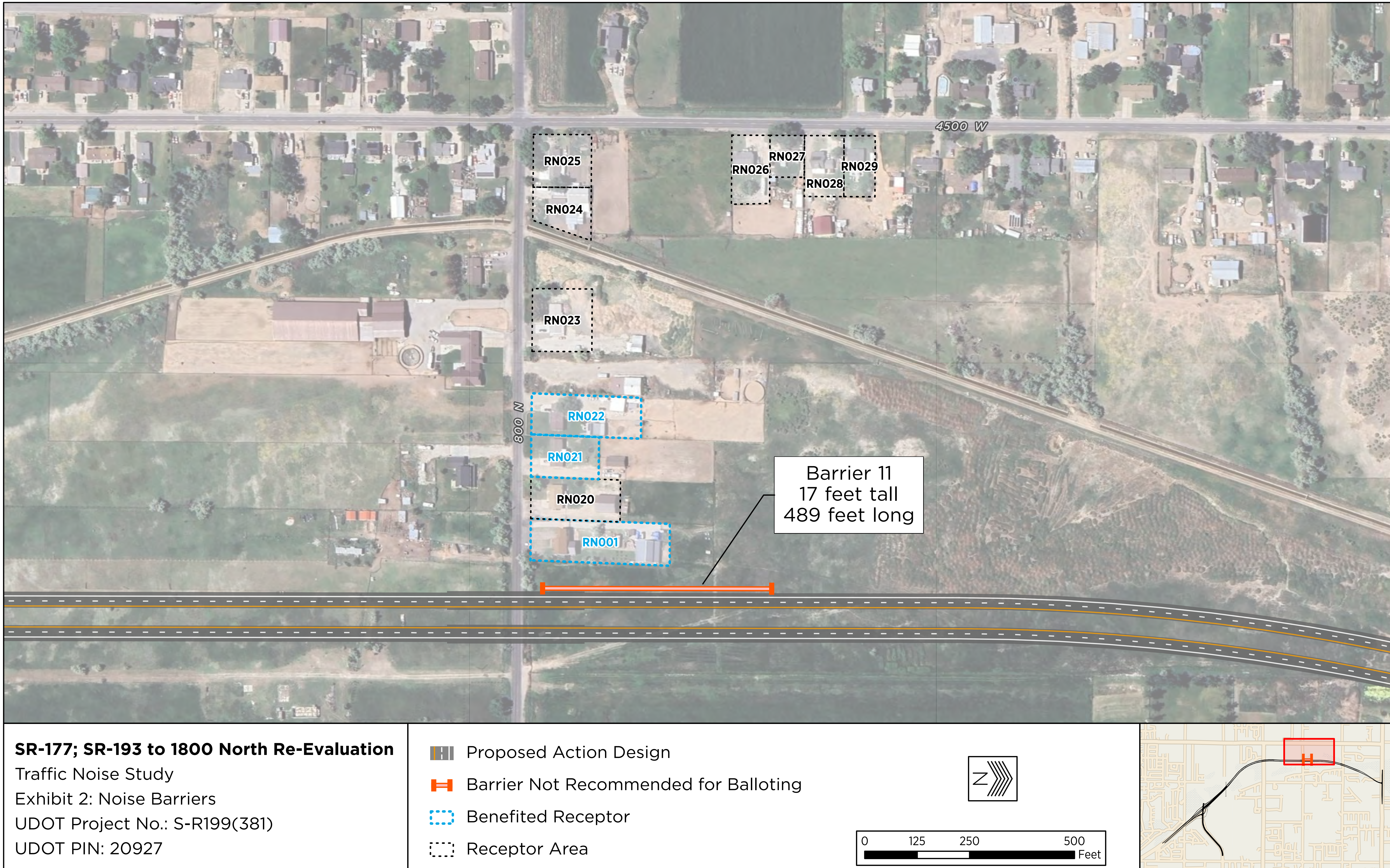
= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 10

| NAC | 17-Foot Barrier |
|---|---|

| | | |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 2,455 |
| | Barrier Height (ft.) = | 17 |
| | Barrier Area (sq. ft.) = | 41,735 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | n/a |
| | Barrier Length (ft.) = | n/a |
| | Barrier Area (ft.) = | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | Safety Barrier (linear ft.) = | n/a |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 17 |
| | Barrier Length (ft.) = | 2,455 |
| | Barrier Area (sq. ft.) = | 41,735 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 2,455 |
| Feasibility | **Acoustic Feasibility** | |
| | Front Row Receptors = | 23 |
| | Front-Row Receptors with a 5 dBA Reduction = | 4 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 17% |
| | Acoustically Feasible = | **No** |
| Reasonableness | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 23 |
| | Front Row Receptors with 7 dBA Reduction = | 1 |
| | % of Front Row Reduced At Least 7 dBA = | 4% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |

| | | |
|---|---|---|
| | Is Noise Barrier 10 Feasible and Reasonable? | No |




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 11

| NAC | | | | | | | 17-Foot Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | | 14-Foot Barrier | | | 13-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN001 | Yes | 1 | B | 46 | 67 | 21 | 58 | 9 | 1 | 58 | 9 | 1 | 58 | 9 | 1 | 58 | 9 | 1 | 59 | 8 | 1 |
| RN020 | No | 1 | B | 46 | 63 | 17 | 59 | 4 | 0 | 59 | 4 | 0 | 59 | 4 | 0 | 59 | 4 | 0 | 62 | 1 | 0 |
| RN021 | No | 1 | B | 46 | 62 | 16 | 57 | 5 | 1 | 57 | 5 | 1 | 57 | 5 | 1 | 57 | 5 | 1 | 61 | 1 | 0 |
| RN022 | No | 1 | B | 46 | 59 | 13 | 54 | 5 | 1 | 54 | 5 | 1 | 54 | 5 | 1 | 54 | 5 | 1 | 58 | 1 | 0 |
| RN023 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 58 | 0 | 0 |
| RN024 | No | 1 | B | 47 | 56 | 9 | 54 | 2 | 0 | 54 | 2 | 0 | 54 | 2 | 0 | 54 | 2 | 0 | 55 | 1 | 0 |
| RN025 | No | 1 | B | 60 | 60 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 |
| RN026 | No | 1 | B | 51 | 56 | 5 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 |
| RN027 | No | 1 | B | 51 | 56 | 5 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 56 | 0 | 0 |
| RN028 | No | 1 | B | 46 | 55 | 9 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 55 | 0 | 0 |
| RN029 | No | 1 | B | 49 | 56 | 7 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 11

| | NAC | 17-Foot Barrier | 16-Foot Barrier | 15-Foot Barrier | 14-Foot Barrier | 13-Foot Barrier |
|---|---|---|---|---|---|---|
| | **Inputs – Overall** | | | | | |
| | Barrier Length (ft.) = | 489 | 510 | 541 | 541 | 210 |
| | Barrier Height (ft.) = | 17 | 16 | 15 | 14 | 13 |
| | Barrier Area (sq. ft.) = | 8,313 | 8,160 | 8,115 | 7,574 | 2,730 |
| | **Inputs – Category A, C, D, or E** | | | | | |
| | Barrier Height (ft.) = | n/a | n/a | n/a | n/a | n/a |
| | Barrier Length (ft.) = | n/a | n/a | n/a | n/a | n/a |
| | Barrier Area (ft.) = | n/a | n/a | n/a | n/a | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a | n/a | n/a | n/a | n/a |
| | Safety Barrier (linear ft.) = | n/a | n/a | n/a | n/a | n/a |
| | **Inputs – Category B** | | | | | |
| | Barrier Height (ft.) = | 17 | 16 | 15 | 14 | 13 |
| | Barrier Length (ft.) = | 489 | 510 | 541 | 541 | 210 |
| | Barrier Area (sq. ft.) = | 8,313 | 8,160 | 8,115 | 7,574 | 2,730 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 | 0 | 0 | 0 | 0 |
| | Safety Barrier (linear ft.) = | 489 | 510 | 541 | 541 | 210 |
| Feasibility | **Acoustic Feasibility** | | | | | |
| Feasibility | Front Row Receptors = | 1 | 1 | 1 | 1 | 1 |
| Feasibility | Front-Row Receptors with a 5 dBA Reduction = | 1 | 1 | 1 | 1 | 1 |
| Feasibility | % of Front-Row Receptors Reduced At Least 5 dBA = | 100% | 100% | 100% | 100% | 100% |
| Feasibility | Acoustically Feasible = | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| Reasonableness | **Noise Reduction Design Goal** | | | | | |
| Reasonableness | Front Row Receptors = | 1 | 1 | 1 | 1 | 1 |
| Reasonableness | Front Row Receptors with 7 dBA Reduction = | 1 | 1 | 1 | 1 | 1 |
| Reasonableness | % of Front Row Reduced At Least 7 dBA = | 100% | 100% | 100% | 100% | 100% |
| Reasonableness | Meets Noise Reduction Design Goal = | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| Reasonableness | **Cost Effectiveness – Category A, C, D, or E** | | | | | |
| Reasonableness | Barrier Cost (Barrier area x 20) = | n/a | n/a | n/a | n/a | n/a |
| Reasonableness | Right-of-Way Acquisition (sq. ft. x 20) = | n/a | n/a | n/a | n/a | n/a |
| Reasonableness | Safety Barrier (linear ft. x 125) = | n/a | n/a | n/a | n/a | n/a |
| Reasonableness | Total Barrier Cost = | n/a | n/a | n/a | n/a | n/a |
| Reasonableness | Allowable Cost (length x 360) = | n/a | n/a | n/a | n/a | n/a |
| Reasonableness | Cost Reasonable = | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** |
| Reasonableness | **Cost Effectiveness – Category B** | | | | | |
| Reasonableness | Barrier Cost (Barrier area x 20) = | $166,260 | $163,200 | $162,300 | $151,480 | $54,600 |
| Reasonableness | Right-of-Way Acquisition (sq. ft. x 20) = | $0 | $0 | $0 | $0 | $0 |
| Reasonableness | Safety Barrier (linear ft. x 125) = | $61,125 | $63,750 | $67,625 | $67,625 | $26,250 |
| Reasonableness | Total Barrier Cost = | $227,385 | $226,950 | $229,925 | $219,105 | $80,850 |
| Reasonableness | Allowable Cost (benefited x 30k) = | $90,000 | $90,000 | $90,000 | $90,000 | $30,000 |
| Reasonableness | Benefited (Category B w/ 5 dBA Reduction) = | 3 | 3 | 3 | 3 | 1 |
| Reasonableness | Cost per Benefited Receptor (Barrier cost / benefited) = | $75,795 | $75,650 | $76,642 | $73,035 | $80,850 |
| Reasonableness | Cost Reasonable = | **No** | **No** | **No** | **No** | **No** |
| | Is Noise Barrier 11 Feasible and Reasonable? | No | No | No | No | No |

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 11

| NAC | | | | | | | 12-Foot Barrier | | | 11-Foot Barrier | | | 10-Foot Barrier | | | 9-Foot Barrier | | | 8-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN001 | Yes | 1 | B | 46 | 67 | 21 | 60 | 7 | 1 | 60 | 7 | 1 | 60 | 7 | 1 | 60 | 7 | 1 | 60 | 7 | 1 |
| RN020 | No | 1 | B | 46 | 63 | 17 | 63 | 0 | 0 | 63 | 0 | 0 | 63 | 0 | 0 | 63 | 0 | 0 | 62 | 1 | 0 |
| RN021 | No | 1 | B | 46 | 62 | 16 | 62 | 0 | 0 | 62 | 0 | 0 | 61 | 1 | 0 | 61 | 1 | 0 | 61 | 1 | 0 |
| RN022 | No | 1 | B | 46 | 59 | 13 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 | 58 | 1 | 0 |
| RN023 | No | 1 | B | 46 | 58 | 12 | 58 | 0 | 0 | 58 | 0 | 0 | 58 | 0 | 0 | 58 | 0 | 0 | 58 | 0 | 0 |
| RN024 | No | 1 | B | 47 | 56 | 9 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |
| RN025 | No | 1 | B | 60 | 60 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 |
| RN026 | No | 1 | B | 51 | 56 | 5 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 |
| RN027 | No | 1 | B | 51 | 56 | 5 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 | 56 | 0 | 0 |
| RN028 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RN029 | No | 1 | B | 49 | 56 | 7 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 | 55 | 1 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 11

| NAC | 12-Foot Barrier | 11-Foot Barrier | 10-Foot Barrier | 9-Foot Barrier | 8-Foot Barrier |
|---|---|---|---|---|---|
| **Inputs – Overall** | | | | | |
| Barrier Length (ft.) = | 150 | 160 | 170 | 190 | 250 |
| Barrier Height (ft.) = | 12 | 11 | 10 | 9 | 8 |
| Barrier Area (sq. ft.) = | 1,800 | 1,760 | 1,700 | 1,710 | 2,000 |
| **Inputs – Category A, C, D, or E** | | | | | |
| Barrier Height (ft.) = | n/a | n/a | n/a | n/a | n/a |
| Barrier Length (ft.) = | n/a | n/a | n/a | n/a | n/a |
| Barrier Area (ft.) = | n/a | n/a | n/a | n/a | n/a |
| Right-of-Way Acquisition Area (sq. ft.) = | n/a | n/a | n/a | n/a | n/a |
| Safety Barrier (linear ft.) = | n/a | n/a | n/a | n/a | n/a |
| **Inputs – Category B** | | | | | |
| Barrier Height (ft.) = | 12 | 11 | 10 | 9 | 8 |
| Barrier Length (ft.) = | 150 | 160 | 170 | 190 | 250 |
| Barrier Area (sq. ft.) = | 1,800 | 1,760 | 1,700 | 1,710 | 2,000 |
| Right-of-Way Acquisition Area (sq. ft.) = | 0 | 0 | 0 | 0 | 0 |
| Safety Barrier (linear ft.) = | 150 | 160 | 170 | 190 | 250 |
| **Acoustic Feasibility** | | | | | |
| Front Row Receptors = | 1 | 1 | 1 | 1 | 1 |
| Front-Row Receptors with a 5 dBA Reduction = | 1 | 1 | 1 | 1 | 1 |
| % of Front-Row Receptors Reduced At Least 5 dBA = | 100% | 100% | 100% | 100% | 100% |
| Acoustically Feasible = | Yes | Yes | Yes | Yes | Yes |
| **Noise Reduction Design Goal** | | | | | |
| Front Row Receptors = | 1 | 1 | 1 | 1 | 1 |
| Front Row Receptors with 7 dBA Reduction = | 1 | 1 | 1 | 1 | 1 |
| % of Front Row Reduced At Least 7 dBA = | 100% | 100% | 100% | 100% | 100% |
| Meets Noise Reduction Design Goal = | Yes | Yes | Yes | Yes | Yes |
| **Cost Effectiveness – Category A, C, D, or E** | | | | | |
| Barrier Cost (Barrier area x 20) = | n/a | n/a | n/a | n/a | n/a |
| Right-of-Way Acquisition (sq. ft. x 20) = | n/a | n/a | n/a | n/a | n/a |
| Safety Barrier (linear ft. x 125) = | n/a | n/a | n/a | n/a | n/a |
| Total Barrier Cost = | n/a | n/a | n/a | n/a | n/a |
| Allowable Cost (length x 360) = | n/a | n/a | n/a | n/a | n/a |
| Cost Reasonable = | n/a | n/a | n/a | n/a | n/a |
| **Cost Effectiveness – Category B** | | | | | |
| Barrier Cost (Barrier area x 20) = | $36,000 | $35,200 | $34,000 | $34,200 | $40,000 |
| Right-of-Way Acquisition (sq. ft. x 20) = | $0 | $0 | $0 | $0 | $0 |
| Safety Barrier (linear ft. x 125) = | $18,750 | $20,000 | $21,250 | $23,750 | $31,250 |
| Total Barrier Cost = | $54,750 | $55,200 | $55,250 | $57,950 | $71,250 |
| Allowable Cost (benefited x 30k) = | $30,000 | $30,000 | $30,000 | $30,000 | $30,000 |
| Benefited (Category B w/ 5 dBA Reduction) = | 1 | 1 | 1 | 1 | 1 |
| Cost per Benefited Receptor (Barrier cost / benefited) = | $54,750 | $55,200 | $55,250 | $57,950 | $71,250 |
| Cost Reasonable = | No | No | No | No | No |
| **Is Noise Barrier 11 Feasible and Reasonable?** | No | No | No | No | No |

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 11

| NAC | | | | | | | 7-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN001 | Yes | 1 | B | 46 | 67 | 21 | 61 | 6 | 1 |
| RN020 | No | 1 | B | 46 | 63 | 17 | 61 | 2 | 0 |
| RN021 | No | 1 | B | 46 | 62 | 16 | 59 | 3 | 0 |
| RN022 | No | 1 | B | 46 | 59 | 13 | 56 | 3 | 0 |
| RN023 | No | 1 | B | 46 | 58 | 12 | 57 | 1 | 0 |
| RN024 | No | 1 | B | 47 | 56 | 9 | 55 | 1 | 0 |
| RN025 | No | 1 | B | 60 | 60 | 0 | 60 | 0 | 0 |
| RN026 | No | 1 | B | 51 | 56 | 5 | 56 | 0 | 0 |
| RN027 | No | 1 | B | 51 | 56 | 5 | 56 | 0 | 0 |
| RN028 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RN029 | No | 1 | B | 49 | 56 | 7 | 55 | 1 | 0 |

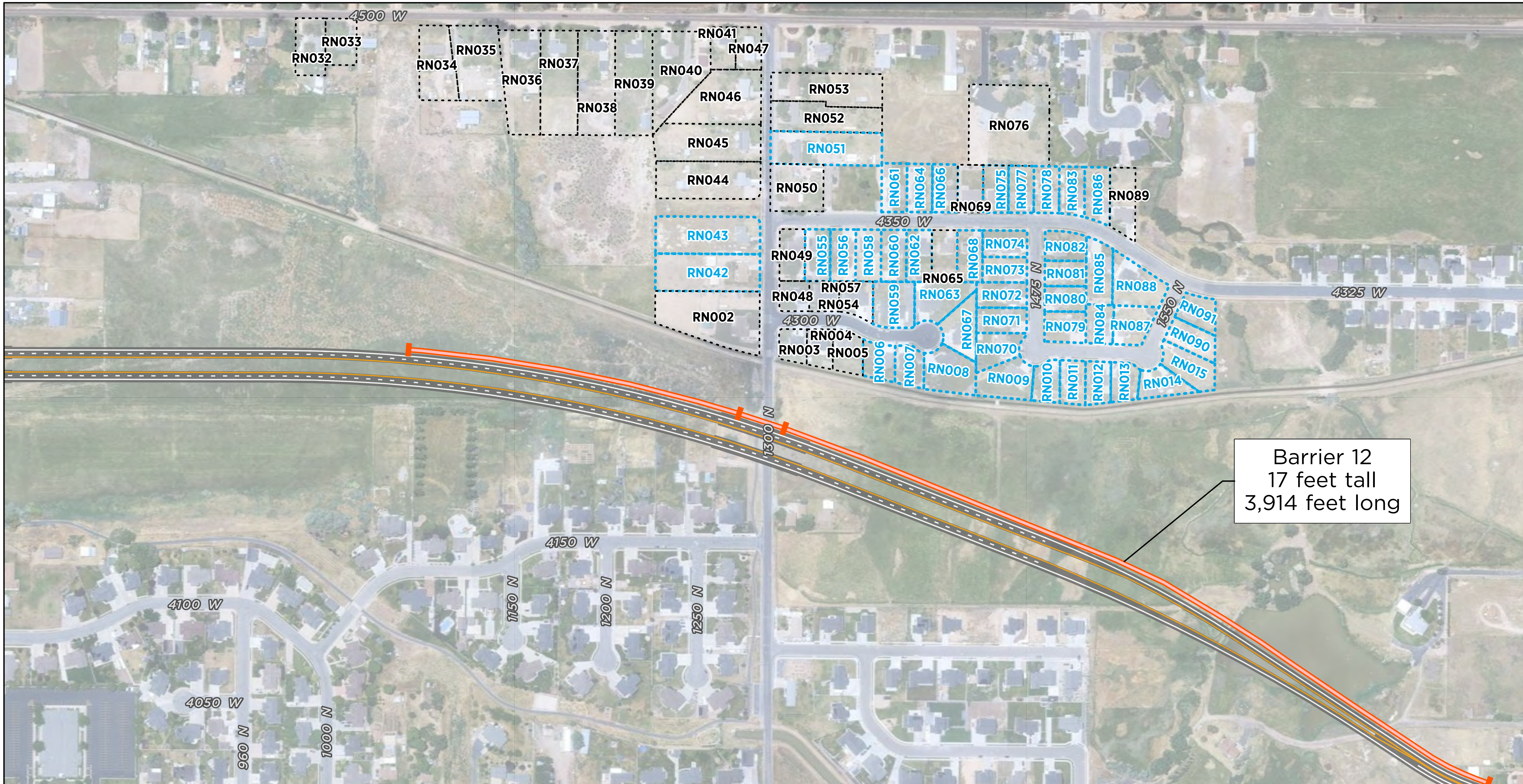
= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

SR-177; SR-193 to 1800 N Noise Abatement Analysis
Noise Barrier 11

| NAC | 7-Foot Barrier |
|---|---|

| | | |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 541 |
| | Barrier Height (ft.) = | 7 |
| | Barrier Area (sq. ft.) = | 3,787 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | n/a |
| | Barrier Length (ft.) = | n/a |
| | Barrier Area (ft.) = | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | Safety Barrier (linear ft.) = | n/a |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 7 |
| | Barrier Length (ft.) = | 541 |
| | Barrier Area (sq. ft.) = | 3,787 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 541 |
| Feasibility | **Acoustic Feasibility** | |
| | Front Row Receptors = | 1 |
| | Front-Row Receptors with a 5 dBA Reduction = | 1 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 100% |
| | Acoustically Feasible = | **Yes** |
| Reasonableness | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 1 |
| | Front Row Receptors with 7 dBA Reduction = | 0 |
| | % of Front Row Reduced At Least 7 dBA = | 0% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |

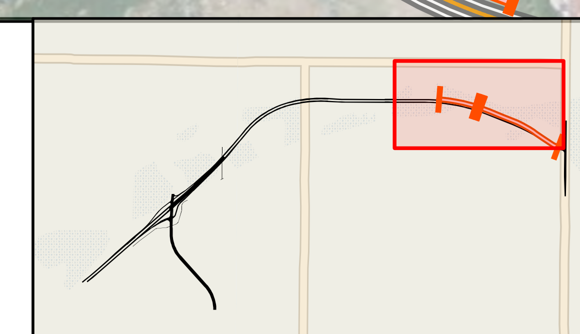
| | |
|---|---|
| Is Noise Barrier 11 Feasible and Reasonable? | No |




**SR-177; SR-193 to 1800 North Re-Evaluation**
Traffic Noise Study
Exhibit 2: Noise Barriers
UDOT Project No.: S-R199(381)
UDOT PIN: 20927

Proposed Action Design
Barrier Not Recommended for Balloting
Receptor Area
Benefited Receptor

0 125 250 500 Feet



**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 12**

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN002 | Yes | 1 | B | 46 | 65 | 19 | 61 | 4 | 0 |
| RN003 | Yes | 1 | B | 51 | 65 | 14 | 62 | 3 | 0 |
| RN004 | Yes | 1 | B | 46 | 65 | 19 | 61 | 4 | 0 |
| RN005 | Yes | 1 | B | 46 | 64 | 18 | 60 | 4 | 0 |
| RN006 | Yes | 1 | B | 46 | 63 | 17 | 58 | 5 | 1 |
| RN007 | Yes | 1 | B | 46 | 63 | 17 | 57 | 6 | 1 |
| RN008 | Yes | 1 | B | 46 | 60 | 14 | 53 | 7 | 1 |
| RN009 | Yes | 1 | B | 46 | 61 | 15 | 55 | 6 | 1 |
| RN010 | Yes | 1 | B | 46 | 61 | 15 | 54 | 7 | 1 |
| RN011 | Yes | 1 | B | 46 | 60 | 14 | 54 | 6 | 1 |
| RN012 | Yes | 1 | B | 46 | 60 | 14 | 54 | 6 | 1 |
| RN013 | Yes | 1 | B | 46 | 60 | 14 | 53 | 7 | 1 |
| RN014 | Yes | 1 | B | 46 | 59 | 13 | 51 | 8 | 1 |
| RN015 | Yes | 1 | B | 46 | 55 | 9 | 49 | 6 | 1 |
| RN032 | No | 1 | B | 54 | 57 | 3 | 57 | 0 | 0 |
| RN033 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RN034 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RN035 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RN036 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RN037 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RN038 | No | 1 | B | 48 | 56 | 8 | 54 | 2 | 0 |
| RN039 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 |
| RN040 | No | 1 | B | 47 | 56 | 9 | 53 | 3 | 0 |
| RN041 | No | 1 | B | 52 | 55 | 3 | 54 | 1 | 0 |
| RN042 | No | 1 | B | 46 | 60 | 14 | 54 | 6 | 1 |
| RN043 | No | 1 | B | 46 | 58 | 12 | 53 | 5 | 1 |
| RN044 | No | 1 | B | 46 | 57 | 11 | 53 | 4 | 0 |
| RN045 | No | 1 | B | 46 | 56 | 10 | 52 | 4 | 0 |
| RN046 | No | 1 | B | 48 | 55 | 7 | 52 | 3 | 0 |
| RN047 | No | 1 | B | 57 | 58 | 1 | 58 | 0 | 0 |
| RN048 | No | 1 | B | 54 | 62 | 8 | 59 | 3 | 0 |
| RN049 | No | 1 | B | 52 | 59 | 7 | 55 | 4 | 0 |
| RN050 | No | 1 | B | 46 | 57 | 11 | 53 | 4 | 0 |
| RN051 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 |
| RN052 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 |
| RN053 | No | 1 | B | 49 | 52 | 3 | 50 | 2 | 0 |
| RN054 | No | 1 | B | 46 | 57 | 11 | 53 | 4 | 0 |
| RN055 | No | 1 | B | 46 | 55 | 9 | 50 | 5 | 1 |
| RN056 | No | 1 | B | 46 | 55 | 9 | 49 | 6 | 1 |
| RN057 | No | 1 | B | 46 | 60 | 14 | 57 | 3 | 0 |
| RN058 | No | 1 | B | 46 | 54 | 8 | 49 | 5 | 1 |
| RN059 | No | 1 | B | 46 | 58 | 12 | 52 | 6 | 1 |
| RN060 | No | 1 | B | 46 | 55 | 9 | 50 | 5 | 1 |
| RN061 | No | 1 | B | 46 | 55 | 9 | 49 | 6 | 1 |
| RN062 | No | 1 | B | 46 | 55 | 9 | 50 | 5 | 1 |
| RN063 | No | 1 | B | 46 | 57 | 11 | 52 | 5 | 1 |
| RN064 | No | 1 | B | 46 | 55 | 9 | 50 | 5 | 1 |
| RN065 | No | 1 | B | 46 | 54 | 8 | 50 | 4 | 0 |
| RN066 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 12**

| NAC | | | | | | | 17-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN067 | No | 1 | B | 46 | 56 | 10 | 50 | 6 | 1 |
| RN068 | No | 1 | B | 46 | 55 | 9 | 50 | 5 | 1 |
| RN069 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 |
| RN070 | No | 1 | B | 46 | 58 | 12 | 52 | 6 | 1 |
| RN071 | No | 1 | B | 46 | 56 | 10 | 50 | 6 | 1 |
| RN072 | No | 1 | B | 46 | 56 | 10 | 50 | 6 | 1 |
| RN073 | No | 1 | B | 46 | 55 | 9 | 49 | 6 | 1 |
| RN074 | No | 1 | B | 46 | 54 | 8 | 48 | 6 | 1 |
| RN075 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 |
| RN076 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 |
| RN077 | No | 1 | B | 46 | 53 | 7 | 47 | 6 | 1 |
| RN078 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 |
| RN079 | No | 1 | B | 46 | 56 | 10 | 49 | 7 | 1 |
| RN080 | No | 1 | B | 46 | 48 | 2 | 42 | 6 | 1 |
| RN081 | No | 1 | B | 46 | 48 | 2 | 42 | 6 | 1 |
| RN082 | No | 1 | B | 46 | 47 | 1 | 42 | 5 | 1 |
| RN083 | No | 1 | B | 46 | 51 | 5 | 46 | 5 | 1 |
| RN084 | No | 1 | B | 46 | 55 | 9 | 50 | 5 | 1 |
| RN085 | No | 1 | B | 46 | 51 | 5 | 45 | 6 | 1 |
| RN086 | No | 1 | B | 46 | 50 | 4 | 45 | 5 | 1 |
| RN087 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 |
| RN088 | No | 1 | B | 46 | 51 | 5 | 45 | 6 | 1 |
| RN089 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 |
| RN090 | No | 1 | B | 46 | 54 | 8 | 48 | 6 | 1 |
| RN091 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 |

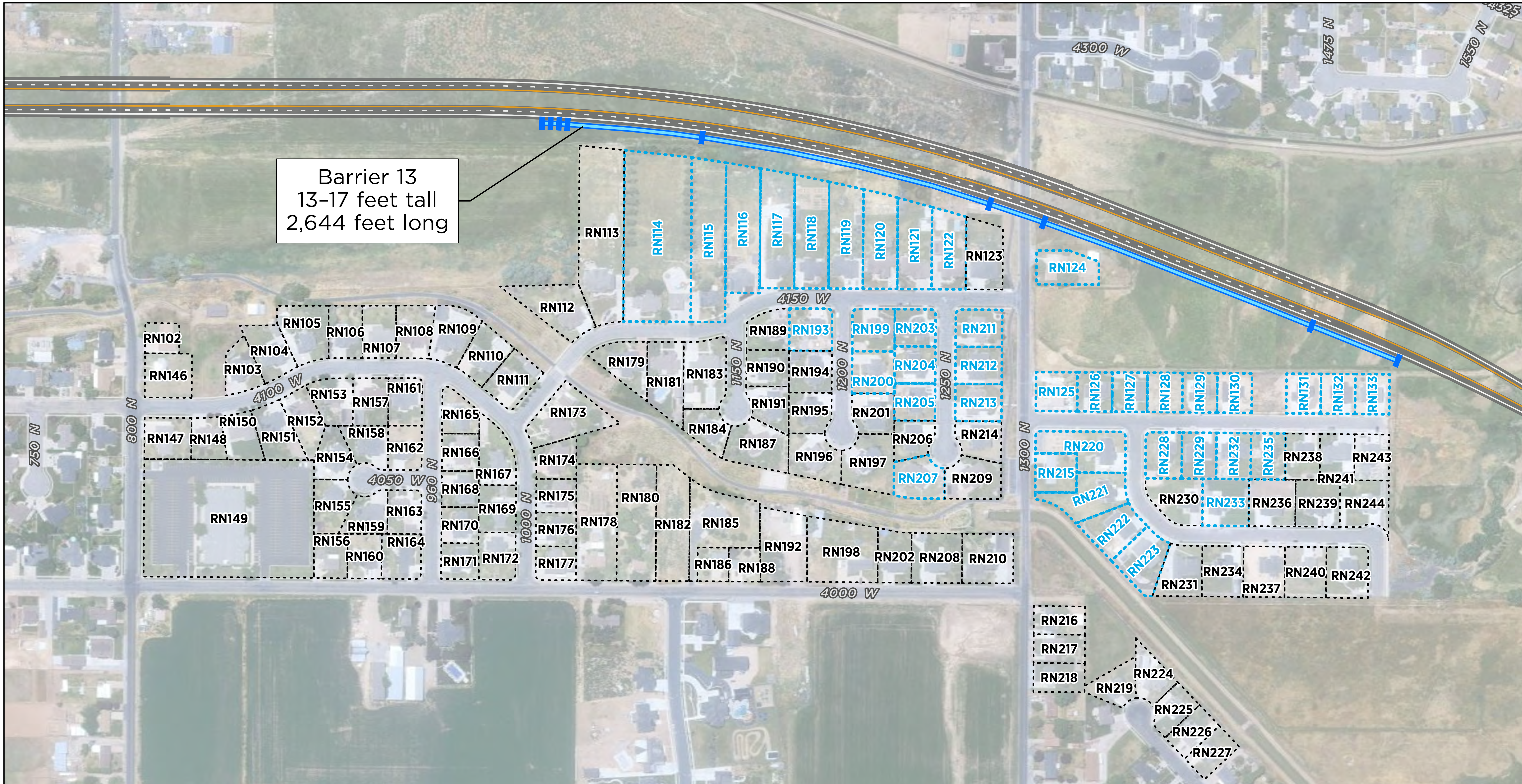
= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 12**

| | NAC | 17-Foot Barrier |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 3,914 |
| | *Barrier Height (ft.) = | 10 & 17 |
| | Barrier Area (sq. ft.) = | 65,390 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | n/a |
| | Barrier Length (ft.) = | n/a |
| | Barrier Area (ft.) = | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | Safety Barrier (linear ft.) = | n/a |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 10 & 17 |
| | Barrier Length (ft.) = | 3,914 |
| | Barrier Area (sq. ft.) = | 65,390 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | Safety Barrier (linear ft.) = | 0 |
| **Feasibility** | **Acoustic Feasibility** | |
| | Front Row Receptors = | 14 |
| | Front-Row Receptors with a 5 dBA Reduction = | 10 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 71% |
| | Acoustically Feasible = | **Yes** |
| **Reasonableness** | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 14 |
| | Front Row Receptors with 7 dBA Reduction = | 4 |
| | % of Front Row Reduced At Least 7 dBA = | 29% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |

**Is Noise Barrier 12 Feasible and Reasonable?** **No**

*Overall barrier heights include a uniform barrier at the height indicated and a 10-foot-tall and 164-foot-long segment on the bridge over 1300 North.




**SR-177; SR-193 to 1800 North Re-Evaluation**

Traffic Noise Study

Exhibit 2: Noise Barriers

UDOT Project No.: S-R199(381)

UDOT PIN: 20927

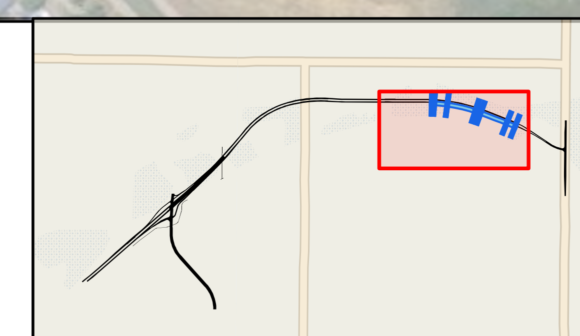
Proposed Action Design

Barrier Recommended for Balloting

Receptor Area

Benefited Receptor

0 125 250 500 Feet



**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 13**

| NAC | | | | | | | 17-Foot Barrier | | | 17-Foot Optimized Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | | 14-Foot Barrier | | | 13-Foot Barrier | | | 12-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN102 | No | 1 | B | 46 | 63 | 17 | 62 | 1 | 0 | 62 | 1 | 0 | 62 | 1 | 0 | 62 | 1 | 0 | 62 | 1 | 0 | 62 | 1 | 0 | 62 | 1 | 0 |
| RN103 | No | 1 | B | 46 | 60 | 14 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 | 60 | 0 | 0 |
| RN104 | No | 1 | B | 46 | 59 | 13 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 | 59 | 0 | 0 |
| RN105 | No | 1 | B | 46 | 61 | 15 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 |
| RN106 | No | 1 | B | 46 | 61 | 15 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 |
| RN107 | No | 1 | B | 46 | 60 | 14 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 |
| RN108 | No | 1 | B | 46 | 60 | 14 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 | 59 | 1 | 0 | 58 | 2 | 0 | 59 | 1 | 0 | 59 | 1 | 0 |
| RN109 | No | 1 | B | 46 | 58 | 12 | 57 | 1 | 0 | 57 | 1 | 0 | 57 | 1 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 56 | 2 | 0 |
| RN110 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 | 57 | 1 | 0 | 56 | 2 | 0 | 56 | 2 | 0 | 55 | 3 | 0 | 55 | 3 | 0 | 55 | 3 | 0 |
| RN111 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 | 56 | 1 | 0 | 55 | 2 | 0 | 55 | 2 | 0 | 54 | 3 | 0 | 54 | 3 | 0 | 54 | 3 | 0 |
| RN112 | No | 1 | B | 46 | 60 | 14 | 57 | 3 | 0 | 58 | 2 | 0 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 | 57 | 3 | 0 |
| RN113 | Yes | 1 | B | 46 | 63 | 17 | 58 | 5 | 1 | 59 | 4 | 0 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 | 59 | 4 | 0 | 59 | 4 | 0 |
| RN114 | Yes | 1 | B | 46 | 62 | 16 | 57 | 5 | 1 | 57 | 5 | 1 | 57 | 5 | 1 | 57 | 5 | 1 | 57 | 5 | 1 | 58 | 4 | 0 | 58 | 4 | 0 |
| RN115 | Yes | 1 | B | 46 | 62 | 16 | 56 | 6 | 1 | 57 | 5 | 1 | 57 | 5 | 1 | 57 | 5 | 1 | 57 | 5 | 1 | 58 | 4 | 0 | 58 | 4 | 0 |
| RN116 | Yes | 1 | B | 46 | 64 | 18 | 57 | 7 | 1 | 57 | 7 | 1 | 57 | 7 | 1 | 58 | 6 | 1 | 58 | 6 | 1 | 59 | 5 | 1 | 59 | 5 | 1 |
| RN117 | Yes | 1 | B | 46 | 67 | 21 | 59 | 8 | 1 | 59 | 8 | 1 | 59 | 8 | 1 | 59 | 8 | 1 | 59 | 8 | 1 | 60 | 7 | 1 | 61 | 6 | 1 |
| RN118 | Yes | 1 | B | 46 | 67 | 21 | 59 | 8 | 1 | 59 | 8 | 1 | 59 | 8 | 1 | 60 | 7 | 1 | 60 | 7 | 1 | 60 | 7 | 1 | 61 | 6 | 1 |
| RN119 | Yes | 1 | B | 46 | 68 | 22 | 60 | 8 | 1 | 60 | 8 | 1 | 60 | 8 | 1 | 60 | 8 | 1 | 60 | 8 | 1 | 61 | 7 | 1 | 61 | 7 | 1 |
| RN120 | Yes | 1 | B | 46 | 67 | 21 | 61 | 6 | 1 | 61 | 6 | 1 | 61 | 6 | 1 | 61 | 6 | 1 | 61 | 6 | 1 | 61 | 6 | 1 | 62 | 5 | 1 |
| RN121 | Yes | 1 | B | 46 | 66 | 20 | 59 | 7 | 1 | 59 | 7 | 1 | 59 | 7 | 1 | 59 | 7 | 1 | 59 | 7 | 1 | 59 | 7 | 1 | 60 | 6 | 1 |
| RN122 | Yes | 1 | B | 46 | 68 | 22 | 63 | 5 | 1 | 63 | 5 | 1 | 63 | 5 | 1 | 63 | 5 | 1 | 63 | 5 | 1 | 63 | 5 | 1 | 63 | 5 | 1 |
| RN123 | Yes | 1 | B | 48 | 70 | 22 | 66 | 4 | 0 | 66 | 4 | 0 | 66 | 4 | 0 | 66 | 4 | 0 | 66 | 4 | 0 | 66 | 4 | 0 | 66 | 4 | 0 |
| RN124 | Yes | 1 | B | 46 | 68 | 22 | 58 | 10 | 1 | 58 | 10 | 1 | 58 | 10 | 1 | 58 | 10 | 1 | 59 | 9 | 1 | 59 | 9 | 1 | 59 | 9 | 1 |
| RN125 | No | 1 | B | 46 | 62 | 16 | 55 | 7 | 1 | 55 | 7 | 1 | 55 | 7 | 1 | 55 | 7 | 1 | 56 | 6 | 1 | 56 | 6 | 1 | 56 | 6 | 1 |
| RN126 | No | 1 | B | 46 | 63 | 17 | 56 | 7 | 1 | 56 | 7 | 1 | 56 | 7 | 1 | 56 | 7 | 1 | 56 | 7 | 1 | 56 | 7 | 1 | 57 | 6 | 1 |
| RN127 | Yes | 1 | B | 46 | 64 | 18 | 55 | 9 | 1 | 55 | 9 | 1 | 56 | 8 | 1 | 56 | 8 | 1 | 56 | 8 | 1 | 56 | 8 | 1 | 57 | 7 | 1 |
| RN128 | Yes | 1 | B | 46 | 65 | 19 | 56 | 9 | 1 | 57 | 8 | 1 | 57 | 8 | 1 | 57 | 8 | 1 | 57 | 8 | 1 | 57 | 8 | 1 | 58 | 7 | 1 |
| RN129 | Yes | 1 | B | 46 | 66 | 20 | 57 | 9 | 1 | 57 | 9 | 1 | 57 | 9 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 59 | 7 | 1 |
| RN130 | Yes | 1 | B | 46 | 66 | 20 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 58 | 8 | 1 | 59 | 7 | 1 | 59 | 7 | 1 |
| RN131 | Yes | 1 | B | 46 | 69 | 23 | 60 | 9 | 1 | 60 | 9 | 1 | 60 | 9 | 1 | 60 | 9 | 1 | 61 | 8 | 1 | 61 | 8 | 1 | 61 | 8 | 1 |
| RN132 | Yes | 1 | B | 46 | 69 | 23 | 61 | 8 | 1 | 61 | 8 | 1 | 61 | 8 | 1 | 61 | 8 | 1 | 62 | 7 | 1 | 62 | 7 | 1 | 62 | 7 | 1 |
| RN133 | Yes | 1 | B | 46 | 70 | 24 | 65 | 5 | 1 | 65 | 5 | 1 | 65 | 5 | 1 | 65 | 5 | 1 | 65 | 5 | 1 | 65 | 5 | 1 | 65 | 5 | 1 |
| RN146 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RN147 | No | 1 | B | 48 | 55 | 7 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 | 55 | 0 | 0 |
| RN148 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 |
| RN149 | No | 1 | D | 21 | 25 | 4 | 25 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 | 25 | 0 | 0 |
| RN150 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 | 54 | 0 | 0 |
| RN151 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 |
| RN152 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 |
| RN153 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 | 52 | 0 | 0 | 52 | 0 | 0 | 52 | 0 | 0 | 51 | 1 | 0 | 52 | 0 | 0 | 52 | 0 | 0 |
| RN154 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 |
| RN155 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 |
| RN156 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 | 46 | 0 | 0 |
| RN157 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 | 51 | 0 | 0 |
| RN158 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 47 | 0 | 0 |
| RN159 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 |
| RN160 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RN161 | No | 1 | B | 46 | 51 | 5 | 50 | 1 | 0 | 51 | 0 | 0 | 50 | 1 | 0 | 50 | 1 | 0 | 50 | 1 | 0 | 50 | 1 | 0 | 50 | 1 | 0 |
| RN162 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RN163 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 |
| RN164 | No | 1 | B | 48 | 49 | 1 | 49 | 0 | 0 | 49 | 0 | 0 | 49 | 0 | 0 | 49 | 0 | 0 | 49 | 0 | 0 | 49 | 0 | 0 | 49 | 0 | 0 |
| RN165 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 46 | 1 | 0 |
| RN166 | No | 1 | B | 46 | 48 | 2 | 44 | 4 | 0 | 45 | 3 | 0 | 44 | 4 | 0 | 44 | 4 | 0 | 45 | 3 | 0 | 45 | 3 | 0 | 46 | 2 | 0 |
| RN167 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 44 | 3 | 0 | 44 | 3 | 0 | 45 | 2 | 0 |
| RN168 | No | 1 | B | 46 | 46 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 43 | 3 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RN169 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 |
| RN170 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 | 45 | 1 | 0 |
| RN171 | No | 1 | B | 49 | 50 | 1 | 50 | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 | 50 | 0 | 0 |
| RN172 | No | 1 | B | 52 | 53 | 1 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 | 53 | 0 | 0 |
| RN173 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 | 48 | 3 | 0 | 49 | 2 | 0 | 49 | 2 | 0 |
| RN174 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 |
| RN175 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 46 | 1 | 0 | 46 | 1 | 0 |
| RN176 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 46 | 1 | 0 |
| RN177 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 | 46 | 1 | 0 | 47 | 0 | 0 | 47 | 0 | 0 | 46 | 1 | 0 | 47 | 0 | 0 | 47 | 0 | 0 |
| RN178 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 46 | 1 | 0 |
| RN179 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 | 53 | 3 | 0 | 53 | 3 | 0 | 53 | 3 | 0 | 53 | 3 | 0 | 53 | 3 | 0 | 53 | 3 | 0 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 13**

| NAC | | | | | | | 17-Foot Barrier | | | 17-Foot Optimized Barrier | | | 16-Foot Barrier | | | 15-Foot Barrier | | | 14-Foot Barrier | | | 13-Foot Barrier | | | 12-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN180 | No | 1 | B | 47 | 50 | 3 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RN181 | No | 1 | B | 46 | 55 | 9 | 51 | 4 | 0 | 52 | 3 | 0 | 51 | 4 | 0 | 52 | 3 | 0 | 52 | 3 | 0 | 52 | 3 | 0 | 53 | 2 | 0 |
| RN182 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RN183 | No | 1 | B | 46 | 54 | 8 | 50 | 4 | 0 | 50 | 4 | 0 | 50 | 4 | 0 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 |
| RN184 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RN185 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RN186 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 | 47 | 1 | 0 | 47 | 1 | 0 | 47 | 1 | 0 | 47 | 1 | 0 | 47 | 1 | 0 | 47 | 1 | 0 |
| RN187 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RN188 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 47 | 0 | 0 |
| RN189 | No | 1 | B | 46 | 56 | 10 | 52 | 4 | 0 | 52 | 4 | 0 | 53 | 3 | 0 | 53 | 3 | 0 | 53 | 3 | 0 | 54 | 2 | 0 | 54 | 2 | 0 |
| RN190 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RN191 | No | 1 | B | 46 | 48 | 2 | 45 | 3 | 0 | 45 | 3 | 0 | 45 | 3 | 0 | 45 | 3 | 0 | 46 | 2 | 0 | 46 | 2 | 0 | 46 | 2 | 0 |
| RN192 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 | 49 | 1 | 0 |
| RN193 | No | 1 | B | 46 | 54 | 8 | 47 | 7 | 1 | 48 | 6 | 1 | 47 | 7 | 1 | 48 | 6 | 1 | 48 | 6 | 1 | 49 | 5 | 1 | 49 | 5 | 1 |
| RN194 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 | 46 | 1 | 0 | 45 | 2 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 46 | 1 | 0 | 47 | 0 | 0 |
| RN195 | No | 1 | B | 46 | 47 | 1 | 43 | 4 | 0 | 44 | 3 | 0 | 44 | 3 | 0 | 44 | 3 | 0 | 45 | 2 | 0 | 45 | 2 | 0 | 45 | 2 | 0 |
| RN196 | No | 1 | B | 46 | 51 | 5 | 49 | 2 | 0 | 49 | 2 | 0 | 49 | 2 | 0 | 49 | 2 | 0 | 49 | 2 | 0 | 50 | 1 | 0 | 49 | 2 | 0 |
| RN197 | No | 1 | B | 46 | 50 | 4 | 46 | 4 | 0 | 46 | 4 | 0 | 46 | 4 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 48 | 2 | 0 |
| RN198 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RN199 | No | 1 | B | 46 | 58 | 12 | 52 | 6 | 1 | 52 | 6 | 1 | 52 | 6 | 1 | 52 | 6 | 1 | 53 | 5 | 1 | 53 | 5 | 1 | 53 | 5 | 1 |
| RN200 | No | 1 | B | 46 | 52 | 6 | 47 | 5 | 1 | 47 | 5 | 1 | 47 | 5 | 1 | 47 | 5 | 1 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 |
| RN201 | No | 1 | B | 46 | 49 | 3 | 45 | 4 | 0 | 45 | 4 | 0 | 45 | 4 | 0 | 46 | 3 | 0 | 46 | 3 | 0 | 46 | 3 | 0 | 47 | 2 | 0 |
| RN202 | No | 1 | B | 46 | 49 | 3 | 46 | 3 | 0 | 46 | 3 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 |
| RN203 | No | 1 | B | 46 | 58 | 12 | 52 | 6 | 1 | 52 | 6 | 1 | 52 | 6 | 1 | 52 | 6 | 1 | 53 | 5 | 1 | 53 | 5 | 1 | 53 | 5 | 1 |
| RN204 | No | 1 | B | 46 | 52 | 6 | 46 | 6 | 1 | 46 | 6 | 1 | 46 | 6 | 1 | 47 | 5 | 1 | 47 | 5 | 1 | 48 | 4 | 0 | 48 | 4 | 0 |
| RN205 | No | 1 | B | 46 | 50 | 4 | 45 | 5 | 1 | 45 | 5 | 1 | 46 | 4 | 0 | 46 | 4 | 0 | 46 | 4 | 0 | 47 | 3 | 0 | 47 | 3 | 0 |
| RN206 | No | 1 | B | 46 | 48 | 2 | 45 | 3 | 0 | 45 | 3 | 0 | 45 | 3 | 0 | 45 | 3 | 0 | 45 | 3 | 0 | 46 | 2 | 0 | 46 | 2 | 0 |
| RN207 | No | 1 | B | 46 | 52 | 6 | 48 | 5 | 1 | 48 | 5 | 1 | 47 | 5 | 1 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 |
| RN208 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 48 | 3 | 0 |
| RN209 | No | 1 | B | 46 | 51 | 5 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 47 | 4 | 0 | 48 | 3 | 0 | 48 | 3 | 0 |
| RN210 | No | 1 | B | 46 | 52 | 6 | 48 | 4 | 0 | 48 | 4 | 0 | 48 | 4 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 | 49 | 3 | 0 |
| RN211 | No | 1 | B | 51 | 64 | 13 | 59 | 5 | 1 | 59 | 5 | 1 | 59 | 5 | 1 | 59 | 5 | 1 | 59 | 5 | 1 | 59 | 5 | 1 | 59 | 5 | 1 |
| RN212 | No | 1 | B | 51 | 63 | 12 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 | 58 | 5 | 1 |
| RN213 | No | 1 | B | 51 | 61 | 10 | 56 | 5 | 1 | 56 | 5 | 1 | 56 | 5 | 1 | 56 | 5 | 1 | 56 | 5 | 1 | 57 | 4 | 0 | 57 | 4 | 0 |
| RN214 | No | 1 | B | 51 | 59 | 8 | 55 | 4 | 0 | 55 | 4 | 0 | 55 | 4 | 0 | 55 | 4 | 0 | 56 | 3 | 0 | 56 | 3 | 0 | 56 | 3 | 0 |
| RN215 | No | 1 | B | 46 | 56 | 10 | 50 | 6 | 1 | 50 | 6 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 |
| RN216 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RN217 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 | 46 | 2 | 0 | 46 | 2 | 0 | 46 | 2 | 0 | 47 | 1 | 0 | 47 | 1 | 0 | 47 | 1 | 0 |
| RN218 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 44 | 2 | 0 | 45 | 1 | 0 |
| RN219 | No | 1 | B | 46 | 50 | 4 | 46 | 4 | 0 | 46 | 4 | 0 | 46 | 4 | 0 | 46 | 4 | 0 | 47 | 3 | 0 | 47 | 3 | 0 | 47 | 3 | 0 |
| RN220 | No | 1 | B | 46 | 57 | 11 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 | 52 | 5 | 1 | 52 | 5 | 1 |
| RN221 | No | 1 | B | 46 | 54 | 8 | 49 | 5 | 1 | 49 | 5 | 1 | 49 | 5 | 1 | 49 | 5 | 1 | 49 | 5 | 1 | 50 | 4 | 0 | 50 | 4 | 0 |
| RN222 | No | 1 | B | 46 | 56 | 10 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 51 | 5 | 1 | 52 | 4 | 0 | 52 | 4 | 0 |
| RN223 | No | 1 | B | 46 | 57 | 11 | 50 | 7 | 1 | 50 | 7 | 1 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 | 51 | 6 | 1 |
| RN224 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 47 | 2 | 0 | 48 | 1 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RN225 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RN226 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 | 48 | 2 | 0 |
| RN227 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 | 48 | 1 | 0 | 48 | 1 | 0 | 48 | 1 | 0 | 48 | 1 | 0 | 48 | 1 | 0 | 48 | 1 | 0 |
| RN228 | No | 1 | B | 46 | 59 | 13 | 53 | 6 | 1 | 53 | 6 | 1 | 53 | 6 | 1 | 53 | 6 | 1 | 53 | 6 | 1 | 53 | 6 | 1 | 54 | 5 | 1 |
| RN229 | No | 1 | B | 46 | 60 | 14 | 53 | 7 | 1 | 53 | 7 | 1 | 54 | 6 | 1 | 54 | 6 | 1 | 54 | 6 | 1 | 54 | 6 | 1 | 55 | 5 | 1 |
| RN230 | No | 1 | B | 46 | 53 | 7 | 49 | 4 | 0 | 49 | 4 | 0 | 49 | 4 | 0 | 49 | 4 | 0 | 50 | 3 | 0 | 50 | 3 | 0 | 50 | 3 | 0 |
| RN231 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 53 | 1 | 0 |
| RN232 | No | 1 | B | 46 | 60 | 14 | 54 | 6 | 1 | 54 | 6 | 1 | 55 | 5 | 1 | 55 | 5 | 1 | 55 | 5 | 1 | 55 | 5 | 1 | 56 | 4 | 0 |
| RN233 | No | 1 | B | 46 | 55 | 9 | 50 | 5 | 1 | 50 | 5 | 1 | 50 | 5 | 1 | 50 | 5 | 1 | 51 | 4 | 0 | 51 | 4 | 0 | 51 | 4 | 0 |
| RN234 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 | 52 | 2 | 0 |
| RN235 | No | 1 | B | 46 | 61 | 15 | 56 | 5 | 1 | 56 | 5 | 1 | 57 | 4 | 0 | 57 | 4 | 0 | 57 | 4 | 0 | 57 | 4 | 0 | 57 | 4 | 0 |
| RN236 | No | 1 | B | 46 | 56 | 10 | 52 | 4 | 0 | 52 | 4 | 0 | 52 | 4 | 0 | 52 | 4 | 0 | 52 | 4 | 0 | 53 | 3 | 0 | 53 | 3 | 0 |
| RN237 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 | 51 | 3 | 0 | 51 | 3 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 | 52 | 2 | 0 |
| RN238 | No | 1 | B | 46 | 62 | 16 | 58 | 4 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | 58 | 4 | 0 | 58 | 4 | 0 |
| RN239 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 | 53 | 3 | 0 | 54 | 2 | 0 | 54 | 2 | 0 | 54 | 2 | 0 | 54 | 2 | 0 | 54 | 2 | 0 |
| RN240 | No | 1 | B | 46 | 55 | 9 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 | 54 | 1 | 0 |
| RN241 | No | 1 | B | 46 | 62 | 16 | 59 | 3 | 0 | 59 | 3 | 0 | 59 | 3 | 0 | 59 | 3 | 0 | 59 | 3 | 0 | 59 | 3 | 0 | 59 | 3 | 0 |
| RN242 | No | 1 | B | 46 | 57 | 11 | 57 | 0 | 0 | 57 | 0 | 0 | 57 | 0 | 0 | 57 | 0 | 0 | 57 | 0 | 0 | 57 | 0 | 0 | 57 | 0 | 0 |
| RN243 | No | 1 | B | 46 | 64 | 18 | 63 | 1 | 0 | 63 | 1 | 0 | 63 | 1 | 0 | 63 | 1 | 0 | 63 | 1 | 0 | 63 | 1 | 0 | 62 | 2 | 0 |
| RN244 | No | 1 | B | 46 | 61 | 15 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 | 60 | 1 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 13**

| | NAC | 17-Foot Barrier | 17-Foot Optimized Barrier | 16-Foot Barrier | 15-Foot Barrier | 14-Foot Barrier | 13-Foot Barrier | 12-Foot Barrier |
|---|---|---|---|---|---|---|---|---|
| | **Inputs – Overall** | | | | | | | |
| | Barrier Length (ft.) = | 2,719 | 2,644 | 2,744 | 2,794 | 2,969 | 2,969 | 2,994 |
| | *Barrier Height (ft.) = | 10 & 17 | 10, 13–17 | 10 & 16 | 10 & 15 | 10 & 14 | 10 & 13 | 10 & 12 |
| | Barrier Area (sq. ft.) = | 45,040 | 42,865 | 42,890 | 41,065 | 40,890 | 38,090 | 35,590 |
| | **Inputs – Category A, C, D, or E** | | | | | | | |
| | Barrier Height (ft.) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Barrier Length (ft.) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Barrier Area (ft.) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Safety Barrier (linear ft.) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | **Inputs – Category B** | | | | | | | |
| | Barrier Height (ft.) = | 10 & 17 | 10, 13–17 | 10 & 16 | 10 & 15 | 10 & 14 | 10 & 13 | 10 & 12 |
| | Barrier Length (ft.) = | 2,719 | 2,644 | 2,744 | 2,794 | 2,969 | 2,969 | 2,994 |
| | Barrier Area (sq. ft.) = | 45,040 | 42,865 | 42,890 | 41,065 | 40,890 | 38,090 | 35,590 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Safety Barrier (linear ft.) = | 2,550 | 2,475 | 2,575 | 2,625 | 2,800 | 2,800 | 2,825 |
| **Feasibility** | **Acoustic Feasibility** | | | | | | | |
| | Front Row Receptors = | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| | Front-Row Receptors with a 5 dBA Reduction = | 18 | 17 | 18 | 18 | 18 | 15 | 15 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 95% | 89% | 95% | 95% | 95% | 79% | 79% |
| | Acoustically Feasible = | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Reasonableness** | **Noise Reduction Design Goal** | | | | | | | |
| | Front Row Receptors = | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| | Front Row Receptors with 7 dBA Reduction = | 12 | 12 | 12 | 11 | 11 | 11 | 8 |
| | % of Front Row Reduced At Least 7 dBA = | 63% | 63% | 63% | 58% | 58% | 58% | 42% |
| | Meets Noise Reduction Design Goal = | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| | **Cost Effectiveness – Category A, C, D, or E** | | | | | | | |
| | Barrier Cost (Barrier area x 20) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Total Barrier Cost = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Allowable Cost (length x 360) = | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Cost Reasonable = | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** |
| | **Cost Effectiveness – Category B** | | | | | | | |
| | Barrier Cost (Barrier area x 20) = | $900,800 | $857,300 | $857,800 | $821,300 | $817,800 | $761,800 | $711,800 |
| | Right-of-Way Acquisition (sq. ft. x 20) = | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | Safety Barrier (linear ft. x 125) = | $318,750 | $309,375 | $321,875 | $328,125 | $350,000 | $350,000 | $353,125 |
| | Total Barrier Cost = | $1,219,550 | $1,166,675 | $1,179,675 | $1,149,425 | $1,167,800 | $1,111,800 | $1,064,925 |
| | Allowable Cost (benefited x 30k) = | $1,200,000 | $1,170,000 | $1,140,000 | $1,110,000 | $1,050,000 | $840,000 | $810,000 |
| | Benefited (Category B w/ 5 dBA Reduction) = | 40 | 39 | 38 | 37 | 35 | 28 | 27 |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | $30,489 | $29,915 | $31,044 | $31,066 | $33,366 | $39,707 | $39,442 |
| | Cost Reasonable = | **No** | **Yes** | **No** | **No** | **No** | **No** | **No** |
| | **Is Noise Barrier 13 Feasible and Reasonable?** | **No** | **Yes** | **No** | **No** | **No** | **No** | **No** |

*Overall barrier heights, unless otherwise indicated, include a uniform barrier at the height indicated and a 10-foot-tall and 169-foot-long segment on the bridge over 1300 North.

**Safety barrier length excludes the proposed 169-foot-long barrier length on the bridge over 1300 North.

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 13**

| NAC | | | | | | | 11-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN102 | No | 1 | B | 46 | 63 | 17 | 62 | 1 | 0 |
| RN103 | No | 1 | B | 46 | 60 | 14 | 60 | 0 | 0 |
| RN104 | No | 1 | B | 46 | 59 | 13 | 59 | 0 | 0 |
| RN105 | No | 1 | B | 46 | 61 | 15 | 60 | 1 | 0 |
| RN106 | No | 1 | B | 46 | 61 | 15 | 60 | 1 | 0 |
| RN107 | No | 1 | B | 46 | 60 | 14 | 59 | 1 | 0 |
| RN108 | No | 1 | B | 46 | 60 | 14 | 59 | 1 | 0 |
| RN109 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 |
| RN110 | No | 1 | B | 46 | 58 | 12 | 56 | 2 | 0 |
| RN111 | No | 1 | B | 46 | 57 | 11 | 55 | 2 | 0 |
| RN112 | No | 1 | B | 46 | 60 | 14 | 57 | 3 | 0 |
| RN113 | Yes | 1 | B | 46 | 63 | 17 | 60 | 3 | 0 |
| RN114 | Yes | 1 | B | 46 | 62 | 16 | 59 | 3 | 0 |
| RN115 | Yes | 1 | B | 46 | 62 | 16 | 59 | 3 | 0 |
| RN116 | Yes | 1 | B | 46 | 64 | 18 | 60 | 4 | 0 |
| RN117 | Yes | 1 | B | 46 | 67 | 21 | 61 | 6 | 1 |
| RN118 | Yes | 1 | B | 46 | 67 | 21 | 61 | 6 | 1 |
| RN119 | Yes | 1 | B | 46 | 68 | 22 | 62 | 6 | 1 |
| RN120 | Yes | 1 | B | 46 | 67 | 21 | 62 | 5 | 1 |
| RN121 | Yes | 1 | B | 46 | 66 | 20 | 60 | 6 | 1 |
| RN122 | Yes | 1 | B | 46 | 68 | 22 | 63 | 5 | 1 |
| RN123 | Yes | 1 | B | 48 | 70 | 22 | 66 | 4 | 0 |
| RN124 | Yes | 1 | B | 46 | 68 | 22 | 59 | 9 | 1 |
| RN125 | No | 1 | B | 46 | 62 | 16 | 56 | 6 | 1 |
| RN126 | No | 1 | B | 46 | 63 | 17 | 57 | 6 | 1 |
| RN127 | Yes | 1 | B | 46 | 64 | 18 | 57 | 7 | 1 |
| RN128 | Yes | 1 | B | 46 | 65 | 19 | 58 | 7 | 1 |
| RN129 | Yes | 1 | B | 46 | 66 | 20 | 59 | 7 | 1 |
| RN130 | Yes | 1 | B | 46 | 66 | 20 | 60 | 6 | 1 |
| RN131 | Yes | 1 | B | 46 | 69 | 23 | 62 | 7 | 1 |
| RN132 | Yes | 1 | B | 46 | 69 | 23 | 62 | 7 | 1 |
| RN133 | Yes | 1 | B | 46 | 70 | 24 | 65 | 5 | 1 |
| RN146 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RN147 | No | 1 | B | 48 | 55 | 7 | 55 | 0 | 0 |
| RN148 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RN149 | No | 1 | D | 21 | 25 | 4 | 25 | 0 | 0 |
| RN150 | No | 1 | B | 46 | 54 | 8 | 54 | 0 | 0 |
| RN151 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RN152 | No | 1 | B | 46 | 53 | 7 | 53 | 0 | 0 |
| RN153 | No | 1 | B | 46 | 52 | 6 | 52 | 0 | 0 |
| RN154 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RN155 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |
| RN156 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |
| RN157 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RN158 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RN159 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |
| RN160 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RN161 | No | 1 | B | 46 | 51 | 5 | 51 | 0 | 0 |
| RN162 | No | 1 | B | 46 | 49 | 3 | 49 | 0 | 0 |
| RN163 | No | 1 | B | 46 | 46 | 0 | 46 | 0 | 0 |
| RN164 | No | 1 | B | 48 | 49 | 1 | 49 | 0 | 0 |
| RN165 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 |
| RN166 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RN167 | No | 1 | B | 46 | 47 | 1 | 45 | 2 | 0 |
| RN168 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RN169 | No | 1 | B | 46 | 46 | 0 | 44 | 2 | 0 |
| RN170 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RN171 | No | 1 | B | 49 | 50 | 1 | 50 | 0 | 0 |
| RN172 | No | 1 | B | 52 | 53 | 1 | 53 | 0 | 0 |
| RN173 | No | 1 | B | 46 | 51 | 5 | 50 | 1 | 0 |
| RN174 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RN175 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RN176 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 |
| RN177 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RN178 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 |
| RN179 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 13**

| NAC | | | | | | | 11-Foot Barrier | | |
|---|---|---|---|---|---|---|---|---|---|
| Receiver | Front Row | Receptors Represented | Land Use Category | Existing dBA | Future dBA | Increase dBA | W/Barrier dBA | Reduction dBA | Benefited Receptors |
| RN180 | No | 1 | B | 47 | 50 | 3 | 50 | 0 | 0 |
| RN181 | No | 1 | B | 46 | 55 | 9 | 53 | 2 | 0 |
| RN182 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RN183 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 |
| RN184 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RN185 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RN186 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RN187 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RN188 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RN189 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RN190 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RN191 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RN192 | No | 1 | B | 46 | 50 | 4 | 50 | 0 | 0 |
| RN193 | No | 1 | B | 46 | 54 | 8 | 50 | 4 | 0 |
| RN194 | No | 1 | B | 46 | 47 | 1 | 47 | 0 | 0 |
| RN195 | No | 1 | B | 46 | 47 | 1 | 46 | 1 | 0 |
| RN196 | No | 1 | B | 46 | 51 | 5 | 49 | 2 | 0 |
| RN197 | No | 1 | B | 46 | 50 | 4 | 48 | 2 | 0 |
| RN198 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RN199 | No | 1 | B | 46 | 58 | 12 | 54 | 4 | 0 |
| RN200 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 |
| RN201 | No | 1 | B | 46 | 49 | 3 | 47 | 2 | 0 |
| RN202 | No | 1 | B | 46 | 49 | 3 | 48 | 1 | 0 |
| RN203 | No | 1 | B | 46 | 58 | 12 | 53 | 5 | 1 |
| RN204 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 |
| RN205 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 |
| RN206 | No | 1 | B | 46 | 48 | 2 | 46 | 2 | 0 |
| RN207 | No | 1 | B | 46 | 52 | 6 | 49 | 3 | 0 |
| RN208 | No | 1 | B | 46 | 51 | 5 | 48 | 3 | 0 |
| RN209 | No | 1 | B | 46 | 51 | 5 | 49 | 2 | 0 |
| RN210 | No | 1 | B | 46 | 52 | 6 | 50 | 2 | 0 |
| RN211 | No | 1 | B | 51 | 64 | 13 | 60 | 4 | 0 |
| RN212 | No | 1 | B | 51 | 63 | 12 | 59 | 4 | 0 |
| RN213 | No | 1 | B | 51 | 61 | 10 | 57 | 4 | 0 |
| RN214 | No | 1 | B | 51 | 59 | 8 | 56 | 3 | 0 |
| RN215 | No | 1 | B | 46 | 56 | 10 | 52 | 4 | 0 |
| RN216 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RN217 | No | 1 | B | 46 | 48 | 2 | 47 | 1 | 0 |
| RN218 | No | 1 | B | 46 | 46 | 0 | 45 | 1 | 0 |
| RN219 | No | 1 | B | 46 | 50 | 4 | 47 | 3 | 0 |
| RN220 | No | 1 | B | 46 | 57 | 11 | 52 | 5 | 1 |
| RN221 | No | 1 | B | 46 | 54 | 8 | 51 | 3 | 0 |
| RN222 | No | 1 | B | 46 | 56 | 10 | 52 | 4 | 0 |
| RN223 | No | 1 | B | 46 | 57 | 11 | 52 | 5 | 1 |
| RN224 | No | 1 | B | 46 | 49 | 3 | 49 | 0 | 0 |
| RN225 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RN226 | No | 1 | B | 46 | 50 | 4 | 49 | 1 | 0 |
| RN227 | No | 1 | B | 46 | 49 | 3 | 49 | 0 | 0 |
| RN228 | No | 1 | B | 46 | 59 | 13 | 54 | 5 | 1 |
| RN229 | No | 1 | B | 46 | 60 | 14 | 55 | 5 | 1 |
| RN230 | No | 1 | B | 46 | 53 | 7 | 50 | 3 | 0 |
| RN231 | No | 1 | B | 46 | 54 | 8 | 53 | 1 | 0 |
| RN232 | No | 1 | B | 46 | 60 | 14 | 56 | 4 | 0 |
| RN233 | No | 1 | B | 46 | 55 | 9 | 52 | 3 | 0 |
| RN234 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 |
| RN235 | No | 1 | B | 46 | 61 | 15 | 58 | 3 | 0 |
| RN236 | No | 1 | B | 46 | 56 | 10 | 53 | 3 | 0 |
| RN237 | No | 1 | B | 46 | 54 | 8 | 52 | 2 | 0 |
| RN238 | No | 1 | B | 46 | 62 | 16 | 59 | 3 | 0 |
| RN239 | No | 1 | B | 46 | 56 | 10 | 54 | 2 | 0 |
| RN240 | No | 1 | B | 46 | 55 | 9 | 55 | 0 | 0 |
| RN241 | No | 1 | B | 46 | 62 | 16 | 59 | 3 | 0 |
| RN242 | No | 1 | B | 46 | 57 | 11 | 57 | 0 | 0 |
| RN243 | No | 1 | B | 46 | 64 | 18 | 62 | 2 | 0 |
| RN244 | No | 1 | B | 46 | 61 | 15 | 60 | 1 | 0 |

= Impacted receptor
= 5 dBA reduction or better
= 7 dBA reduction or better

**SR-177; SR-193 to 1800 N Noise Abatement Analysis**
**Noise Barrier 13**

| NAC | 11-Foot Barrier |
|---|---|

| | | |
|---|---|---|
| | **Inputs – Overall** | |
| | Barrier Length (ft.) = | 2,994 |
| | *Barrier Height (ft.) = | 10 & 11 |
| | Barrier Area (sq. ft.) = | 32,765 |
| | **Inputs – Category A, C, D, or E** | |
| | Barrier Height (ft.) = | n/a |
| | Barrier Length (ft.) = | n/a |
| | Barrier Area (ft.) = | n/a |
| | Right-of-Way Acquisition Area (sq. ft.) = | n/a |
| | Safety Barrier (linear ft.) = | n/a |
| | **Inputs – Category B** | |
| | Barrier Height (ft.) = | 10 & 11 |
| | Barrier Length (ft.) = | 2,994 |
| | Barrier Area (sq. ft.) = | 32,765 |
| | Right-of-Way Acquisition Area (sq. ft.) = | 0 |
| | **Safety Barrier (linear ft.) = | 2,825 |
| **Feasibility** | **Acoustic Feasibility** | |
| | Front Row Receptors = | 19 |
| | Front-Row Receptors with a 5 dBA Reduction = | 14 |
| | % of Front-Row Receptors Reduced At Least 5 dBA = | 74% |
| | Acoustically Feasible = | **Yes** |
| **Reasonableness** | **Noise Reduction Design Goal** | |
| | Front Row Receptors = | 19 |
| | Front Row Receptors with 7 dBA Reduction = | 6 |
| | % of Front Row Reduced At Least 7 dBA = | 32% |
| | Meets Noise Reduction Design Goal = | **No** |
| | **Cost Effectiveness – Category A, C, D, or E** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (length x 360) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Cost Effectiveness – Category B** | |
| | Barrier Cost (Barrier area x 20) = | n/a |
| | Right-of-Way Acquisition (sq. ft. x 20) = | n/a |
| | Safety Barrier (linear ft. x 125) = | n/a |
| | Total Barrier Cost = | n/a |
| | Allowable Cost (benefited x 30k) = | n/a |
| | Benefited (Category B w/ 5 dBA Reduction) = | n/a |
| | Cost per Benefited Receptor (Barrier cost / benefited) = | n/a |
| | Cost Reasonable = | **n/a** |
| | **Is Noise Barrier 13 Feasible and Reasonable?** | **No** |

*Overall barrier heights, unless otherwise indicated, include a uniform barrier at the height indicated and a 10-foot-tall and 169-foot-long segment on the bridge over 1300 North.

**Safety barrier length excludes the proposed 169-foot-long barrier length on the bridge over 1300 North.

# APPENDIX A: TRAFFIC VOLUMES AND VEHICLE MIX

# MEMORANDUM

| | |
|---|---|
| To: | UDOT Region Two and Environmental |
| From: | Avenue Consultants |
| Date: | September 5, 2024 |
| Subject: | SR-177; SR-193 to 1800 North Preconstruction Re-evaluation<br>Traffic Volumes and Vehicle Mix Data for the Traffic Noise Study |
| | Project No.: S-R199(381) PIN: 20927 |

The purpose of this memorandum is to document the development of traffic volume data used for the traffic noise study.

## 1 EXISTING TRAFFIC VOLUMES

The Utah Department of Transportation (UDOT) *Noise Abatement Policy 08A2-01* directs calculating existing (2024) traffic-generated noise levels using existing traffic volumes, meaning the worst hourly traffic volumes.

Traffic analysis and field observations indicate that the afternoon/evening (PM) peak hour represents the worst traffic performance of the day in the existing condition. Therefore, we recommend using the PM peak hour traffic volumes for the existing condition in the traffic noise study.

**Table 1** shows the existing, worst hourly traffic volumes.

## 2 FUTURE TRAFFIC VOLUMES

The UDOT *Noise Abatement Policy 08A2-01* directs calculating future (2050) worst-case traffic-generated noise levels using future traffic volumes, meaning using Level of Service (LOS) C traffic volumes and the Proposed Action's design speed.

We estimated generalized hourly LOS C traffic volumes by determining a percentage of the hourly roadway capacity. The *Wasatch Front Travel Demand Model* (WF-TDM) provided the roadway capacity data used in developing future traffic volumes. We extracted hourly capacities specific to the roadway segments intended for the traffic noise study, and these capacities are determined based on the roadway's functional type and the number of lanes.

To convert the roadway capacity to LOS C volume, we reviewed the *Highway Capacity Manual* (HCM) and conducted tests using the *Highway Capacity Software* (HCS) to establish a factor for the conversion. The HCM review indicated a LOS C range of 71 to 80 percent of the roadway capacity for arterial roadways. Additionally, the HCS analysis, focusing on a sample freeway segment, demonstrated a LOS C range from 57 to 75 percent of the roadway capacity. Combining insights from these methodologies, we used a LOS C value of 75 percent of capacity for traffic volumes.

**Table 1** shows the future, LOS C traffic volumes.

**Table 1:** Existing (2024) and Future (2050) Condition Traffic Volumes

| Roadway | Direction | Existing Volume (Per Lane) | Future Volume (Per Lane) |
|---|---|---|---|
| SR-177 Mainline | NB | n/a | 1,300 |
| | SB | n/a | 1,300 |
| SR-177 On-Ramps | NB | n/a | 900 |
| | SB | n/a | 900 |
| SR-177 Off-Ramps | NB | n/a | 670 |
| | SB | n/a | 670 |
| SR-193 East of SR-177 | EB | 249 | n/a |
| | WB | 175 | n/a |
| SR-193 West of SR-177 | EB | 400 | n/a |
| | WB | 300 | n/a |
| 4500 West | NB | 517 | n/a |
| | SB | 324 | n/a |
| 4000 West | NB | 118 | n/a |
| | SB | 88 | n/a |
| 3000 West | NB | 182 | n/a |
| | SB | 143 | n/a |
| 1800 North | EB | 171 | n/a |
| | WB | 207 | n/a |
| 1300 North | EB | 49 | n/a |
| | WB | 50 | n/a |
| 800 North | EB | 61 | n/a |
| | WB | 53 | n/a |
| 300 North | EB | 295 | n/a |
| | WB | 218 | n/a |
| 700 South | EB | 110 | n/a |
| | WB | 202 | n/a |

## 3 VEHICLE MIX

The vehicle mix was estimated, representing the percentage distribution of automobiles, medium trucks, and heavy trucks, by relying on data obtained from collected traffic counts, UDOT's published traffic data, and the WF-TDM for future projections.

**Table 2** shows the vehicle mix used for both the existing and future traffic volumes.

**Table 2:** Vehicle Mix

| Roadway | Direction | Vehicle Type | | |
|---|---|---|---|---|
| | | Automobile (Percent) | Medium Truck (Percent) | Heavy Truck (Percent) |
| SR-177 Mainline | NB | 84% | 15% | 1% |
| | SB | 84% | 15% | 1% |
| SR-177 On-Ramps | NB | 84% | 15% | 1% |
| | SB | 84% | 15% | 1% |
| SR-177 Off-Ramps | NB | 84% | 15% | 1% |
| | SB | 84% | 15% | 1% |
| SR-193 East of SR-177 | EB | 84% | 14% | 2% |
| | WB | 84% | 14% | 2% |
| SR-193 West of SR-177 | EB | 84% | 14% | 2% |
| | WB | 84% | 14% | 2% |
| 4500 West | NB | 84% | 14% | 2% |
| | SB | 84% | 14% | 2% |
| 4000 West | NB | 85% | 13% | 2% |
| | SB | 85% | 13% | 2% |
| 3000 West | NB | 89% | 10% | 1% |
| | SB | 89% | 10% | 1% |
| 1800 North | EB | 80% | 18% | 2% |
| | WB | 80% | 18% | 2% |
| 1300 North | EB | 89% | 10% | 2% |
| | WB | 89% | 10% | 2% |
| 800 North | EB | 74% | 24% | 2% |
| | WB | 74% | 24% | 2% |
| 300 North | EB | 79% | 19% | 2% |
| | WB | 79% | 19% | 2% |
| 700 South | EB | 84% | 14% | 2% |
| | WB | 84% | 14% | 2% |

# APPENDIX B: METER CERTIFICATIONS

# Calibration Certificate

***Certificate Number 2024005505***

***Customer:***

**Avenue Consultants**

,

| | | | | | | |
|---|---|---|---|---|---|---|
| ***Model Number*** | LxT1 | ***Procedure Number*** | D0001.8378 | | |
| ***Serial Number*** | 0006299 | ***Technician*** | Jacob Cannon | | |
| ***Test Results*** | **Pass** | ***Calibration Date*** | 11 Apr 2024 | | |
| ***Initial Condition*** | AS RECEIVED same as shipped | ***Calibration Due*** | 11 Apr 2025 | | |
| ***Description*** | SoundTrack LxT Class 1<br>Class 1 Sound Level Meter<br>Firmware Revision: 2.404 | ***Temperature*** | 23.3 | °C | ± 0.25 °C |
| | | ***Humidity*** | 53.8 | %RH | ± 2.0 %RH |
| | | ***Static Pressure*** | 86.5 | kPa | ± 0.13 kPa |

***Evaluation Method*** Tested electrically using Larson Davis PRMLxT1 S/N 071360 and a 12.0 pF capacitor to simulate microphone capacitance. Data reported in dB re 20 µPa assuming a microphone sensitivity of 50.0 mV/Pa.

***Compliance Standards*** Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8384:

| | |
|---|---|
| IEC 60651:2001 Type 1 | ANSI S1.4-2014 Class 1 |
| IEC 60804:2000 Type 1 | ANSI S1.4 (R2006) Type 1 |
| IEC 61252:2002 | ANSI S1.25 (R2007) |
| IEC 61672:2013 Class 1 | ANSI S1.43 (R2007) Type 1 |

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017. **Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Correction data from Larson Davis LxT Manual for SoundTrack LxT & SoundExpert Lxt, I770.01 Rev O Supporting Firmware Version 4.0.5, 2019-09-10

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part3.

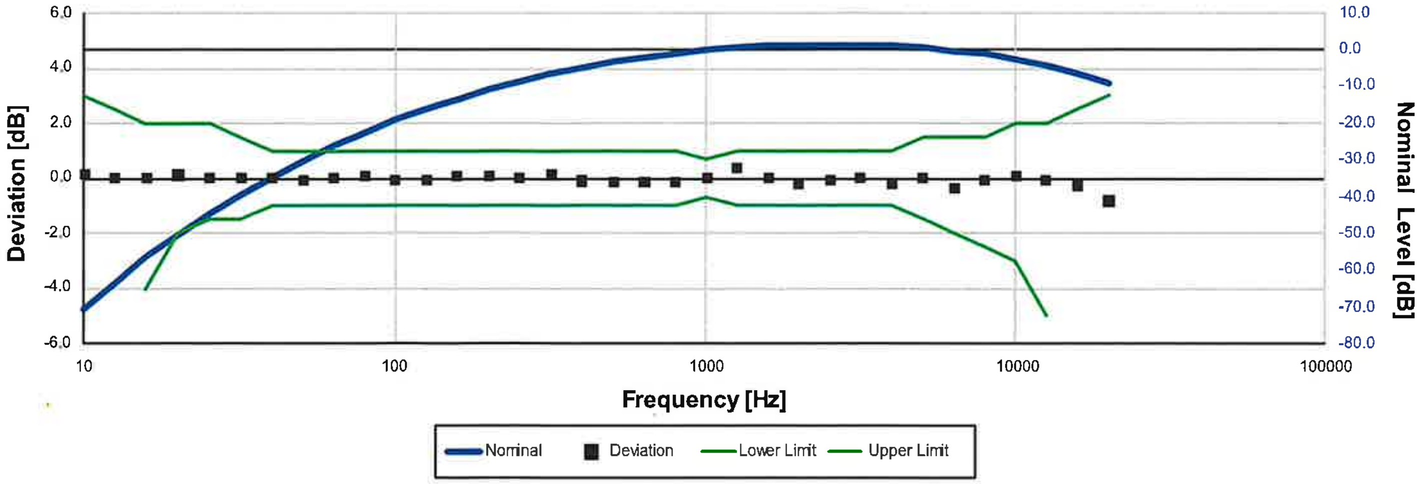
Pattern approval for IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 successfully completed by Physikalisch-Technische Bundesanstalt (PTB) on 2007-10-09 reference number PTB-1.72-4034218.

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part 3, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organization responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013 / ANSI/ASA S1.4-2014/Part 2, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1; the sound level meter submitted for testing conforms to the class 1specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1.

**Standards Used**

| Description | Cal Date | Cal Due | Cal Standard |
|---|---|---|---|
| Hart Scientific 2626-S Humidity/Temperature Sensor | 2023-02-20 | 2024-08-20 | 006946 |
| SRS DS360 Ultra Low Distortion Generator | 2024-03-26 | 2025-03-26 | 007635 |

## A-weight Filter Response

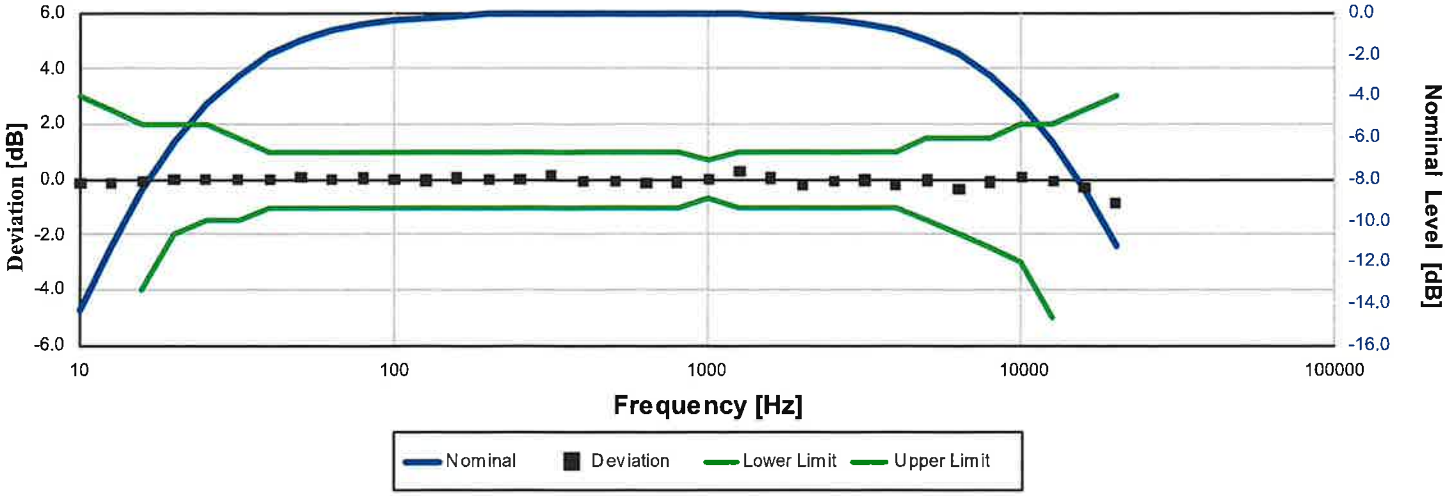



Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

| Frequency [Hz] | Test Result [dB] | Deviation [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 10.00 | -70.28 | 0.12 | -inf | 3.00 | 0.25 | Pass |
| 12.59 | -63.39 | 0.01 | -inf | 2.50 | 0.25 | Pass |
| 15.85 | -56.68 | 0.02 | -4.00 | 2.00 | 0.25 | Pass |
| 19.95 | -50.39 | 0.11 | -2.00 | 2.00 | 0.25 | Pass |
| 25.12 | -44.67 | 0.03 | -1.50 | 2.00 | 0.25 | Pass |
| 31.62 | -39.38 | 0.02 | -1.50 | 1.50 | 0.25 | Pass |
| 39.81 | -34.60 | 0.00 | -1.00 | 1.00 | 0.25 | Pass |
| 50.12 | -30.24 | -0.04 | -1.00 | 1.00 | 0.25 | Pass |
| 63.10 | -26.18 | 0.02 | -1.00 | 1.00 | 0.25 | Pass |
| 79.43 | -22.45 | 0.05 | -1.00 | 1.00 | 0.25 | Pass |
| 100.00 | -19.14 | -0.04 | -1.00 | 1.00 | 0.25 | Pass |
| 125.89 | -16.14 | -0.04 | -1.00 | 1.00 | 0.25 | Pass |
| 158.49 | -13.31 | 0.09 | -1.00 | 1.00 | 0.25 | Pass |
| 199.53 | -10.85 | 0.05 | -1.00 | 1.00 | 0.25 | Pass |
| 251.19 | -8.60 | 0.01 | -1.00 | 1.00 | 0.25 | Pass |
| 316.23 | -6.47 | 0.13 | -1.00 | 1.00 | 0.25 | Pass |
| 398.11 | -4.91 | -0.10 | -1.00 | 1.00 | 0.25 | Pass |
| 501.19 | -3.34 | -0.14 | -1.00 | 1.00 | 0.25 | Pass |
| 630.96 | -2.05 | -0.15 | -1.00 | 1.00 | 0.25 | Pass |
| 794.33 | -0.94 | -0.14 | -1.00 | 1.00 | 0.25 | Pass |
| 1,000.00 | 0.00 | 0.00 | -0.70 | 0.70 | 0.25 | Pass |
| 1,258.93 | 0.95 | 0.35 | -1.00 | 1.00 | 0.25 | Pass |
| 1,584.89 | 1.02 | 0.02 | -1.00 | 1.00 | 0.25 | Pass |
| 1,995.26 | 0.97 | -0.23 | -1.00 | 1.00 | 0.25 | Pass |
| 2,511.89 | 1.23 | -0.07 | -1.00 | 1.00 | 0.25 | Pass |
| 3,162.28 | 1.19 | -0.01 | -1.00 | 1.00 | 0.25 | Pass |
| 3,981.07 | 0.81 | -0.19 | -1.00 | 1.00 | 0.25 | Pass |
| 5,011.87 | 0.52 | 0.02 | -1.50 | 1.50 | 0.25 | Pass |
| 6,309.57 | -0.48 | -0.38 | -2.00 | 1.50 | 0.25 | Pass |
| 7,943.28 | -1.20 | -0.10 | -2.50 | 1.50 | 0.25 | Pass |
| 10,000.00 | -2.40 | 0.10 | -3.00 | 2.00 | 0.25 | Pass |
| 12,589.25 | -4.36 | -0.06 | -5.00 | 2.00 | 0.25 | Pass |
| 15,848.93 | -6.85 | -0.25 | -16.00 | 2.50 | 0.25 | Pass |
| 19,952.62 | -10.13 | -0.83 | -inf | 3.00 | 0.25 | Pass |

**-- End of measurement results--**

## C-weight Filter Response

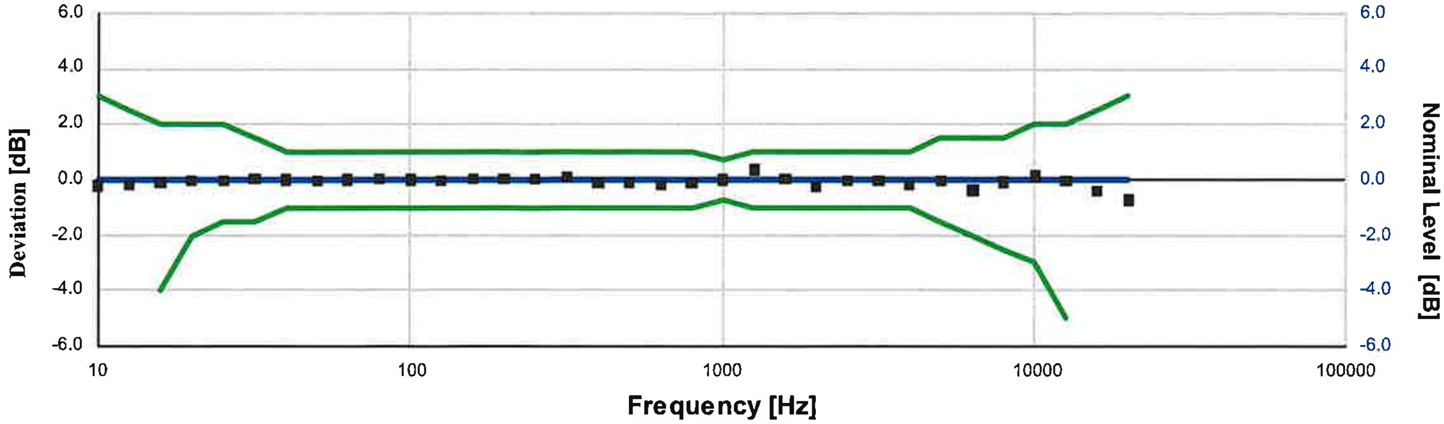



Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

| Frequency [Hz] | Test Result [dB] | Deviation [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 10.00 | -14.43 | -0.13 | -inf | 3.00 | 0.25 | Pass |
| 12.59 | -11.33 | -0.13 | -inf | 2.50 | 0.25 | Pass |
| 15.85 | -8.54 | -0.04 | -4.00 | 2.00 | 0.25 | Pass |
| 19.95 | -6.18 | 0.02 | -2.00 | 2.00 | 0.25 | Pass |
| 25.12 | -4.37 | 0.03 | -1.50 | 2.00 | 0.25 | Pass |
| 31.62 | -2.96 | 0.04 | -1.50 | 1.50 | 0.25 | Pass |
| 39.81 | -1.97 | 0.03 | -1.00 | 1.00 | 0.25 | Pass |
| 50.12 | -1.22 | 0.09 | -1.00 | 1.00 | 0.25 | Pass |
| 63.10 | -0.80 | 0.00 | -1.00 | 1.00 | 0.25 | Pass |
| 79.43 | -0.45 | 0.05 | -1.00 | 1.00 | 0.25 | Pass |
| 100.00 | -0.28 | 0.02 | -1.00 | 1.00 | 0.25 | Pass |
| 125.89 | -0.22 | -0.02 | -1.00 | 1.00 | 0.25 | Pass |
| 158.49 | -0.05 | 0.05 | -1.00 | 1.00 | 0.25 | Pass |
| 199.53 | -0.01 | -0.01 | -1.00 | 1.00 | 0.25 | Pass |
| 251.19 | 0.03 | 0.03 | -1.00 | 1.00 | 0.25 | Pass |
| 316.23 | 0.15 | 0.15 | -1.00 | 1.00 | 0.25 | Pass |
| 398.11 | -0.07 | -0.07 | -1.00 | 1.00 | 0.25 | Pass |
| 501.19 | -0.08 | -0.08 | -1.00 | 1.00 | 0.25 | Pass |
| 630.96 | -0.13 | -0.12 | -1.00 | 1.00 | 0.25 | Pass |
| 794.33 | -0.10 | -0.10 | -1.00 | 1.00 | 0.25 | Pass |
| 1,000.00 | 0.00 | 0.00 | -0.70 | 0.70 | 0.25 | Pass |
| 1,258.93 | 0.32 | 0.32 | -1.00 | 1.00 | 0.25 | Pass |
| 1,584.89 | -0.05 | 0.05 | -1.00 | 1.00 | 0.25 | Pass |
| 1,995.26 | -0.41 | -0.20 | -1.00 | 1.00 | 0.25 | Pass |
| 2,511.89 | -0.34 | -0.04 | -1.00 | 1.00 | 0.25 | Pass |
| 3,162.28 | -0.51 | -0.01 | -1.00 | 1.00 | 0.25 | Pass |
| 3,981.07 | -0.99 | -0.19 | -1.00 | 1.00 | 0.25 | Pass |
| 5,011.87 | -1.33 | -0.03 | -1.50 | 1.50 | 0.25 | Pass |
| 6,309.57 | -2.36 | -0.36 | -2.00 | 1.50 | 0.25 | Pass |
| 7,943.28 | -3.10 | -0.10 | -2.50 | 1.50 | 0.25 | Pass |
| 10,000.00 | -4.32 | 0.08 | -3.00 | 2.00 | 0.25 | Pass |
| 12,589.25 | -6.28 | -0.08 | -5.00 | 2.00 | 0.25 | Pass |
| 15,848.93 | -8.78 | -0.28 | -16.00 | 2.50 | 0.25 | Pass |
| 19,952.62 | -12.06 | -0.86 | -inf | 3.00 | 0.25 | Pass |

**-- End of measurement results--**

## Z-weight Filter Response




Electrical signal test of frequency weighting performed according to IEC 61672-3:2013 13 and ANSI S1.4-2014 Part 3: 13 for compliance to IEC 61672-1:2013 5.5; IEC 60651:2001 6.1 and 9.2.2; IEC 60804:2000 5; ANSI S1.4:1983 (R2006) 5.1 and 8.2.1; ANSI S1.4-2014 Part 1: 5.5

| Frequency [Hz] | Test Result [dB] | Deviation [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 10.00 | -0.23 | -0.23 | -inf | 3.00 | 0.25 | Pass |
| 12.59 | -0.19 | -0.19 | -inf | 2.50 | 0.25 | Pass |
| 15.85 | -0.11 | -0.11 | -4.00 | 2.00 | 0.25 | Pass |
| 19.95 | -0.03 | -0.03 | -2.00 | 2.00 | 0.25 | Pass |
| 25.12 | -0.03 | -0.03 | -1.50 | 2.00 | 0.25 | Pass |
| 31.62 | 0.01 | 0.01 | -1.50 | 1.50 | 0.25 | Pass |
| 39.81 | -0.01 | -0.01 | -1.00 | 1.00 | 0.25 | Pass |
| 50.12 | -0.06 | -0.06 | -1.00 | 1.00 | 0.25 | Pass |
| 63.10 | 0.00 | 0.00 | -1.00 | 1.00 | 0.25 | Pass |
| 79.43 | 0.04 | 0.03 | -1.00 | 1.00 | 0.25 | Pass |
| 100.00 | -0.01 | -0.01 | -1.00 | 1.00 | 0.25 | Pass |
| 125.89 | -0.06 | -0.06 | -1.00 | 1.00 | 0.25 | Pass |
| 158.49 | 0.02 | 0.02 | -1.00 | 1.00 | 0.25 | Pass |
| 199.53 | 0.01 | 0.01 | -1.00 | 1.00 | 0.25 | Pass |
| 251.19 | 0.01 | 0.01 | -1.00 | 1.00 | 0.25 | Pass |
| 316.23 | 0.13 | 0.13 | -1.00 | 1.00 | 0.25 | Pass |
| 398.11 | -0.11 | -0.11 | -1.00 | 1.00 | 0.25 | Pass |
| 501.19 | -0.12 | -0.12 | -1.00 | 1.00 | 0.25 | Pass |
| 630.96 | -0.16 | -0.16 | -1.00 | 1.00 | 0.25 | Pass |
| 794.33 | -0.13 | -0.13 | -1.00 | 1.00 | 0.25 | Pass |
| 1,000.00 | 0.00 | 0.00 | -0.70 | 0.70 | 0.25 | Pass |
| 1,258.93 | 0.35 | 0.35 | -1.00 | 1.00 | 0.25 | Pass |
| 1,584.89 | 0.03 | 0.03 | -1.00 | 1.00 | 0.25 | Pass |
| 1,995.26 | -0.25 | -0.25 | -1.00 | 1.00 | 0.25 | Pass |
| 2,511.89 | -0.06 | -0.06 | -1.00 | 1.00 | 0.25 | Pass |
| 3,162.28 | -0.03 | -0.03 | -1.00 | 1.00 | 0.25 | Pass |
| 3,981.07 | -0.19 | -0.19 | -1.00 | 1.00 | 0.25 | Pass |
| 5,011.87 | -0.06 | -0.06 | -1.50 | 1.50 | 0.25 | Pass |
| 6,309.57 | -0.37 | -0.37 | -2.00 | 1.50 | 0.25 | Pass |
| 7,943.28 | -0.07 | -0.07 | -2.50 | 1.50 | 0.25 | Pass |
| 10,000.00 | 0.14 | 0.14 | -3.00 | 2.00 | 0.25 | Pass |
| 12,589.25 | -0.05 | -0.04 | -5.00 | 2.00 | 0.25 | Pass |
| 15,848.93 | -0.39 | -0.39 | -16.00 | 2.50 | 0.25 | Pass |
| 19,952.62 | -0.73 | -0.73 | -inf | 3.00 | 0.25 | Pass |

**-- End of measurement results--**

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716-684-0001

ACCREDITED CERT #3622.01

LARSON DAVIS A PCB DIVISION

## High Level Stability

Electrical signal test of high level stability performed according to IEC 61672-3:2013 21 and ANSI S1.4-2014 Part 3: 21 for compliance to IEC 61672-1:2013 5.15 and ANSI S1.4-2014 Part 1: 5.15

| Measurement | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| High Level Stability | 0.01 | -0.10 | 0.10 | 0.00 ‡ | Pass |

**-- End of measurement results--**

## Long-Term Stability

Electrical signal test of long term stability performed according to IEC 61672-3:2013 15 and ANSI S1.4-2014 Part 3: 15 for compliance to ISC 61672-1:2013 5.14 and ANSI S1.4-2014 Part 1: 5.14

| Test Duration [min] | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| 33 | 0.07 | -0.10 | 0.10 | 0.01 ‡ | Pass |

**-- End of measurement results--**

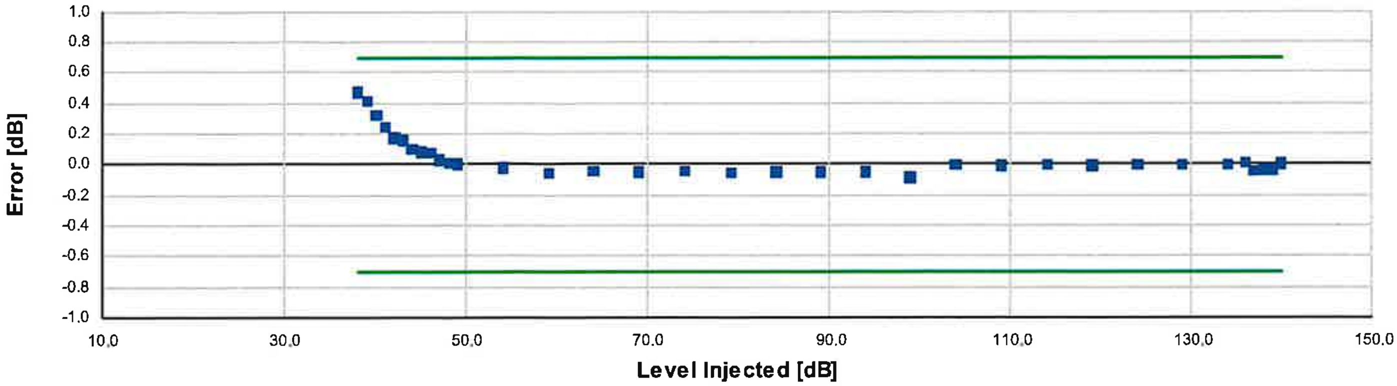
## 1 kHz Reference Levels

Frequency weightings and time weightings at 1 kHz (reference is A weighted Fast) performed according to IEC 61672-3:2013 14 and ANSI S1.4-2014 Part 3: 14 for compliance to IEC 61672-1:2013 5.5.9 and 5.8.3 and ANSI S1.4-2014 Part 1: 5.5.9 and 5.8.3

| Measurement | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| C weight | 115.20 | 115.00 | 115.40 | 0.15 | Pass |
| Z weight | 115.20 | 115.00 | 115.40 | 0.15 | Pass |
| Slow | 115.20 | 115.10 | 115.30 | 0.15 | Pass |
| Impulse | 115.20 | 115.10 | 115.30 | 0.15 | Pass |

**-- End of measurement results--**

# A-weighted Broadband Log Linearity: 8,000.00 Hz




Broadband level linearity performed according to IEC 61672-3:2013 16 and ANSI S1.4-2014 Part 3: 16 for compliance to IEC 61672-1:2013 5.6, IEC 60804:2000 6.2, IEC 61252:2002 8, ANSI S1.4 (R2006) 6.9, ANSI S1.4-2014 Part 1: 5.6, ANSI S1.43 (R2007) 6.2

| Level [dB] | Error [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| 38.00 | 0.48 | -0.70 | 0.70 | 0.16 | Pass |
| 39.00 | 0.41 | -0.70 | 0.70 | 0.16 | Pass |
| 40.00 | 0.32 | -0.70 | 0.70 | 0.16 | Pass |
| 41.00 | 0.25 | -0.70 | 0.70 | 0.16 | Pass |
| 42.00 | 0.18 | -0.70 | 0.70 | 0.16 | Pass |
| 43.00 | 0.16 | -0.70 | 0.70 | 0.16 | Pass |
| 44.00 | 0.11 | -0.70 | 0.70 | 0.17 | Pass |
| 45.00 | 0.09 | -0.70 | 0.70 | 0.16 | Pass |
| 46.00 | 0.08 | -0.70 | 0.70 | 0.16 | Pass |
| 47.00 | 0.03 | -0.70 | 0.70 | 0.16 | Pass |
| 48.00 | 0.01 | -0.70 | 0.70 | 0.16 | Pass |
| 49.00 | 0.00 | -0.70 | 0.70 | 0.16 | Pass |
| 54.00 | -0.02 | -0.70 | 0.70 | 0.16 | Pass |
| 59.00 | -0.06 | -0.70 | 0.70 | 0.16 | Pass |
| 64.00 | -0.04 | -0.70 | 0.70 | 0.16 | Pass |
| 69.00 | -0.05 | -0.70 | 0.70 | 0.16 | Pass |
| 74.00 | -0.04 | -0.70 | 0.70 | 0.16 | Pass |
| 79.00 | -0.05 | -0.70 | 0.70 | 0.16 | Pass |
| 84.00 | -0.05 | -0.70 | 0.70 | 0.16 | Pass |
| 89.00 | -0.05 | -0.70 | 0.70 | 0.16 | Pass |
| 94.00 | -0.05 | -0.70 | 0.70 | 0.16 | Pass |
| 99.00 | -0.08 | -0.70 | 0.70 | 0.15 | Pass |
| 104.00 | 0.00 | -0.70 | 0.70 | 0.15 | Pass |
| 109.00 | -0.01 | -0.70 | 0.70 | 0.15 | Pass |
| 114.00 | 0.00 | -0.70 | 0.70 | 0.15 | Pass |
| 119.00 | -0.01 | -0.70 | 0.70 | 0.15 | Pass |
| 124.00 | 0.00 | -0.70 | 0.70 | 0.15 | Pass |
| 129.00 | 0.00 | -0.70 | 0.70 | 0.15 | Pass |
| 134.00 | 0.00 | -0.70 | 0.70 | 0.15 | Pass |
| 136.00 | 0.01 | -0.70 | 0.70 | 0.15 | Pass |
| 137.00 | -0.04 | -0.70 | 0.70 | 0.15 | Pass |
| 138.00 | -0.04 | -0.70 | 0.70 | 0.15 | Pass |
| 139.00 | -0.04 | -0.70 | 0.70 | 0.15 | Pass |
| 140.00 | 0.01 | -0.70 | 0.70 | 0.15 | Pass |

**-- End of measurement results--**

## Slow Detector

Toneburst response performed according to IEC 61672-3:2013 18 and ANSI S1.4-2014 Part 3: 18 for compliance to IEC 61672-1:2013 5.9, IEC 60651:2001 9.4.2, ANSI S1.4:1983 (R2006) 8.4.2 and ANSI S1.4-2014 Part 1: 5.9

| Amplitude [dB] | Duration [ms] | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 137.00 | 200 | -7.55 | -7.92 | -6.92 | 0.15 | Pass |
| | 2 | -27.14 | -29.99 | -25.99 | 0.15 | Pass |

-- End of measurement results--

## Fast Detector

Toneburst response performed according to IEC 61672-3:2013 18 and ANSI S1.4-2014 Part 3: 18 for compliance to IEC 61672-1:2013 5.9, IEC 60651:2001 9.4.2, ANSI S1.4:1983 (R2006) 8.4.2 and ANSI S1.4-2014 Part 1: 5.9

| Amplitude [dB] | Duration [ms] | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 137.00 | 200.00 | -1.06 | -1.48 | -0.48 | 0.26 | Pass |
| | 2.00 | -18.19 | -19.49 | -16.99 | 0.15 | Pass |
| | 0.25 | -27.30 | -29.99 | -25.99 | 0.15 | Pass |

-- End of measurement results--

## Sound Exposure Level

Toneburst response performed according to IEC 61672-3:2013 18 and ANSI S1.4-2014 Part 3: 18 for compliance to IEC 61672-1:2013 5.9, IEC 60651:2001 9.4.2, ANSI S1.4:1983 (R2006) 8.4.2 and ANSI S1.4-2014 Part 1: 5.9

| Amplitude [dB] | Duration [ms] | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 137.00 | 200.00 | -7.01 | -7.49 | -6.49 | 0.15 | Pass |
| | 2.00 | -27.03 | -28.49 | -25.99 | 0.15 | Pass |
| | 0.25 | -36.14 | -39.02 | -35.02 | 0.15 | Pass |

-- End of measurement results--

## Peak C-weight

C-weighted peak sound level performed according to IEC 61672-3:2013 19 and ANSI S1.4-2014 Part 3: 19 for compliance to IEC 61672-1:2013 5.13 and ANSI S1.4-2014 Part 1: 5.13

| Level [dB] | Frequency [Hz] | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 135.00 | 31.50 | 138.21 | 135.50 | 139.50 | 0.15 | Pass |
| 135.00 | 500.00 | 138.58 | 137.50 | 139.50 | 0.15 | Pass |
| 135.00 | 8,000.00 | 137.77 | 136.40 | 140.40 | 0.15 | Pass |
| 135.00, Negative | 500.00 | 137.18 | 136.40 | 138.40 | 0.15 | Pass |
| 135.00, Positive | 500.00 | 137.15 | 136.40 | 138.40 | 0.15 | Pass |

-- End of measurement results--

## Peak Z-weight

Z-weighted peak sound level performed according to IEC 60651:2001 9.4.4 and ANSI S1.4:1983 (R2006) 8.4.4

| Amplitude [dB] | Duration[µs] | | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|---|
| 134.85 | 100 | Negative Pulse | 135.43 | 133.08 | 137.08 | 0.15 | Pass |
| | 100 | Positive Pulse | 135.41 | 133.07 | 137.07 | 0.15 | Pass |
| 124.85 | 100 | Negative Pulse | 126.32 | 123.98 | 127.98 | 0.15 | Pass |
| | 100 | Positive Pulse | 126.31 | 123.98 | 127.98 | 0.15 | Pass |
| 114.85 | 100 | Negative Pulse | 116.34 | 114.01 | 118.01 | 0.15 | Pass |
| | 100 | Positive Pulse | 116.34 | 114.00 | 118.00 | 0.15 | Pass |
| 104.85 | 100 | Negative Pulse | 106.31 | 103.97 | 107.97 | 0.15 | Pass |
| | 100 | Positive Pulse | 106.31 | 103.98 | 107.98 | 0.15 | Pass |

-- End of measurement results--

## Overload Detector

Overload indication performed according to IEC 61672-3:2013 20 and ANSI S1.4-2014 Part 3: 20 for compliance to IEC 61672-1:2013 5.11, IEC 60804:2000 9.3.5, IEC 61252:2002 11, ANSI S1.4 (R2006) 5.8, and ANSI S1.4-2014 Part 1: 5.11, ANSI S1.25 (R2007) 7.6, ANSI S1.43 (R2007) 7

| Measurement | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| Positive | 141.70 | 140.00 | 143.00 | 0.15 | Pass |
| Negative | 141.60 | 140.00 | 143.00 | 0.15 | Pass |
| Difference | 0.10 | -1.50 | 1.50 | 0.15 | Pass |

-- End of measurement results--

## Peak Rise Time

Peak rise time performed according to IEC 60651:2001 9.4.4 and ANSI S1.4:1983 (R2006) 8.4.4

| Amplitude [dB] | Duration [µs] | | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|---|
| 137.85 | 40 | Negative Pulse | 134.52 | 133.09 | 135.09 | 0.15 | Pass |
| | | Positive Pulse | 134.51 | 133.07 | 135.07 | 0.15 | Pass |
| | 30 | Negative Pulse | 133.41 | 133.09 | 135.09 | 0.15 | Pass |
| | | Positive Pulse | 133.45 | 133.07 | 135.07 | 0.15 | Pass |

-- End of measurement results--

# Positive Pulse Crest Factor

## 200 µs pulse tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Crest Factor measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

| Amplitude [dB] | Crest Factor | Test Result [dB] | Limits [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| 136.85 | 3 | OVLD | ± 0.50 | 0.15 ‡ | Pass |
| | 5 | OVLD | ± 1.00 | 0.15 ‡ | Pass |
| | 10 | OVLD | ± 1.50 | 0.15 ‡ | Pass |
| 126.85 | 3 | -0.15 | ± 0.50 | 0.15 ‡ | Pass |
| | 5 | -0.15 | ± 1.00 | 0.16 ‡ | Pass |
| | 10 | OVLD | ± 1.50 | 0.15 ‡ | Pass |
| 116.85 | 3 | -0.16 | ± 0.50 | 0.15 ‡ | Pass |
| | 5 | -0.15 | ± 1.00 | 0.15 ‡ | Pass |
| | 10 | -0.11 | ± 1.50 | 0.15 ‡ | Pass |
| 106.85 | 3 | -0.16 | ± 0.50 | 0.15 ‡ | Pass |
| | 5 | -0.14 | ± 1.00 | 0.15 ‡ | Pass |
| | 10 | -0.18 | ± 1.50 | 0.15 ‡ | Pass |

**-- End of measurement results--**

# Negative Pulse Crest Factor

## 200 µs pulse tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Crest Factor measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

| Amplitude [dB] | Crest Factor | Test Result [dB] | Limits [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| 136.85 | 3 | OVLD | ± 0.50 | 0.15 ‡ | Pass |
| | 5 | OVLD | ± 1.00 | 0.15 ‡ | Pass |
| | 10 | OVLD | ± 1.50 | 0.15 ‡ | Pass |
| 126.85 | 3 | -0.13 | ± 0.50 | 0.15 ‡ | Pass |
| | 5 | -0.12 | ± 1.00 | 0.15 ‡ | Pass |
| | 10 | OVLD | ± 1.50 | 0.15 ‡ | Pass |
| 116.85 | 3 | -0.15 | ± 0.50 | 0.15 ‡ | Pass |
| | 5 | -0.13 | ± 1.00 | 0.15 ‡ | Pass |
| | 10 | -0.10 | ± 1.50 | 0.15 ‡ | Pass |
| 106.85 | 3 | -0.16 | ± 0.50 | 0.15 ‡ | Pass |
| | 5 | -0.13 | ± 1.00 | 0.15 ‡ | Pass |
| | 10 | -0.17 | ± 1.50 | 0.15 ‡ | Pass |

**-- End of measurement results--**

# Tone Burst

## 2kHz tone burst tests at 2.0, 12.0, 22.0, 32.0 dB below Overload Limit

Tone burst response measured according to IEC 60651:2001 9.4.2 and ANSI S1.4:1983 (R2006) 8.4.2

| Amplitude [dB] | Crest Factor | Test Result [dB] | Limits [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| 136.85 | 3 | OVLD | ± 0.50 | 0.15 | Pass |
| | 5 | OVLD | ± 1.00 | 0.15 | Pass |
| 126.85 | 3 | -0.08 | ± 0.50 | 0.15 | Pass |
| | 5 | 0.00 | ± 1.00 | 0.15 | Pass |
| 116.85 | 3 | -0.10 | ± 0.50 | 0.15 | Pass |
| | 5 | -0.03 | ± 1.00 | 0.15 | Pass |
| 106.85 | 3 | -0.13 | ± 0.50 | 0.15 | Pass |
| | 5 | -0.08 | ± 1.00 | 0.15 | Pass |

**-- End of measurement results--**

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## Impulse Detector - Repeat

Impulse Detector measured according to IEC 60651:2001 9.4.3 and ANSI S1.4:1983 (R2006) 8.4.3

| Amplitude [dB] | Repitition Rate [Hz] | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 140 | 100.00 | -2.87 | -3.71 | -1.71 | 0.15 | Pass |
| | 20.00 | -7.53 | -9.57 | -5.57 | 0.20 | Pass |
| | 2.00 | -8.73 | -10.76 | -6.76 | 0.15 | Pass |
| Step | 2.00 | 5.10 | 4.00 | 6.00 | 0.15 | Pass |

**-- End of measurement results--**

## Impulse Detector - Single

Impulse Detector measured according to IEC 60651:2001 9.4.3 and ANSI S1.4:1983 (R2006) 8.4.3

| Amplitude [dB] | Duration [ms] | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|---|
| 140 | 20.00 | -3.66 | -5.11 | -2.11 | 0.15 | Pass |
| | 5.00 | -8.76 | -10.76 | -6.76 | 0.16 | Pass |
| | 2.00 | -12.70 | -14.55 | -10.55 | 0.16 | Pass |
| Step | 2.00 | 10.09 | 9.00 | 11.00 | 0.16 | Pass |

**-- End of measurement results--**

## Gain

Gain measured according to IEC 61672-3:2013 17.3 and 17.4 and ANSI S1.4-2014 Part 3: 17.3 and 17.4

| Measurement | Test Result [dB] | Lower limit [dB] | Upper limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| 0 dB Gain | 93.98 | 93.93 | 94.13 | 0.15 | Pass |
| 0 dB Gain, Linearity | 41.19 | 40.33 | 41.73 | 0.16 | Pass |
| OBA Low Range | 94.03 | 93.93 | 94.13 | 0.15 | Pass |
| OBA Normal Range | 94.03 | 93.20 | 94.80 | 0.15 | Pass |

**-- End of measurement results--**

## Broadband Noise Floor

Self-generated noise measured according to IEC 61672-3:2013 11.2 and ANSI S1.4-2014 Part 3: 11.2

| Measurement | Test Result [dB] | Upper limit [dB] | Result |
|---|---|---|---|
| A-weight Noise Floor | 27.29 | 36.00 | Pass |
| C-weight Noise Floor | 27.17 | 35.00 | Pass |
| Z-weight Noise Floor | 33.49 | 39.00 | Pass |

**-- End of measurement results--**

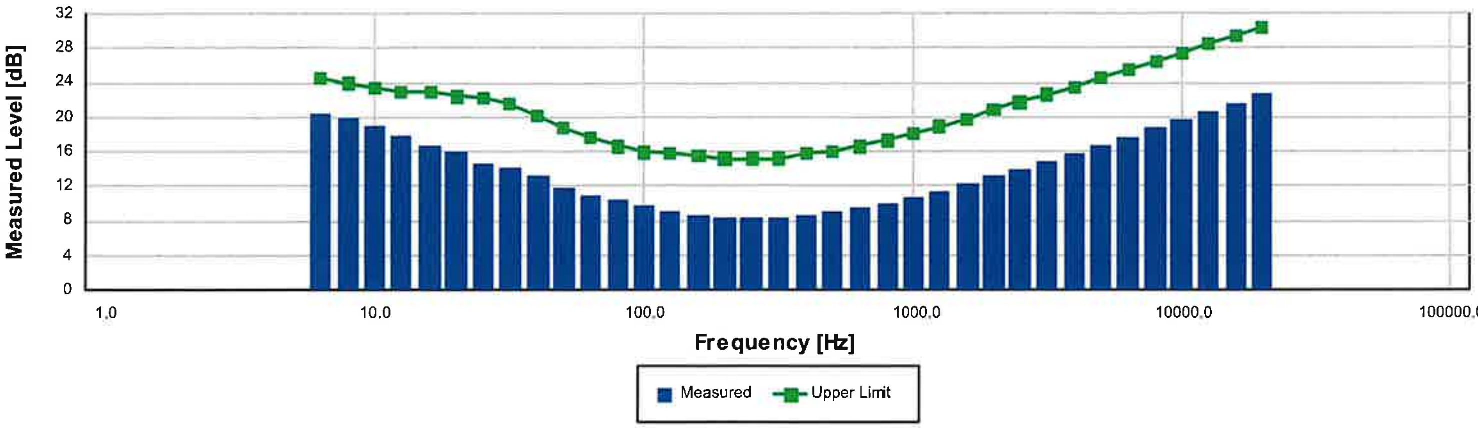
## Total Harmonic Distortion

Measured using 1/3-Octave filters

| Measurement | Test Result [dB] | Lower Limit [dB] | Upper Limit [dB] | Expanded Uncertainty [dB] | Result |
|---|---|---|---|---|---|
| 10 Hz Signal | 135.13 | 135.05 | 136.65 | 0.15 | Pass |
| THD | -62.67 | | -58.00 | 0.00 ‡ | Pass |
| THD+N | -59.85 | | -58.00 | 0.00 ‡ | Pass |

**-- End of measurement results--**

## 1/3-Octave Self-Generated Noise




The SLM is set to low range.

| Frequency [Hz] | Test Result [dB] | Upper limit [dB] | Result |
|---|---|---|---|
| 6.30 | 20.43 | 24.60 | Pass |
| 8.00 | 20.00 | 24.00 | Pass |
| 10.00 | 18.91 | 23.50 | Pass |
| 12.50 | 17.83 | 23.00 | Pass |
| 16.00 | 16.72 | 22.90 | Pass |
| 20.00 | 15.99 | 22.40 | Pass |
| 25.00 | 14.70 | 22.30 | Pass |
| 31.50 | 14.06 | 21.50 | Pass |
| 40.00 | 13.13 | 20.20 | Pass |
| 50.00 | 11.88 | 18.80 | Pass |
| 63.00 | 10.97 | 17.60 | Pass |
| 80.00 | 10.52 | 16.60 | Pass |
| 100.00 | 9.76 | 15.90 | Pass |
| 125.00 | 9.07 | 15.70 | Pass |
| 160.00 | 8.51 | 15.50 | Pass |
| 200.00 | 8.47 | 15.20 | Pass |
| 250.00 | 8.25 | 15.20 | Pass |
| 315.00 | 8.41 | 15.20 | Pass |
| 400.00 | 8.61 | 15.70 | Pass |
| 500.00 | 8.98 | 16.00 | Pass |
| 630.00 | 9.47 | 16.60 | Pass |
| 800.00 | 10.02 | 17.30 | Pass |
| 1,000.00 | 10.72 | 18.10 | Pass |
| 1,250.00 | 11.49 | 18.90 | Pass |
| 1,600.00 | 12.30 | 19.80 | Pass |
| 2,000.00 | 13.12 | 20.80 | Pass |
| 2,500.00 | 13.94 | 21.70 | Pass |
| 3,150.00 | 14.85 | 22.60 | Pass |
| 4,000.00 | 15.87 | 23.50 | Pass |
| 5,000.00 | 16.79 | 24.50 | Pass |
| 6,300.00 | 17.69 | 25.50 | Pass |
| 8,000.00 | 18.70 | 26.50 | Pass |
| 10,000.00 | 19.68 | 27.40 | Pass |
| 12,500.00 | 20.66 | 28.50 | Pass |
| 16,000.00 | 21.64 | 29.50 | Pass |
| 20,000.00 | 22.64 | 30.40 | Pass |

**-- End of measurement results--**

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-- End of Report--

Signatory: Jacob Cannon

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Provo, UT 84601, United States
716-684-0001

# APPENDIX C: FIELD MEASUREMENTS

# Field Noise Measurement Site Data Sheet

| | |
|---|---|
| PROJECT NAME: | SR-177; SR-193 to 1800 North Re-evaluation |
| SITE / ADDRESS: | 1 / 200 South Trail |
| OBSERVER NAME: | Matt Montgomery |
| DATE: | July 16, 2024 |

### *General Meteorological Conditions*

| | |
|---|---|
| TEMPERATURE / CLOUD COVER:: | 83°F/Overcast |
| WIND SPEED / DIRECTION: | 7 MPH/SE |

### *Sound Level Meter Information*

| | |
|---|---|
| MODEL / SERIAL NUMBER: | Larson Davis SoundTrack LxT1 / 0006299 |
| EVENT NUMBER: | .002 |

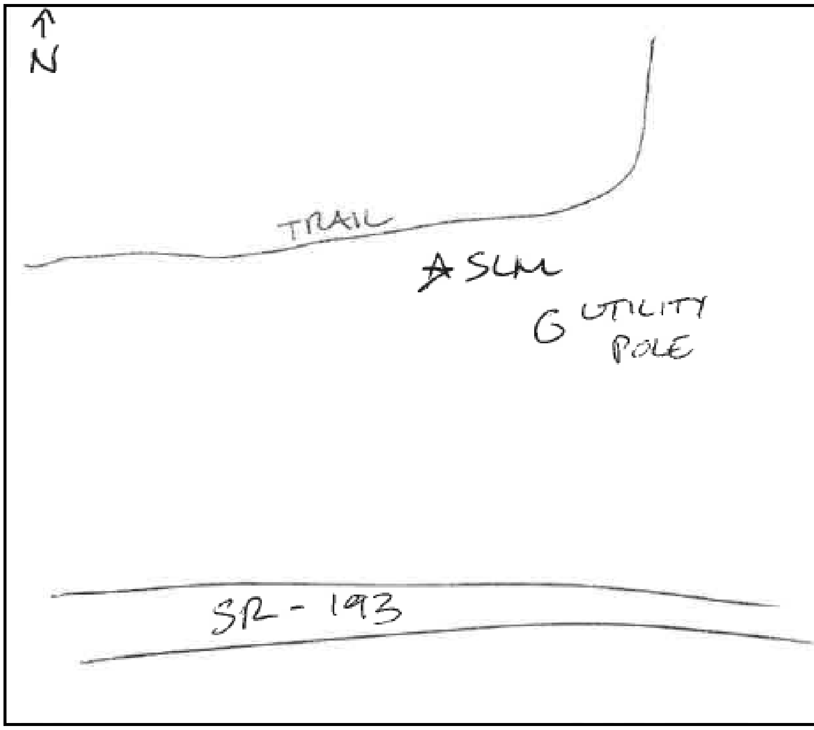
### *Calibration Information*

| | |
|---|---|
| PRE-MEASUREMENT LEVEL: | 94.03 |
| POST-MEASUREMENT LEVEL: | 94.05 |

### *Validation Measurement Results*

| | |
|---|---|
| START TIME: | 10:01 AM |
| END TIME: | 10:21 AM |
| $LA_{eq}$: | 48.0 |
| $LAS_{max}$: | 48.4 |

### *Site Sketch* *(plan view, distances, roadways, buildings, reflecting surfaces)*




### *Background Noise / Unusual Events Log*

| START TIME | END TIME | DESCRIPTION | START TIME | END TIME | DESCRIPTION |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# Field Noise Measurement Site Data Sheet

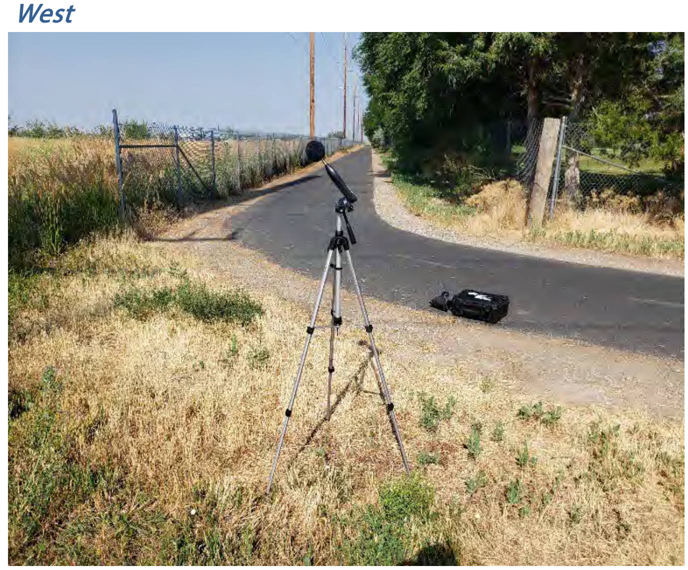
| | |
|---|---|
| **PROJECT NAME:** | SR-177; SR-193 to 1800 North Re-evaluation |
| **SITE / ADDRESS:** | 1 / 200 South Trail |

*North*

*East*

*South*

*West*



# Field Noise Measurement Site Data Sheet

| | |
|---|---|
| **PROJECT NAME:** | SR-177; SR-193 to 1800 North Re-evaluation |
| **SITE / ADDRESS:** | 1 / 200 South Trail |

*Traffic Speed & Volumes (per lane per 20 minutes)*

| ROAD | DIRECTION | SPEED | CONGESTION | AUTO | MED. TRUCK | HEAVY TRUCK | BUS | MOTORCYCLE |
|---|---|---|---|---|---|---|---|---|
| SR-193 | EB | 50 | No | 39 | 8 | 1 | 0 | 1 |
| SR-193 | WB | 50 | No | 61 | 9 | 3 | 0 | 0 |

*Traffic Speed & Volumes (per lane per hour)*

| ROAD | DIRECTION | SPEED | CONGESTION | AUTO | MED. TRUCK | HEAVY TRUCK | BUS | MOTORCYCLE |
|---|---|---|---|---|---|---|---|---|
| SR-193 | EB | 50 | No | 117 | 24 | 3 | 0 | 3 |
| SR-193 | WB | 50 | No | 183 | 27 | 9 | 0 | 0 |

# Field Noise Measurement Site Data Sheet

| | |
|---|---|
| **PROJECT NAME:** | SR-177; SR-193 to 1800 North Re-evaluation |
| **SITE / ADDRESS:** | 4 / 4228 West 300 North |
| **OBSERVER NAME:** | Matt Montgomery |
| **DATE:** | July 16, 2024 |

## *General Meteorological Conditions*

| | |
|---|---|
| **TEMPERATURE / CLOUD COVER::** | 87°F/Overcast |
| **WIND SPEED / DIRECTION:** | 0 MPH/N |

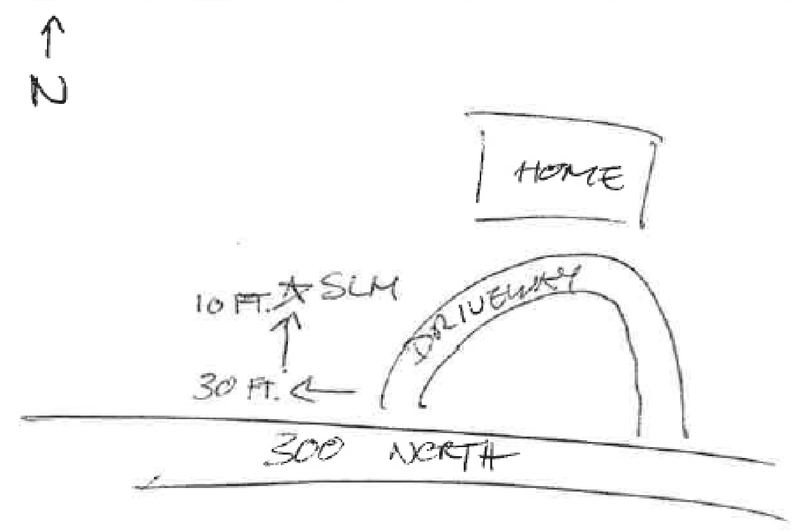
## *Sound Level Meter Information*

| | |
|---|---|
| **MODEL / SERIAL NUMBER:** | Larson Davis SoundTrack LxT1 / 0006299 |
| **EVENT NUMBER:** | .003 |

## *Calibration Information*

| | |
|---|---|
| **PRE-MEASUREMENT LEVEL:** | 94.05 |
| **POST-MEASUREMENT LEVEL:** | 94.04 |

## *Site Sketch* *(plan view, distances, roadways, buildings, reflecting surfaces)*




## *Validation Measurement Results*

| | |
|---|---|
| **START TIME:** | 10:53 AM |
| **END TIME:** | 11:14 AM |
| **$LA_{eq}$:** | 63.8 |
| **$LAS_{max}$:** | 83.9 |

*A 21-minute measurement was recorded. Two unusual events occurred during the measurement (see below). These events occurred over a 1-minute period; this period was removed from the measurement data which provides a 20-minute measurement consistent with other sites. The $LA_{eq}$ was adjusted to reflect the 20-minute period.*

## *Background Noise / Unusual Events Log*

| START TIME | END TIME | DESCRIPTION | START TIME | END TIME | DESCRIPTION |
|---|---|---|---|---|---|
| 11:02:21 | 11:02:51 | Propeller plane | | | |
| 11:04:11 | 11:04:41 | Propeller plane | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# Field Noise Measurement Site Data Sheet

| | |
|---|---|
| **PROJECT NAME:** | SR-177; SR-193 to 1800 North Re-evaluation |
| **SITE / ADDRESS:** | 4 / 4228 West 300 North |

*North*

*East*

*South*

*West*

# Field Noise Measurement Site Data Sheet

**PROJECT NAME:** SR-177; SR-193 to 1800 North Re-evaluation

**SITE / ADDRESS:** 4 / 4228 West 300 North

*Traffic Speed & Volumes (per lane per 20 minutes)*

| ROAD | DIRECTION | SPEED | CONGESTION | AUTO | MED. TRUCK | HEAVY TRUCK | BUS | MOTORCYCLE |
|---|---|---|---|---|---|---|---|---|
| 300 North | EB | 35-40 | No | 34 | 5 | 0 | 0 | 0 |
| 300 North | WB | 35-40 | No | 21 | 7 | 1 | 1 | 0 |

*Traffic Speed & Volumes (per lane per hour)*

| ROAD | DIRECTION | SPEED | CONGESTION | AUTO | MED. TRUCK | HEAVY TRUCK | BUS | MOTORCYCLE |
|---|---|---|---|---|---|---|---|---|
| 300 North | EB | 35-40 | No | 102 | 15 | 0 | 0 | 0 |
| 300 North | WB | 35-40 | No | 63 | 21 | 3 | 3 | 0 |

# Field Noise Measurement Site Data Sheet

| | |
|---|---|
| PROJECT NAME: | SR-177; SR-193 to 1800 North Re-evaluation |
| SITE / ADDRESS: | 6 / Emigrant Trail |
| OBSERVER NAME: | Matt Montgomery |
| DATE: | July 16, 2024 |

## General Meteorological Conditions

| | |
|---|---|
| TEMPERATURE / CLOUD COVER:: | 89°F/Overcast |
| WIND SPEED / DIRECTION: | 3 MPH/N |

## Sound Level Meter Information

| | |
|---|---|
| MODEL / SERIAL NUMBER: | Larson Davis SoundTrack LxT1 / 0006299 |
| EVENT NUMBER: | .005 |

## Calibration Information

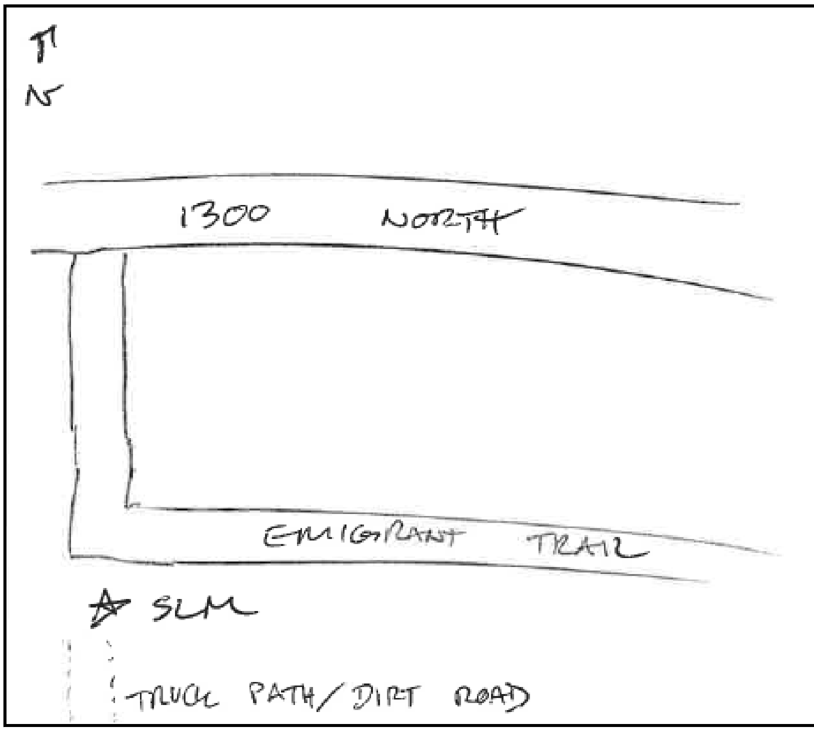
| | |
|---|---|
| PRE-MEASUREMENT LEVEL: | 94.04 |
| POST-MEASUREMENT LEVEL: | 94.10 |

## Validation Measurement Results

| | |
|---|---|
| START TIME: | 12:03 PM |
| END TIME: | 12:26 PM |
| $LA_{eq}$: | 56.4 |
| $LAS_{max}$: | 71.4 |

*A 23-minute measurement was recorded. Six unusual events occurred during the measurement (see below). These events occurred over a 3-minute period; this period was removed from the measurement data which provides a 20-minute measurement consistent with other sites. The $LA_{eq}$ was adjusted to reflect the 20-minute period.*

## Site Sketch *(plan view, distances, roadways, buildings, reflecting surfaces)*




## Background Noise / Unusual Events Log

| START TIME | END TIME | DESCRIPTION | START TIME | END TIME | DESCRIPTION |
|---|---|---|---|---|---|
| 12:04:14 | 12:04:44 | Propeller plane | | | |
| 12:07:44 | 12:08:14 | Helicopter | | | |
| 12:10:04 | 12:10:34 | Commercial jet | | | |
| 12:20:34 | 12:21:04 | Commercial jet | | | |
| 12:22:44 | 12:23:14 | Commercial jet | | | |
| 12:23:54 | 12:24:24 | Propeller plane | | | |
| | | | | | |

# Field Noise Measurement Site Data Sheet

| | |
|---|---|
| **PROJECT NAME:** | SR-177; SR-193 to 1800 North Re-evaluation |
| **SITE / ADDRESS:** | 6 / Emigrant Trail |

*North*

*East*

*South*

*West*

# Field Noise Measurement Site Data Sheet

**PROJECT NAME:** SR-177; SR-193 to 1800 North Re-evaluation

**SITE / ADDRESS:** 6 / Emigrant Trail

*Traffic Speed & Volumes (per lane per 20 minutes)*

| ROAD | DIRECTION | SPEED | CONGESTION | AUTO | MED. TRUCK | HEAVY TRUCK | BUS | MOTORCYCLE |
|---|---|---|---|---|---|---|---|---|
| 1300 North | EB | 30 | No | 6 | 3 | 0 | 0 | 0 |
| 1300 North | WB | 30 | No | 10 | 3 | 1 | 0 | 0 |

*Traffic Speed & Volumes (per lane per hour)*

| ROAD | DIRECTION | SPEED | CONGESTION | AUTO | MED. TRUCK | HEAVY TRUCK | BUS | MOTORCYCLE |
|---|---|---|---|---|---|---|---|---|
| 1300 North | EB | 30 | No | 18 | 9 | 0 | 0 | 0 |
| 1300 North | WB | 30 | No | 30 | 9 | 3 | 0 | 0 |

# Appendix C – WILDLIFE AND HABITAT

# Memorandum

*Environmental Services*

**DATE:** January 29, 2025

**TO:** Staci Hill, Sr. PM, HNTB

**FROM:** Matt Howard, Natural Resources Manager

**SUBJECT:** West Davis Corridor SR-177; SR-193 to 1800 N PIN 20927

Staci,

I have reviewed the assessment for the West Davis Corridor SR-177; SR-193 to 1800 reevaluation and its potential impacts to species protected by the Endangered Species Act (ESA) and concur with its findings. I agree with the summary's findings that the project would have no effect on species protected by the ESA. The project will not result in take of species protected by the MBTA or BGEPA. I have also reviewed the project to assess impacts to greater sage-grouse and have found that the project would have no impact on sage-grouse.
.

Sincerely,

Matt Howard
Natural Resource Manager

# TECHNICAL MEMORANDUM

| | |
|---|---|
| **TO:** | Naomi Kisen, Utah Department of Transportation<br>Matt Howard, Utah Department of Transportation |
| **COPIES:** | Randy Jefferies, HNTB<br>Jamie Tsandes, Bowen Collins & Associates<br>File |
| **FROM:** | Elena Capson, Biologist<br>Bowen Collins & Associates |
| **DATE:** | December 3, 2024 |
| **SUBJECT:** | PIN 20927 \| WDC SR-177; SR-193 to 1800 N<br>Threatened and Endangered Species Memo |

## INTRODUCTION

Utah Department of Transportation (UDOT) is planning to expand the West Davis Corridor approximately three linear miles through West Point City, Utah. Bowen Collins & Associates (BC&A) has been contracted to complete the necessary evaluations for aquatic resources in preparation for environmental permitting with the U.S. Army Corps of Engineers (USACE). Part of the requirements for a USACE permit include biological evaluations and/or surveys for Threatened and Endangered Species (TES) with findings included in a Biological Assessment or TES Memo depending on the presence of TES or TES habitat. The assessment of impacts to TES is the purpose of this memo.

## EXISTING CONDITIONS

The project area is a three-mile, 195 acre, linear corridor that is generally oriented in a north-south direction located in West Point, Utah (see Site Location Figures, Appendix A). The project area is predominantly used for rural agricultural practices; however, the surrounding area is rapidly urbanizing, and the WDC is needed to provide adequate infrastructure for the increasing population. Agricultural pastures and open fields make up the majority of the project area. Individual pastures are usually separated by barbwire. Most of them are planted with intermediate wheatgrass for grazing cattle, and due to flood irrigation, the fields also support rushes.

## POTENTIAL SPECIES OF CONCERN

A list of potential TES was generated using the Information for Planning and Consultation (IPaC) online tool provided by the U.S. Fish & Wildlife Service (USFWS) and can be found in Appendix B. Based on the project location, this list includes two potential TES including monarch butterfly and Ute ladies'-tresses as listed with habitat requirements in the table on the next page.

**Potential TES Species & Habitat in the Project Area**

| Species | Status | Habitat Requirements | Habitat in Action Area | Critical Habitat in Action Area |
|---|---|---|---|---|
| **Insects** | | | | |
| Monarch Butterfly *Danaus plexippus* | Candidate | Open fields and meadows with abundant milkweed plants for breeding. | No | Not Designated |
| **Plants** | | | | |
| Ute Ladies'-tresses *Spiranthes diluvialis* | Threatened | Found in moist to very wet meadows, along streams and ditches, in abandoned stream meanders, and near springs, seeps, and lake shores. In Utah, elevation range: 4,200-7,000 feet | No | Not Designated |

## HABITAT DETERMINATION

There is no habitat for either of these species at this site. The remainder of this memo will further discuss the lack of habitat for each species. Photos of the site are included in Appendix C.

**Monarch Butterfly** (*Danaus plexippus*): Monarch butterflies rely on abundant milkweed for breeding and other flowering plants for foraging. While some milkweed plants were found within the project area, they were sparse and not in significant enough numbers to be suitable for monarch breeding habitat. Therefore, there is no suitable habitat for this species within the project area.

**Ute Ladies'-tresses** (*Spiranthes diluvialis*)**:** Most of the wetlands within the project area have tall or dense vegetation which is unsuitable for Ute ladies'-tresses (ULT) as they are not shade tolerant and do not do well with competition. Only one wetland at the site had a suitable vegetation community; however, this wetland is significantly disturbed as it has regularly been mowed and hayed. According to the ULT survey protocol, highly disturbed or modified sites—such as this site that has been harvested—are not considered suitable (USFWS, 2017). Therefore, there is no suitable habitat for ULT within the project area.

## CONCLUSION

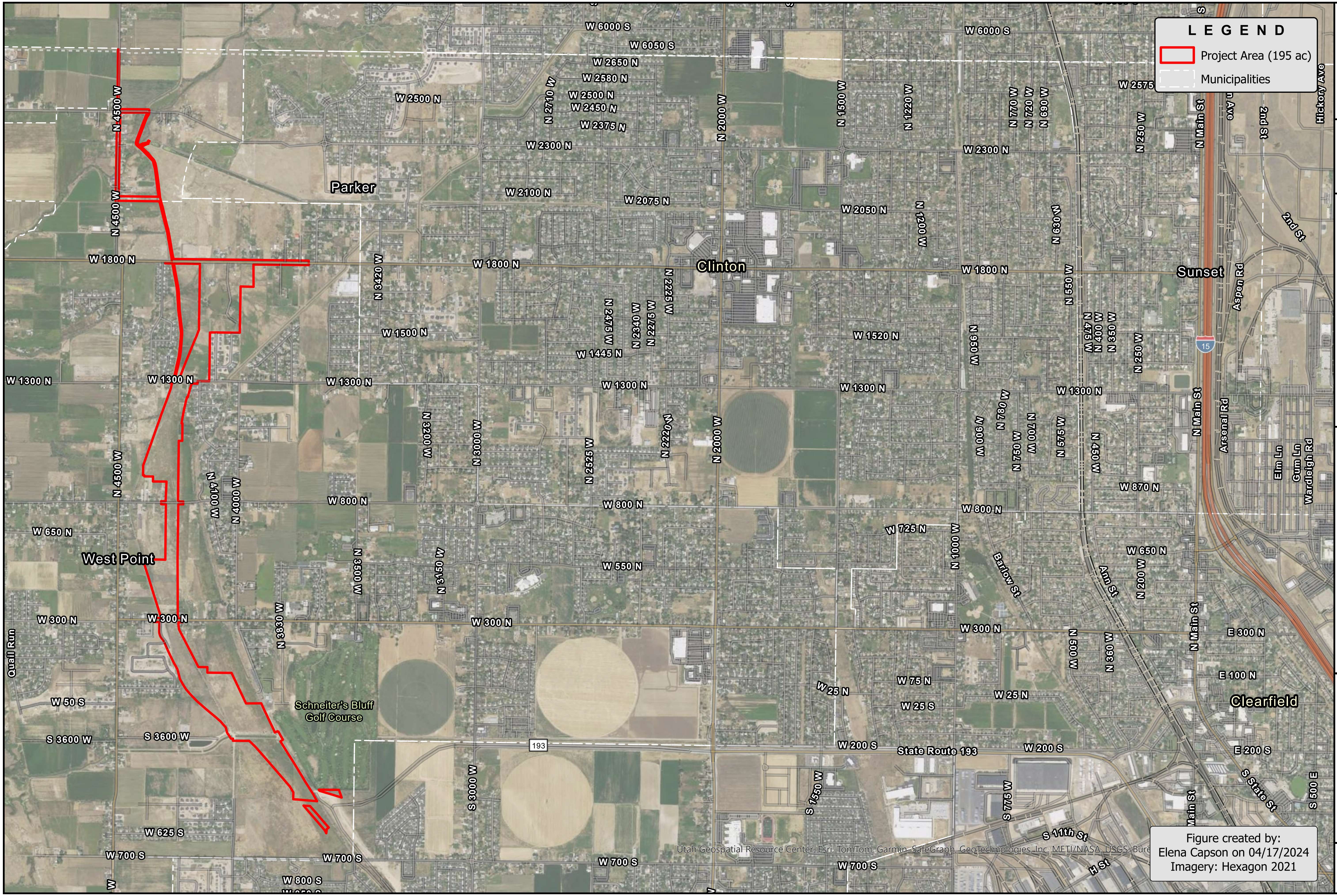
There is no suitable habitat for monarch butterfly or Ute ladies'-tresses as described above. As such, there will be *no effect* to TES by the proposed project.

## REFERENCE

USFWS. 2017. Interim Survey Requirements for Ute Ladies'-tresses Orchid (*Spiranthes diluvialis*). https://www.fws.gov/sites/default/files/documents/SPDI_interimSurveyRequirements_1992_revised%202017.pdf

# Appendix A

# Site Location Figures




SCALE: 0 750 1,500 Feet

NORTH:

SITE LOCATION

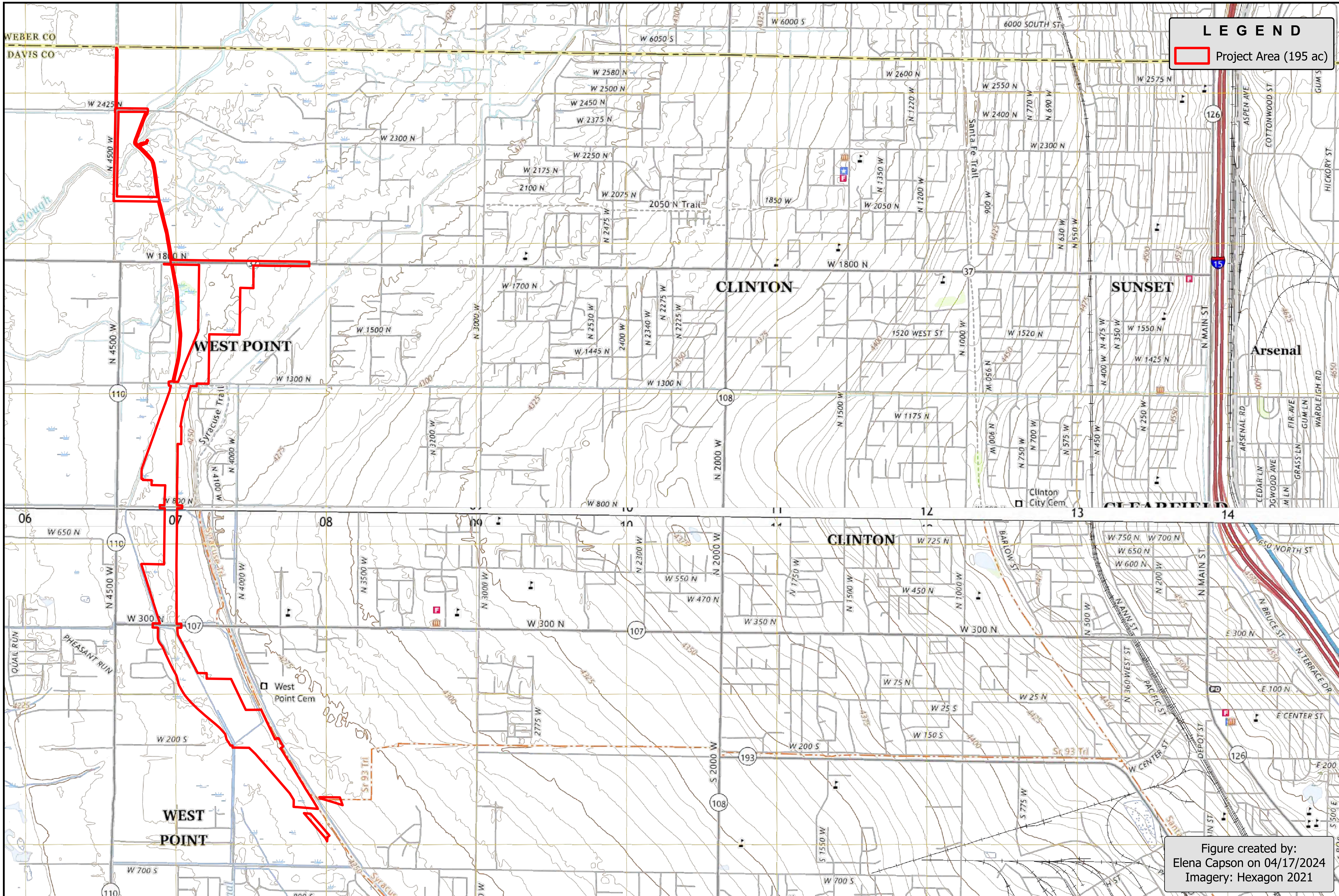
UDOT

WDC SR-177,
SR-193 TO 1800 N

BOWEN COLLINS & ASSOCIATES

FIGURE NO.

1A




SCALE: 0 750 1,500 Feet

NORTH:

SITE LOCATION

UDOT

WDC SR-177,
SR-193 TO 1800 N

BOWEN COLLINS & ASSOCIATES

FIGURE NO.

1B

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_Environmental_Photos.aprx ECAPSON 12/3/2024

# Appendix B

## Information for Planning and Consultation (IPaC) and Utah Natural Heritage Program (UNHP) Reports

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Utah Ecological Services Field Office
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603
Phone: (801) 975-3330 Fax: (801) 975-3331

In Reply Refer To: 08/07/2024 20:26:20 UTC
Project Code: 2024-0127448
Project Name: WDC: SR-177; SR-193 to 1800 N

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

# OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

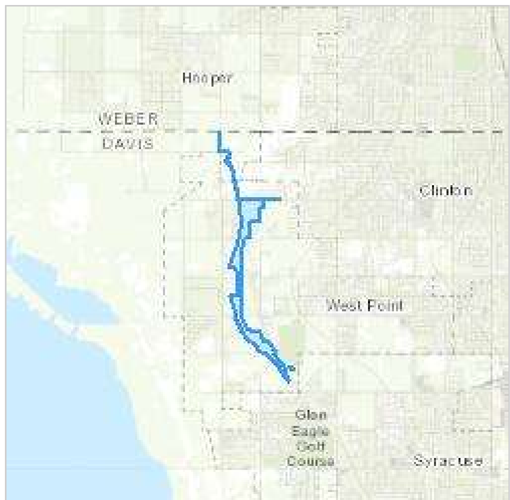
**Utah Ecological Services Field Office**
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603
(801) 975-3330

# PROJECT SUMMARY

Project Code: 2024-0127448
Project Name: WDC: SR-177; SR-193 to 1800 N
Project Type: Road/Hwy - New Construction
Project Description: Phase II of the West Davis Corridor project will extend the current highway by about 3 linear miles and include about 1.5 miles recreational trail in West Point, Utah.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.1299294,-112.10856685346258,14z




Counties: Davis County, Utah

# ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## INSECTS

| NAME | STATUS |
| --- | --- |
| Monarch Butterfly *Danaus plexippus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/9743 | Candidate |

## FLOWERING PLANTS

| NAME | STATUS |
| --- | --- |
| Ute Ladies'-tresses *Spiranthes diluvialis*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/2159 | Threatened |

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

# IPAC USER CONTACT INFORMATION

Agency: Utah Department of Transportation
Name: Elena Capson
Address: 154 East 14075 South
City: Draper
State: UT
Zip: 84020
Email ecapson@bowencollins.com
Phone: 8014952224

Utah Division of Wildlife Resources
Utah Natural Heritage Program
1594 W. North Temple
PO Box 146301
Salt Lake City, UT 84116

Report Number: 15835
August 7, 2024

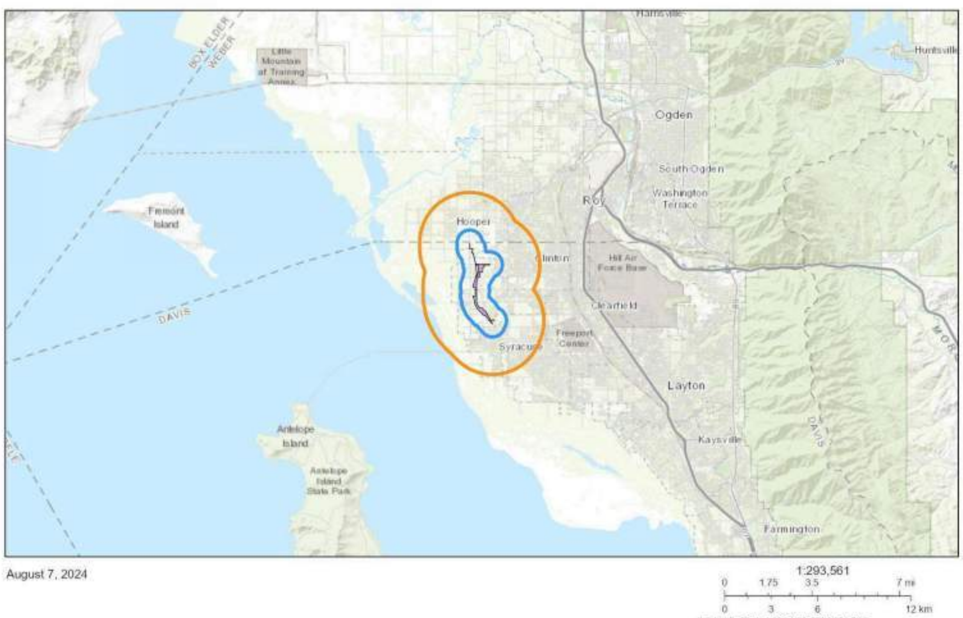
# Utah Natural Heritage Program Online Species Search Report

## Project Information

**Project Name**
WDC: SR-177; SR-193 to 1800 N

**Project Description**
Phase II of the West Davis Corridor project will extend the current highway by about 3 linear miles and include about 1.5 miles recreational trail

**Location Description**
West Point, UT




## Animals within a ½ mile radius

| Common Name | Scientific Name | State Status | U.S. ESA Status | Last Observation Year |
|---|---|---|---|---|
| Northern Leopard Frog | Lithobates pipiens | SGCN | | 2006 |
| Snowy Plover | Charadrius nivosus | SGCN | | 1997 |

## Plants within a ½ mile radius

| Common Name | Scientific Name | State Status | U.S. ESA Status | Last Observation Year |
|---|---|---|---|---|
| **No Species Found** | | | | |

## Animals within a 2 mile radius

| Common Name | Scientific Name | State Status | U.S. ESA Status | Last Observation Year |
|---|---|---|---|---|
| American Bittern | Botaurus lentiginosus | SGCN | | 1902 |
| Bald Eagle | Haliaeetus leucocephalus | SGCN | | 1986 |
| Burrowing Owl | Athene cunicularia | SGCN | | 1984 |
| Northern Leopard Frog | Lithobates pipiens | SGCN | | 2010 |
| Peregrine Falcon | Falco peregrinus | SGCN | | 1992 |
| Snowy Plover | Charadrius nivosus | SGCN | | 2013 |
| Winged Floater | Anodonta nuttalliana | SGCN | | 2022 |

## Plants within a 2 mile radius

| Common Name | Scientific Name | State Status | U.S. ESA Status | Last Observation Year |
|---|---|---|---|---|
| **No Species Found** | | | | |

## Definitions

**State Status**

| | |
|---|---|
| SGCN | Species of greatest conservation need listed in the Utah Wildlife Action Plan |

**U.S. Endangered Species Act**

| | |
|---|---|
| LE | A taxon that is listed by the U.S. Fish and Wildlife Service as "endangered" with the probability of worldwide extinction |
| LT | A taxon that is listed by the U.S. Fish and Wildlife Service as "threatened" with becoming endangered |
| LE;XN | An "endangered" taxon that is considered by the U.S. Fish and Wildlife Service to be "experimental and nonessential" in its designated use areas in Utah |
| C | A taxon for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threats to justify it being a "candidate" for listing as endangered or threatened |
| PT/PE | A taxon "proposed" to be listed as "endangered" or "threatened" by the U.S. Fish and Wildlife Service |

## Disclaimer

The information provided in this report is based on data existing in the Utah Division of Wildlife Resources' central database at the time of the request. It should not be regarded as a final statement on the occurrence of any species on or near the designated site, nor should it be considered a substitute for on-the-ground biological surveys. Moreover, because the Utah Division of Wildlife Resources' central database is continually updated, any given response is only appropriate for its respective request.

The UDWR provides no warranty, nor accepts any liability, occurring from any incorrect, incomplete, or misleading data, or from any incorrect, incomplete, or misleading use of these data.

The results are a query of species tracked by the Utah Natural Heritage Program, which includes all species listed under the U.S. Endangered Species Act and species on the Utah Wildlife Action Plan. Other significant wildlife values might also be present on the designated site. Please contact UDWR's regional habitat manager if you have any questions.

For additional information about species listed under the Endangered Species Act and their Critical Habitats that may be affected by activities in this area or for information about Section 7 consultation under the Endangered Species Act, please visit https://ecos.fws.gov/ipac/ or contact the U.S. Fish and Wildlife Service Utah Ecological Services Field Office at (801) 975-3330 or utahfieldoffice_esa@fws.gov.

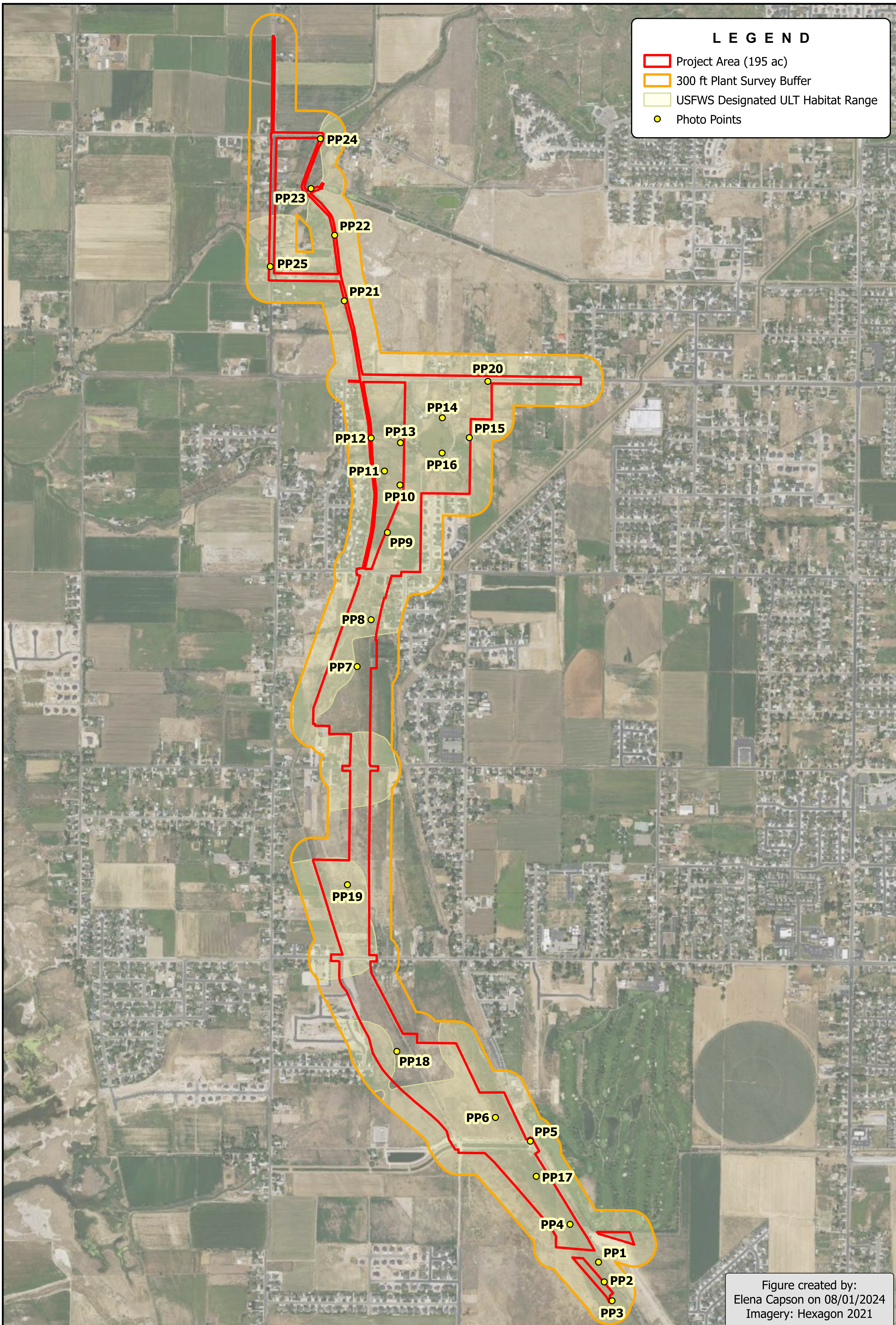
Please contact our office at (801) 538-4759 or habitat@utah.gov if you require further assistance.

Your project is located in the following UDWR region(s): Northern region

**Report generated for:**
Elena Capson
Bowen Collins & Associates
154 East 14075 South
Draper, UT 84020
(801) 495-2224
ecapson@bowencollins.com

# Appendix C

# Habitat Map and Photographs




BOWEN COLLINS & ASSOCIATES

UDOT
PIN 20927
WDC: SR-177; SR-193 TO 1800 N.

HABITAT ASSESSMENT

NORTH:

SCALE: 0 500 1,000 Feet

FIGURE NO. 2

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_Environmental_Photos.aprx ECAPSON 12/3/2024


**Photo Point 1**


**Photo Point 2**


**Photo Point 3**


**Photo Point 3**


**Photo Point 4**


**Photo Point 5**


**Photo Point 6**


**Photo Point 7**


**Photo Point 8**


**Photo Point 8**


**Photo Point 9**


**Photo Point 9**


**Photo Point 10**


**Photo Point 11**


**Photo Point 12**


**Photo Point 12**


**Photo Point 13**


**Photo Point 13**


**Photo Point 13**


**Photo Point 14**


**Photo Point 14**


**Photo Point 15**


**Photo Point 15**


**Photo Point 16**

**Photo Point 17 – May 14th, 2024 (4° - N)**

**Photo Point 17 – May 14th, 2024 (142° - SE)**

**Photo Point 18 – May 14th, 2024 (264° - W)**


**Photo Point 19**


**Photo Point 19**


**Photo Point 20**


**Photo Point 21**


**Photo Point 22**


**Photo Point 23**


**Photo Point 23**


**Photo Point 24**


**Photo Point 25**


**Photo Point 25**

# Appendix D – AQUATIC RESOURCES

# *MEMORANDUM*

**Date:** Monday, September 30, 2024

**To:** Brandon Weston
UDOT Environmental Services Director

**From:** Rod Hess
UDOT Senior Landscape Architect Rod Hess 2024.09.30 11:57:05 -06'00'

**RE:** **ENVIRONMENTAL REVIEW FOR AQUATIC RESOURCES**
EIS Re-evaluation

## PROJECT PURPOSE, DESCRIPTION AND SCOPE OF WORK

The Utah Department of Transportation (UDOT) is completing a re-evaluation of the West Davis Corridor EIS and preparing a project advertisement to construct a second phase of West Davis Corridor (SR-177) between SR-193 and 1800 North in Davis County.

A Final Environmental Impact Statement (EIS) and Section 4(f) Evaluation for the West Davis Corridor (WDC) was completed in June 2017 and approved through the issuance of a Record of Decision (ROD) on September 29, 2017, from the Federal Highway Administration (FHWA). This re-evaluation is evaluating the design refinements proposed to address the change of conditions in the project area between State Route 193 (SR-193) and 1800 North in Davis County, Utah since approval of the EIS Selected Alternative (ESA) in the 2017 ROD. The design refinements identified as the Refined Selected Alternative (RSA) (see attached) include the need for a four-lane freeway (increased from a two-lane freeway in the ESA), improved alignment curvature, trail alignment, updated detention ponds and utility relocations.

Bowen Collins and Associates (BC&A), in cooperation with HNTB, has completed an Aquatic Resources Delineation Report (2024) within the RSA environmental study area footprint (see attached) to complete aquatic resource impact analysis as part of the WDC EIS re-evaluation. UDOT has reviewed the delineation report and provides the following summary and mitigation recommendations.

### Aquatic Resources and Wetlands:

Within the RSA of the EIS re-evaluation, BC&A did identify and map any potential aquatic resources including streams, ponds, ditches and wetland habitat that may be considered either waters of the U.S. (WOTUS), including wetlands, subject to Clean Water Act (CWA) jurisdiction by the U.S. Army Corps of Engineers (Army Corps), and natural streams regulated by the State of Utah as part of the State Alteration Permit Program.

Results of the Aquatic Resource Delineation Report shows a total of 38.37 acres of aquatic resources occurring within the RSA which include 31.63 acres of wetland habitat, 5.02 acres of ponds/streams, and 1.72 acres of ditches occurring within the RSA. Many of these aquatic resources are likely jurisdictional WOTUS and regulated by the Army Corps. The project must obtain an appropriate Department of Army

Permit based on the total acreage of impacts to jurisdictional aquatic resources. As part of the Army Corps permit application, UDOT will prepare and submit an Approved Jurisdictional Determination (AJD) to the Army Corps. By completing an AJD, the Army Corps will definitively determine which of all the mapped aquatic resources are considered jurisdictional WOTUS and the finalized Army Corps permit type will be determined based on total permanent impacts to those aquatic resources identified in the AJD as jurisdictional.

In addition to obtaining an appropriate Department of Army Permit, the project must also apply for and obtain a Stream Alteration Permit from the State of Utah for any impacts to Howard Slough, a perennial stream, which is considered a natural stream by the State of Utah and regulated as part of the Stream Alteration Program.

**Mitigation Commitments:**

1. **Apply for and obtain an appropriate Department of Army Permit. (UDOT)**
2. **Comply with all conditions included in the Department of Army Permit. (Awarded Contractor)**
3. **Apply for and obtain a Stream Alteration Permit from the Utah Division of Water Rights. (UDOT)**
4. **Comply with all conditions and findings included in the Stream Alteration Permit. (Awarded Contractor)**

## Utah Pollutant Discharge Elimination System (UPDES):

This project will disturb more than one (1) acre of earth and is required to comply with the Utah Pollutant Discharge Elimination System (UPDES) Utah Construction General Permit (CGP).

**Mitigation Commitments:**

1. **Comply with CGP, by preparing the Stormwater Pollution Prevention Plan (SWPPP) during project design; provide SWPPP to the project awarded contractor before Notice to Proceed. (UDOT)**
2. **Comply with CGP, by finalizing the SWPPP before beginning any earth disturbing activities and submit Notice of Intent (NOI); implement and maintain the project SWPPP according to CGP requirements throughout project construction. (Awarded Contractor)**

## Federal Emergency Management Agency (FEMA) Floodplains:

FEMA floodplains are not mapped within the project limits.

**Mitigation Commitments:**

**None**

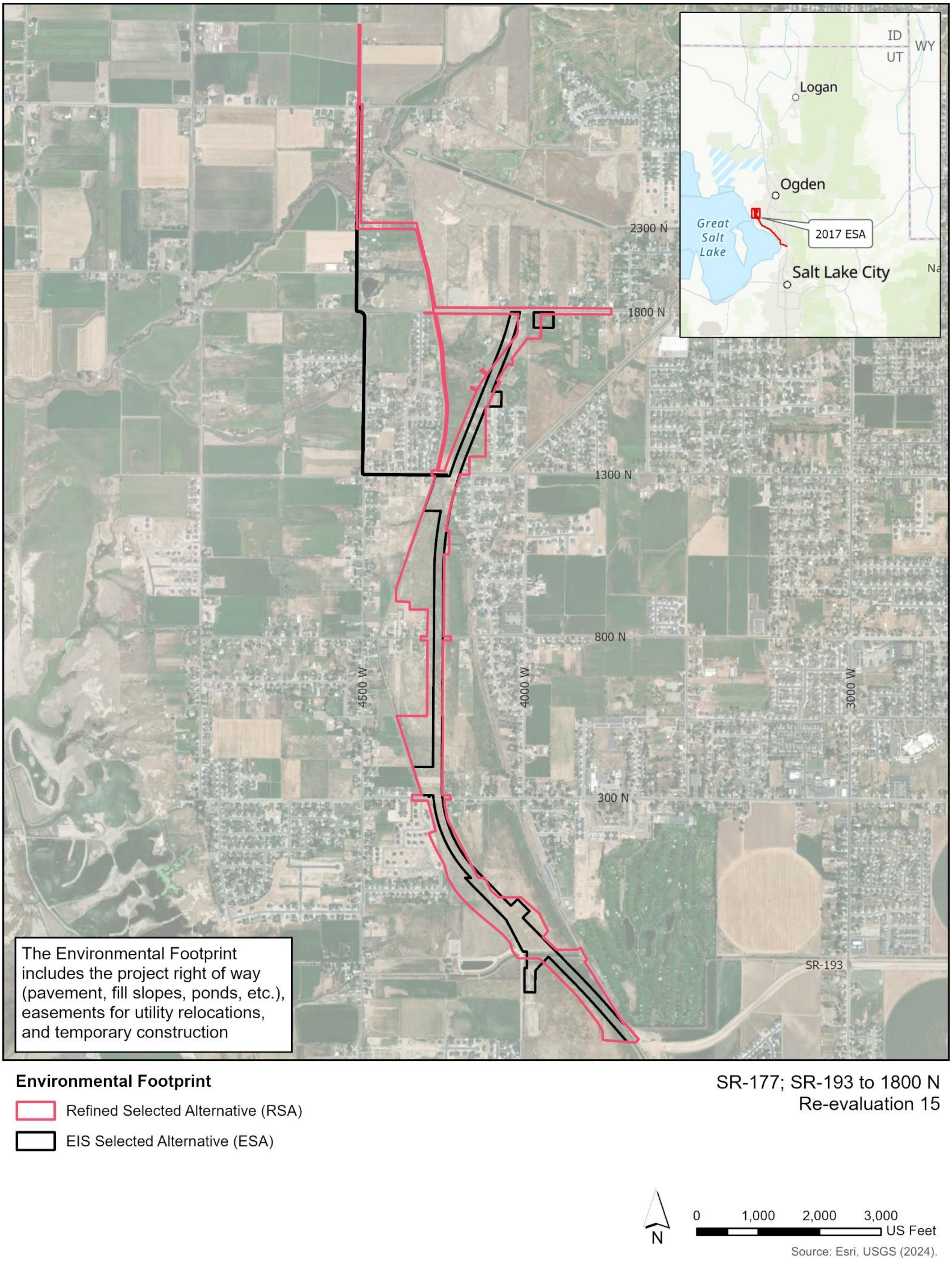
## Invasive and Noxious Weeds:

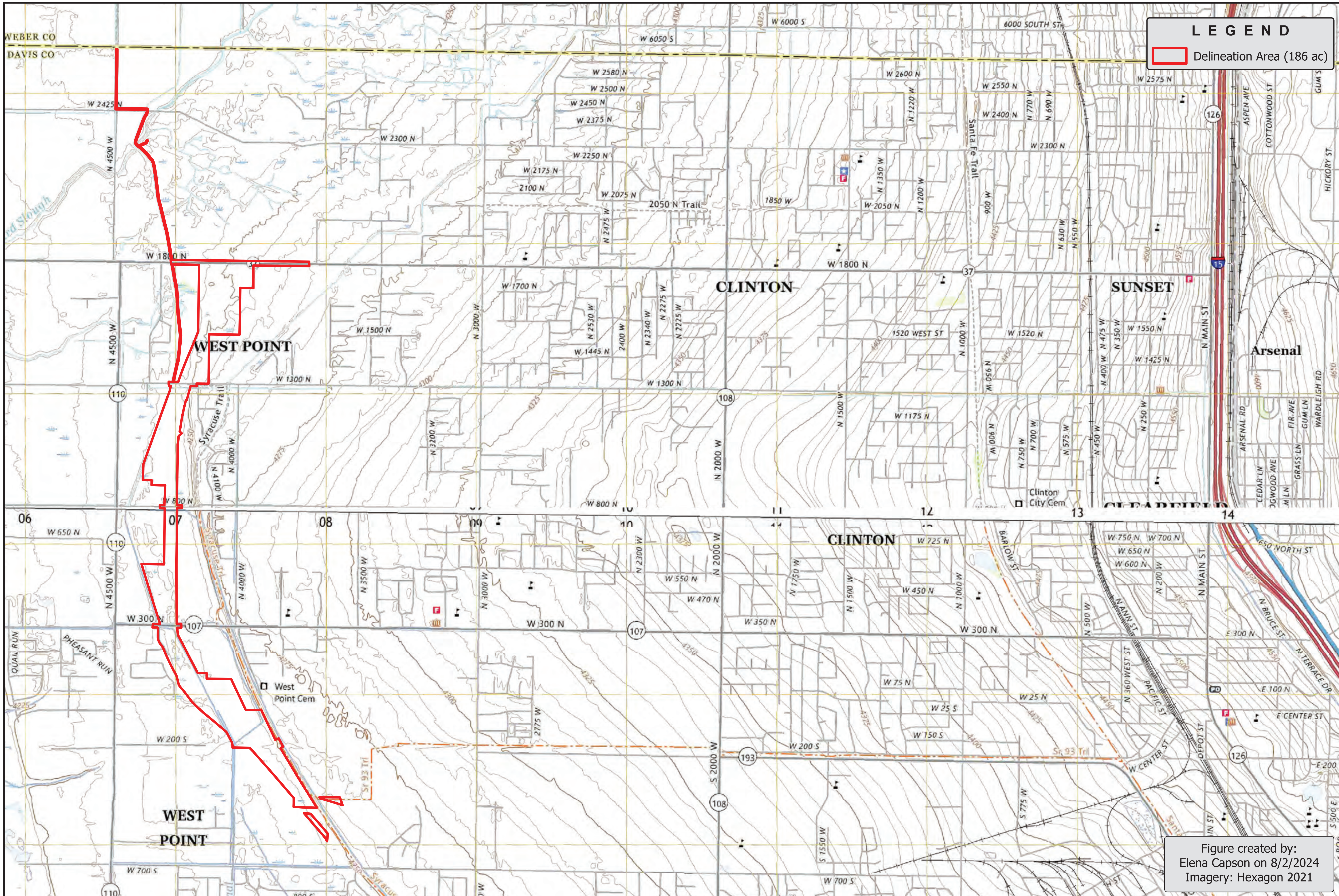
To reduce the introduction and spread of noxious weed species and to comply with Utah Noxious Weed Act (Utah Administrative Code, Rule R68-9), the project is required to: (1) properly clean earthmoving construction equipment before mobilizing onto site as required in UDOT General Provision Section 01355 (ENVIRONMENTAL COMPLIANCE) and (2) treat any noxious weeds found on the project as as required in UDOT Standard Section 02924 (NOXIOUS WEED CONTROL).

**Mitigation Commitments:**

1. **Include UDOT Standard Section 02924 (NOXIOUS WEED CONTROL) in the contract documents to require identify and treat all noxious weeds found on the project site. (UDOT)**
2. **Comply with UDOT General Provision Section 01355 (ENVIRONMENTAL COMPLIANCE) and Standard Section 02924 (NOXIOUS WEED CONTROL). (Awarded Contractor)**

*Figure 1 Site Map*






SCALE: 0 750 1,500 Feet

NORTH: NORTH

SITE LOCATION

UDOT

WDC SR-177, SR-193 TO 1800 N

BOWEN COLLINS & ASSOCIATES

FIGURE NO.

1B

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 8/2/2024

# WDC SR-177 Phase II (PIN 20927): SR-193 to 1800 North Aquatic Resources Report SPK-2007-01985

**Prepared for:**

Keeping Utah Moving


Attn: Rod Hess
4501 South 2700 West
Taylorsville, UT 84129
(801) 830-9589


**Prepared by:**


BOWEN COLLINS & ASSOCIATES

154 East 14075 South
Draper, UT 84020
801-495-2224


**December 2024**

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# EXECUTIVE SUMMARY

The West Davis Corridor Phase II: SR-177, SR-193 to 1800 North aquatic resource delineation was conducted according to the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Arid West Supplement (USACE 2008).

A total of 195 acres were surveyed as part of this delineation. During this delineation, 38 aquatic resources were identified, for a total of 31.70 acres of wetlands, 5.01 acres of ponds, 7,322 linear feet of drainages/canals, and 34 linear feet of streams. The aquatic resources identified in the project area are classified as PEM (Palustrine, Emergent), PUB3C (Palustrine, Unconsolidated Bottom, Mud, Seasonally Flooded), PUB3Cx (Palustrine, Unconsolidated Bottom, Mud, Seasonally Flooded, Excavated), PUB3Hx (Palustrine, Unconsolidated Bottom, Mud, Permanently Flooded), R2UB3Cx (Riverine, Lower Perennial, Unconsolidated Bottom, Mud, Seasonally Flooded, Excavated), R2UB3C (Riverine, Lower Perennial, Unconsolidated Bottom, Mud, Seasonally Flooded), R2UB3H (Riverine, Lower Perennial, Unconsolidated Bottom, Mud, Permanently Flooded), R4SB5C (Riverine, Intermittent, Streambed, Mud, Seasonally Flooded), R4SB5Cx (Riverine, Intermittent, Streambed, Mud, Seasonally Flooded, Excavated), R4SBKx (Riverine, Intermittent, Streambed, Artificially Flooded, Excavated), and R4SB5Kx (Riverine, Intermittent, Streambed, Mud, Artificially Flooded, Excavated) according to the NWI classification system. The condition of these resources was typical at the time of the delineation.

## INTRODUCTION

This document presents results of a delineation of aquatic resources conducted for the Utah Department of Transportation (UDOT) by Bowen Collins & Associates (BC&A) at the West Davis Corridor Phase II: SR-177, SR-193 to 1800 North Site in Davis County, Utah. UDOT is planning to expand the West Davis Corridor within the project area. The purpose of this delineation is to identify all aquatic resources present within the project boundary.

## SITE LOCATION AND METHODOLOGY

The delineation area is located in Davis County, Utah, Sections 5 and 6 of Township 4 North, Range 2 West, and Sections 19, 29, 30, 31, and 32 of Township 5 North Range 2 West. Directions to the site are as follows: from Bountiful, head north on I-15 for about 3.5 miles. Next, take a slight right onto SR-177/West Davis Corridor. Continue for about 16 miles. The south end of the project area begins where SR-177 turns to become SR-193 (See Site Location Figures, Appendix A).

The area delineated is approximately 195 acres of land primarily used as rural pasture. Surrounding this open agricultural space are developed residential areas, which occasionally cross into the delineation area due to the steady urbanization throughout Davis County. This area begins at the northernmost end of the existing portion of the West Davis Corridor, where it merges with SR-193. The delineation area then continues north, ending just past the intersection of 2425 North and 4500 West. A portion of the Old Emigrant and Jensen Nature Park Trail follow an extent of this area, which connects to both the Syracuse Trail and the Bluff Trail. All of these are paved multi-use trails. Besides those trails and bisecting roadways, the delineation area covers private property not accessed by the public. There is no interstate or foreign commerce taking place on or within the delineated wetlands.

Field work for this delineation was conducted on May 13, 14, 16, and 22 and July 25 of 2024, by Merissa Davis, Cara Glabau, and Elena Capson of BC&A. The total area delineated was approximately 195 acres and this entire area was observed during the site visits. Field conditions during the survey were clear and the area had not received much precipitation for several days prior. In general, annual precipitation was higher than normal for this time of year, potentially influencing hydrological conditions throughout the delineation area (see Antecedent Precipitation Figure, Appendix I). Although wetter than typical conditions were present at the time of the delineation, all wetlands and aquatic resources were still clearly identified.

The custom soil report for Davis-Weber Area, Utah (NRCS 2024a) was used to determine soil types for the area. National Wetlands Inventory (NWI) data was also examined to obtain the location of possible aquatic resources on the site (see NWI figure, Appendix E). The aquatic resource delineation was conducted according to the Corps of Engineers Wetlands Delineation Manual (USACE 1987), Arid West Supplement (USACE 2008), with a minimum of one sampling point per wetland area. Upland points were also sampled to further confirm wetland boundaries. Sample point data was recorded electronically in the field with Ecobot software. A total of 83 points were sampled to delineate the wetlands on the site, and these were sufficient to determine the location of the wetland boundaries. Points and boundaries were recorded using ArcGIS Field Maps connected with a Bad Elf or a Trimble R1 GPS receiver for sub-meter accuracy.

Based on the Wetlands Delineation Manual, wetlands are identified using three delineation criteria. These criteria include (1) hydrophytic vegetation, which is vegetation that prefers wet growing conditions, (2) wetland hydrology, which is typically classified as being saturated within 12 inches of the surface for 14 consecutive days in the growing season, and (3) hydric soils which form unique characteristics when regularly saturated, flooded, or ponded. All three indicators must be present to meet wetland delineation criteria to qualify as a wetland, except in cases where a two-factor approach may be applied. According to the Arid West Supplement, in some situations with problematic vegetation, soils, or hydrology, two of the three criteria may suffice to qualify as a wetland. A detailed explanation of these wetland criteria follows.

### Hydrophytic Vegetation

Hydrophytic plants are plants that are adapted to wet conditions. The National Wetland Plant List for the Arid West Region (USACE 2012) was used to determine the wetland indicator status of dominant plant species encountered on sample plots. Sight-identification was used to determine most plant species. Problematic hydrophytic vegetation that may qualify for the two-factor approach includes temporary shifts in vegetation, sparse vegetation, riparian areas, grazing areas, managed areas, and flood areas.

### Wetland Hydrology

Wetland hydrology is present when an area is inundated either permanently or periodically, or the soil is saturated to the surface for 14 or more consecutive days at some time during the growing season of the prevalent vegetation. Primary hydrologic indicators also include high water tables, oxidized root channels, and sediment or drift deposits. Common secondary hydrologic indicators include watermarks, drainage patterns, and the FAC-neutral test. Wetlands that periodically lack indicators for wetland hydrology may apply the two-factor approach during problematic conditions such as periods with below-normal rainfall, drought years, and years with unusually low winter snowpack.

### Hydric Soils

In Field Indicators of Hydric Soils in the U.S. (NRCS 2010) the Natural Resources Conservation Service (NRCS) defines hydric soils as soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the top 12 to 20 inches of soil, depending on soil texture. Hydric properties of soils were assessed using a spade to excavate the soil pit, and a CAPSURE color matching instrument was used to determine the Munsell soil color of the soils at each sample point. Problematic hydric soils that may qualify for the two-factor approach includes alkaline soils, volcanic ash, gravel bars, and recently developed wetlands.

## RESULTS

### Vegetation

The delineation area is approximately a mile east of the marshes that surround the Great Salt Lake. Proximity to the lake increases the height of ground water which makes it more accessible to hydrophytic vegetation. Hydrophytic vegetation was consistent throughout both upland and wetland areas, but dominance and variety of these plant communities increased in delineated wetlands. Upland areas are dominated by upland grasses such as wall barley, intermediate wheatgrass, and Kentucky bluegrass as well as Baltic rush, which is found throughout the site. Wetlands typically have a mix of reed canary grass, cattails, salt grass, rushes, and sedges. Dominant plants that occur at the sampling locations are listed in Table 1 on the next page.

Vegetation was identified primarily based on flowering parts and structural characteristics. Vegetation data collected and photos of the general vegetation for each sample point can be found in the Wetland Determination Data Forms (see Appendix C).

**Table 1**
**Dominant Plants Observed within the Delineation Area**

| Latin Binomial | Common Name | Region 8 Indicator Status |
|---|---|---|
| *Carex nebrascensis* | Nebraska Sedge | OBL |
| *Carex rostrata* | Swollen Beaked Sedge | OBL |
| *Eleocharis obtuse* | Blunt Spike-Rush | OBL |
| *Eleocharis palustris* | Common Spike-Rush | OBL |
| *Schoenoplectus acutus* | Hardstem Bullrush | OBL |
| *Schoenoplectus americanus* | Chairmakers Bullrush | OBL |
| *Typha latifolia* | Broadleaf Cattail | OBL |
| *Calamagrostis canadensis* | Bluejoint | FACW |
| *Carex praegracilis* | Clustered Field Sedge | FACW |
| *Conium maculatum* | Poison Hemlock | FACW |
| *Phalaris angusta* | Timothy Canary Grass | FACW |
| *Juncus balticus* | Baltic Rush | FACW |
| *Phalaris arundinacea* | Reed Canary Grass | FACW |
| *Phragmites australis* | Common Reed | FACW |
| *Salix alba* | White Willow | FACW |
| *Distichlis spicata* | Saltgrass | FAC |
| *Elaeagnus angustifolia* | Russian Olive | FAC |
| *Festuca rubra* | Red Fescue | FAC |
| *Hordem jubatum* | Foxtail Barley | FAC |
| *Leymus triticoides* | Beardless Lyme Grass | FAC |
| *Poa pratensis* | Kentucky Bluegrass | FAC |
| *Rumex crispus* | Curly Dock | FAC |
| *Trifolium fragiferum* | Strawbery-Head Clover | FAC |
| *Bromus inermis* | Smooth Brome | FACU |
| *Cirsium vulgare* | Bull Thistle | FACU |
| *Helianthus annuus* | Common Sunflower | FACU |
| *Hordeum murinum* | Wall Barley | FACU |
| *Lactuca serriola* | Prickly Lettuce | FACU |
| *Melilotus officinalis* | Yellow Sweet Clover | FACU |
| *Sarcobatus vermiculatus* | Greasewood | FACU |
| *Taraxacum officinale* | Common Dandelion | FACU |
| *Bromus tectorum* | Cheatgrass | UPL |
| *Convolvulus arvensis* | Field Bindweed | UPL |
| *Lepidium campestre* | Field Pepperweed | UPL |
| *Lolium arundinaceum* | Tall Fescue | UPL |
| *Rhynchospora nivea* | Showy Whitetop | UPL |
| *Thinopyrum intermedium* | Intermediate Wheatgrass | UPL |

*Indicator Status:
OBL = occurs in aquatic resources > 99% of time
FACW = occurs in aquatic resources 67-99% of time
FAC = occurs in aquatic resources 34-66% of time
FACU = occurs in aquatic resources 1-33% of time
UPL = occurs in uplands > 99% of time
(Note: Hydrophytic plant species are shaded gray)

### Hydrology

The hydrology of the site is the result of high ground water, stormwater drainage, and irrigation practices. Multiple ditches and waterways are present throughout the delineation area to support both the local stormwater drainage system and irrigation requirements (see Appendix B and Additional Photos, Appendix G).

Irrigation practices within the delineation area contribute to a large number of waterways, such as ditches or canals, that are artificially controlled and intermittent. These are often used for water to be turned out for flood irrigation practices, and any excess water drains into the local storm drain system. Many pastures with active irrigation have more hydrophytic vegetation than other uplands areas due to the artificial source of intermittent hydrology. Areas with artificially controlled irrigation flood practices would likely quickly dry out and match nearby upland areas if irrigation ceased.

In general, the area delineated exhibits high groundwater. Many areas with topographical depressions seasonally pond from this high groundwater, with no additional sources of consistent hydrology. This high groundwater is also the primary hydrology in many wetlands throughout the delineation area.

Both the Hooper Canal and Howard Slough cross through the delineation area, but no discharges from these waterways were observed during the field work to contribute to hydrology within the delineated wetlands. Water from some wetlands drain from these wetlands into the Howard Slough and other unnamed waterways which continue onto the Great Salt Lake.

Ditches, which are man-made and convey both irrigation water and storm water runoff, throughout the delineation area are identified in the delineation results figures (Appendix B) but not classified as aquatic resources because these are extensions of the piped storm drain system and are of the type of ditches not commonly regulated themselves as waters of the United States. This network of piped drainages occasionally opens to collect stormwater and irrigation runoff, typically alongside roads. These ditches have no signs of regular hydrology. Several stormwater and irrigation ditches which are generally considered as non-jurisdictional per the Pre-2015 Regulatory Regime are identified on the figures shown in Appendix B but are not numbered or quantified by linear feet or acreage. Unlike these ditches, larger drainages have been included as aquatic resources due to their open water connections to waterways that connect to the Great Salt Lake.

Primary hydrologic indicators at the site included hydrogen sulfide odor, water-stained leaves, surface soil cracks, surface water, high water table, and soil saturation. Secondary indicators often included the FAC-Neutral test. Hydrologic data collected at the sample points can be found in the Wetland Determination Data Forms (see Appendix C). Overall, the ordinary high water marks of all the channels or ponds were clearly identified by changes in vegetation/soil and erosion patterns (see Appendix H for ordinary high water mark data forms).

### Soils

The soils at the site are primarily lacustrine deposits and/or alluvium. The Davis-Weber Area, Utah Soil Survey (NRCS 2024a) was referenced to determine soil types for the area. The following soil types occur within the delineated area:

- Parleys loam, 0-4% slopes, well drained
- Ford loam, shallow water table, 0-1% slopes, poorly drained

- Harrisville silt loam, 0-1% slopes, somewhat poorly drained
- Harrisville-Leland complex, 0-1% slopes, somewhat poorly drained
- Kidman fine sandy loam, 0-1% slopes, well drained
- Kidman fine sandy loam, 10-20% slopes, eroded, well drained
- Parleys loam, 6-10% slopes, well drained
- Syracuse loamy fine sand, 0-2% slopes, somewhat poorly drained
- Syracuse loamy fine sand, moderately saline, sodic, 0-2% slopes, somewhat poorly drained
- Warm Springs fine sandy loam, 0-1% slopes, somewhat poorly drained
- Warm Springs fine sandy loam, saline, sodic, 0-1% slopes, somewhat poorly drained
- Warm Springs fine sandy loam, shallow water table, 0-1% slopes, somewhat poorly drained
- Warm Springs fine sandy loam, 1-3% slopes, somewhat poorly drained

Ford loam and Warm Springs fine sandy loam, 0-1% slopes, as well as Warm Springs fine sandy loam, 1-3%, are classified as hydric on the national and Utah hydric soils lists (NRCS 2015). Soil properties such as texture and Munsell soil color generally matched the soil descriptions found in the Soil Survey for Davis-Weber Area, Utah (NRCS 2024a). Soil data collected, including color and texture, at the sample points along with photos of the soil pits dug at each sample point can be found in the Wetland Determination Data Forms (see Appendix C). Additionally, a custom soil resource report from the NRCS for the site is located in Appendix F.

### Sample Points

Of the 83 sample points taken at the site, 29 points were located in wetlands. The Delineation Results Figure in Appendix B displays the sample point locations and Table 2 below summarizes the sample point data.

**Table 2**
**Wetland Delineation Sample Point Summary and Determination Matrix**

| Sample Point | Hydrophytes Dominant? | Hydric Soils Present? | Hydrologic Indicator(s) Present? | Is the Sample Point in a Wetland? |
|---|---|---|---|---|
| 1 | ✓ | ✓ | ✓ | ✓ |
| 2 | - | - | ✓ | - |
| 3 | ✓ | ✓ | ✓ | ✓ |
| 4 | - | - | ✓ | - |
| 5 | ✓ | ✓ | ✓ | ✓ |
| 6 | ✓ | - | ✓ | - |
| 7 | - | - | - | - |
| 8 | ✓ | - | ✓ | - |
| 9 | - | - | - | - |

| Sample Point | Hydrophytes Dominant? | Hydric Soils Present? | Hydrologic Indicator(s) Present? | Is the Sample Point in a Wetland? |
|---|---|---|---|---|
| 10 | - | - | - | - |
| 11 | ✓ | - | - | - |
| 12 | ✓ | - | ✓ | - |
| 13 | - | - | - | - |
| 14 | - | - | - | - |
| 15 | - | - | - | - |
| 16 | ✓ | ✓ | ✓ | ✓ |
| 17 | - | - | - | - |
| 18 | ✓ | ✓ | ✓ | ✓ |
| 19 | - | - | - | - |
| 20 | ✓ | - | ✓ | - |
| 21 | ✓ | ✓ | ✓ | ✓ |
| 22 | ✓ | - | ✓ | - |
| 23 | ✓ | ✓ | ✓ | ✓ |
| 24 | - | - | - | - |
| 25 | - | - | - | - |
| 26 | ✓ | ✓ | ✓ | ✓ |
| 27 | - | - | - | - |
| 28 | ✓ | ✓ | ✓ | ✓ |
| 29 | ✓ | ✓ | ✓ | ✓ |
| 30 | ✓ | - | ✓ | - |
| 31 | - | - | - | - |
| 32 | ✓ | - | - | - |
| 33 | ✓ | ✓ | ✓ | ✓ |
| 34 | ✓ | ✓ | ✓ | ✓ |
| 35 | - | - | - | - |
| 36 | - | - | - | - |
| 37 | ✓ | - | ✓ | - |
| 38 | - | - | - | - |
| 39 | ✓ | ✓ | ✓ | ✓ |
| 40 | - | - | - | - |
| 41 | ✓ | ✓ | ✓ | ✓ |
| 42 | ✓ | ✓ | ✓ | ✓ |
| 43 | - | - | - | - |
| 44 | ✓ | ✓ | ✓ | ✓ |
| 45 | ✓ | ✓ | ✓ | ✓ |
| 46 | - | - | - | - |
| 47 | ✓ | - | - | - |
| 48 | ✓ | ✓ | ✓ | ✓ |

| Sample Point | Hydrophytes Dominant? | Hydric Soils Present? | Hydrologic Indicator(s) Present? | Is the Sample Point in a Wetland? |
|---|---|---|---|---|
| 49 | - | - | - | - |
| 50 | ✓ | - | - | - |
| 51 | - | - | - | - |
| 52 | ✓ | - | - | - |
| 53 | ✓ | ✓ | ✓ | ✓ |
| 54 | - | - | - | - |
| 55 | ✓ | - | - | - |
| 56 | ✓ | ✓ | ✓ | ✓ |
| 57 | - | - | - | - |
| 58 | ✓ | ✓ | ✓ | ✓ |
| 59 | - | - | - | - |
| 60 | - | - | - | - |
| 61 | ✓ | ✓ | ✓ | ✓ |
| 62 | - | - | - | - |
| 63 | ✓ | ✓ | ✓ | ✓ |
| 64 | - | - | - | - |
| 65 | ✓ | - | ✓ | - |
| 66 | ✓ | ✓ | ✓ | ✓ |
| 67 | - | - | - | - |
| 68 | - | - | - | - |
| 69 | ✓ | - | ✓ | - |
| 70 | ✓ | ✓ | ✓ | ✓ |
| 71 | - | - | - | - |
| 72 | ✓ | ✓ | ✓ | ✓ |
| 73 | - | - | - | - |
| 74 | - | - | - | - |
| 75 | - | - | ✓ | - |
| 76 | ✓ | - | - | - |
| 77 | - | - | - | - |
| 78 | ✓ | ✓ | ✓ | ✓ |
| 79 | - | - | - | - |
| 80 | - | - | - | - |
| 81 | ✓ | ✓ | ✓ | ✓ |
| 82 | - | - | - | - |
| 83 | ✓ | ✓ | ✓ | ✓ |

### Wetland Boundaries

Throughout the delineation area a variety of aquatic resources are present, all with varying vegetation, soils, sources of hydrology, and connections to outside waterways. Overall, the boundaries of these aquatic resources were distinct due to changes in vegetation, hydrology, and topography throughout the site and can be seen in the delineation results figures in Appendix B.

Additionally, the delineation results figures in Appendix B include potential wetlands and waterways extending outside of the delineation area. This is shown to demonstrate potential connections to Waters of the United States. These boundaries were determined by analyzing previous delineation findings, NWI data, aerial imagery, and field observations. All of these boundaries of aquatic resources outside the delineation area have not been verified in the field and represent potential findings.

The spreadsheet on the following pages details the 38 aquatic resources present within the delineation area. These aquatic resources can also be found in the Aquatic Resource Spreadsheet in Appendix D of this report.

| WETLANDS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **W1** | Emergent Marsh Wetland | 0.04 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W1 is an emergent marsh sourced from groundwater. This wetland extends to the north and south of the delineation area, connecting to an open ditch system to the south, which joins the local stormwater drainage system via culvert. There are no connections to other waters or wetlands to the north of the delineation area. The local stormwater drainage system is a fully piped network and appears to end at the North Davis Sewer District facility (water treatment plant). After leaving the plant it eventually discharges into the Great Salt Lake. Although this wetland may at times connect via a piped system and through the treatment plant to downstream Waters of the U.S. it does not have a continuous surface water connection (multiple miles of underground piping), nor does it have a relatively permanent flow (storm events and/or irrigation overflow). | May not be jurisdictional | SP29 |
| **W2** | Emergent Marsh Wetland | 7.55 ac | PEM | A7-AJD.WETL-404 | Wetland W2 is an emergent marsh sourced from groundwater and stormwater runoff from an abutting ditch and adjacent drainage systems via culverts. The area was saturated to the surface with some areas of standing water. The vegetation community becomes more complex in areas with more water to the east and is dominant with rushes to the west where elevations slightly rise with less consistent standing water. This wetland drains into a stormwater drainage channel (D1) which continues through the delineation area before discharging into a larger open drainage channel (D2) which eventually connects to waters associated with the Great Salt Lake. Based on these connections, wetland W2 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP28 |
| **W3** | Wet Meadow Wetland | 2.24 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W3 is a wet meadow sourced from high groundwater. Vegetation is primarily rushes and grasses planted for previous agricultural grazing. Any potential surface flows between wetland W3 and nearby waters to the north and east is restricted by a berm, isolating this aquatic resource. No discrete features such as pipes, swales, or culverts were identified to connect this wetland to any other nearby waters or wetlands. Previously, this wetland was connected to wetland W2, but has in recent years been fully separated by a road and berm (not related to this project). Based on this, wetland W3 has no continuous surface water connections to any Waters of the U.S. | May not be jurisdictional | SP23; SP26 |
| **W4** | Wet Meadow Wetland | 0.63 ac | PEM | A7-AJD.WETL-404 | Wetland W4 is a wet meadow, almost entirely dominant with rushes and located in a depression which briefly connects to a stormwater drainage channel (D1). This wetland is located at the toe of a slope, where hydrology collects from snowmelt and stormwater runoff. The surface water connection between wetland W4 and the adjacent drainage channel (D1) is continuous and based on its downstream connection to a larger open drainage channel (D2), eventually connects to waters associated with the Great Salt Lake. Based on these connections, wetland W4 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP18 |
| **W5** | Phragmites Emergent Marsh | 0.43 ac | PEM | A7-AJD.WETL-404 | Wetland W5 abuts wetland W4 but is dominant with *Phragmites australis*, separating the two wetlands based on these distinct changes in vegetation communities. This wetland is located on a slope and receives hydrology from snowmelt and stormwater runoff as it drains into the wetland below. This wetland has a continuous surface water connection to wetland W4, which has a continuous surface water connection to drainages (D1 and D2) which eventually connect to waters associated with the Great Salt Lake. Based on these connections, wetland W5 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP21 |

| WETLANDS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **W6** | Wet Meadow Wetland | 1.57 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W6 is a wet meadow dominant with rushes and planted grasses for cattle grazing. This wetland has developed in a slight depression in this field, spanning along a fence line to the west where wetland vegetation is still dispersed throughout the site, but all sample points taken on the west side of the fence did not qualify as wetlands, defining this boundary. The hydrology of this wetland is from high groundwater, stormwater runoff, and irrigation pooling, which drains into the adjacent wetland (W7) which is topographically lower than wetland W6. The boundary between these two wetlands was determined by a difference in vegetation and hydrology patterns. The drained waters from Wetland W6 flows through Wetland W7 which continues outside of the delineation area before entering a culvert directly to the south of 300 North, where it enters the storm drain system. The local stormwater drainage system is a fully piped network and appears to end at the North Davis Sewer District facility (water treatment plant). After leaving the plant it eventually discharges into the Great Salt Lake. Although this wetland may at times connect via a piped system and through the treatment plant to downstream Waters of the U.S. it does not have a continuous surface water connection (multiple miles of underground piping), nor does it have a relatively permanent flow (storm events and/or irrigation overflow). | May not be jurisdictional | SP1; SP16 |
| **W7** | Emergent Marsh Wetland | 0.39 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W7 is an emergent marsh which is sourced from both irrigation runoff and high ground water. Vegetation within this wetland is diverse and varies based on the levels of inundation. This wetland is a depression that acts as a swale, which begins very shallow in the fields to the west, collecting any irrigation runoff from these surrounding fields, draining to the northeast before turning to the north. At the time of the delineation this wetland had areas of standing and very slow-moving water, continuing to the north outside the delineation area where it drains into a culvert directly to the south of 300 North, where it enters the storm drain system. The local stormwater drainage system is a fully piped network and appears to end at the North Davis Sewer District facility (water treatment plant). After leaving the plant it eventually discharges into the Great Salt Lake. Although this wetland may at times connect via a piped system and through the treatment plant to downstream Waters of the U.S. it does not have a continuous surface water connection (multiple miles of underground piping), nor does it have a relatively permanent flow (storm events and/or irrigation overflow). | May not be jurisdictional | SP3 |
| **W8** | Wet Meadow Wetland | 1.09 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W8 is a wet meadow similar to W6, but on the opposite side of W7. It is dominant with rushes and planted grasses for cattle grazing. This wetland has developed in a slight depression in this field, spanning along a fence line to the west where wetland vegetation is still dispersed throughout the site, but all sample points taken on the west side of the fence did not qualify as wetlands, defining this boundary. Wetland conditions appear to span to the north outside the delineation area, but these boundaries were not confirmed during the delineation field work. The hydrology of this wetland is from high groundwater and stormwater runoff, draining into the adjacent wetland (W7) which is topographically lower than wetland W8. Any water draining from Wetland W8 flows through Wetland W7 which continues outside of the delineation area before entering a culvert directly to the south of 300 North, where it enters the storm drain system. The local stormwater drainage system is a fully piped network and appears to end at the North Davis Sewer District facility (water treatment plant). After leaving the plant it eventually discharges into the Great Salt Lake. Although this wetland may at times connect via a piped system and through the treatment plant to downstream Waters of the U.S. it does not have a continuous surface water connection (multiple miles of underground piping), nor does it have a relatively permanent flow (storm events and/or irrigation overflow). | May not be jurisdictional | SP5 |

| WETLANDS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **W9** | Wet Meadow Wetland | 1.31 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W9 is a wet meadow developed in a slight depression sourced from high ground water and stormwater runoff. This wetland is dominant with sedges and rushes and boundaries of the wetland can be defined by that distinction in this vegetation. No discrete features such as pipes, swales, or culverts were identified to connect this wetland to any other nearby waters or wetlands. Wetland W9 has no continuous surface water connections to any other aquatic resources or Waters of the U.S. | May not be jurisdictional | SP41 |
| **W10** | Emergent Marsh Wetland | 5.78 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W10 is an emergent marsh with a varied plant community that appears to span outside the delineation area to the east, but these boundaries were not confirmed during the delineation field work. This wetland is in a depression with dispersed areas of shallow standing water. Mucky soils and strong odors of hydrogen sulfide were present at the time of the delineation field work. This wetland is seasonally flooded from a mix of high ground water and stormwater runoff and based on aerial imagery likely dries out later in the growing season. This wetland drains into two ponds (OW1 and OW2) both of which do not have any continuous surface water connections to any other aquatic resources. No discrete features such as pipes, swales, or culverts were identified to connect this wetland to any other nearby waters or wetlands. Based on this, wetland W10 has no continuous surface water connections to any Waters of the U.S. | May not be jurisdictional | SP33; SP34; SP42; SP44; SP45 |
| **W11** | Emergent Marsh Wetland | 1.95 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W11 is an emergent marsh that was flooded at the time of the delineation field work. This wetland directly abuts wetland W10, with the boundary defined by the area of significant inundation. Flood conditions appear to be seasonal based on the vegetation growing within this wetland, likely having similar conditions to the adjacent wetland later in the growing season. Water from this wetland expands into the adjacent wetlands (W12) and nearby pond (OW1), both of which do not have any continuous surface water connections to any other aquatic resources. No discrete features such as pipes, swales, or culverts were identified to connect this wetland to any other nearby waters or wetlands. Based on this, wetland W11 has no continuous surface water connections to any Waters of the U.S. | May not be jurisdictional | N/A |
| **W12** | Emergent Marsh Wetland | 3.06 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W12 is comprised of historically placed fill material which seasonally floods. This material has created large mounds with upland vegetation growing above the waters. Between these mounds is a large network of connected seasonal standing water and wetlands. This wetland abuts a ponded area (OW1) and flooded emergent marsh wetland (W11). The hydrology between these resources is all directly connected, none of which have any continuous surface water connections to any other aquatic resources outside this isolated system. No discrete features such as pipes, swales, or culverts were identified to connect this wetland to any other nearby waters or wetlands. Based on this, Wetland W12 has no continuous surface water connections to any Waters of the U.S. | May not be jurisdictional | N/A |
| **W13** | Phragmites Emergent Marsh | 0.10 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W13 is an emergent marsh dominant with *Phragmites australis*. This wetland is a roadside depression that has been excavated to hold stormwater runoff before draining into the storm drain system via culvert. This area is seasonally saturated or flooded from storm events and annual runoff. The consistent hydrology supports the dense growth of *Phragmites australis*. This wetland has a culverted connection to the local storm drain system but no other continuous surface water connections. The local stormwater drainage system is a fully piped network and appears to end at the North Davis Sewer District facility (water treatment plant). After leaving the plant it eventually discharges into the Great Salt Lake. Although this wetland may at times connect via a piped system and through the treatment plant to downstream Waters of the U.S. it does not have a continuous surface water connection (multiple miles of underground piping), nor does it have a relatively permanent flow (storm events and/or irrigation overflow). | May not be jurisdictional | SP39 |

| WETLANDS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **W14** | Emergent Marsh Wetland | 0.13 ac | PEM | A7-AJD.WETL-404 | Wetland W14 is an emergent marsh that follows the alignment of the service road for the Hooper Canal and spans outside the delineation area into agricultural lands. This wetland has developed in a depression, collecting high groundwater, irrigation runoff, and stormwater runoff from the surrounding fields. The greater extent of this wetland had inundated areas at the time of the delineation field work which slowly flows through a culvert to a nearby wetland (W15). This adjacent wetland drains into an open drainage channel (D4), which eventually connects to waters associated with the Great Salt Lake. Based on these connections, wetland W14 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP72 |
| **W15** | Emergent Marsh Wetland | 2.10 ac | PEM | A7-AJD.WETL-404 | Wetland W15 is an emergent marsh that spans from the access road for the Hooper Canal to the west and to a residential property on the east. This wetland has developed in a depression, collecting high groundwater, irrigation runoff, and stormwater runoff. Water flows through this wetland through two drainage channels (D9 and D10) which convey overflow from the nearby ponds (OW3 and OW4). These channels appear to seasonally flood portions of this wetland as well as provide continuous hydrology which drains via culvert into an open drainage channel (D4). This drainage channel eventually connects to waters associated with the Great Salt Lake. Based on these connections, wetland W15 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP70 |
| **W16** | Emergent Marsh Wetland | 0.63 ac | PEM | A7-AJD.WETL-404 | Wetland W16 is an emergent marsh that spans from a drainage channel (D9) in a depression. This wetland collects water that overflows from pond OW4 through an undefined ditch which loops through the wetland before discharging into the adjacent drainage channel (D9). This drainage channel continues through nearby wetlands before draining into an open drainage channel (D4), which eventually connects to waters associated with the Great Salt Lake. Based on these connections, wetland W16 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP66 |
| **W17** | Emergent Marsh Wetland | 0.16 ac | PEM | A7-AJD.WETL-404 | Wetland W17 is an emergent marsh which has developed in a depression. This wetland is sourced from high ground water and intermittent irrigation runoff. Areas of inundation within the wetland were present at the time of the delineation field work. This wetland drains into the adjacent drainage channel (D5), which discharges into the nearby pond (OW4) via culvert. This pond has a continuous surface water connection to drainages (D4) that connect to water associated with the Great Salt Lake. Based on these connections, wetland W17 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP61 |
| **W18** | Emergent Marsh Wetland | 0.52 ac | PEM | A7-AJD.WETL-404 | Wetland W18 is an emergent marsh which has developed in a depression alongside two drainages. This wetland is sourced from high ground water and spillover from the two adjacent drainages (D5 and D7). This wetland shares a continuous surface water connection to both of these drainages, which both discharge into the nearby pond (OW4) via culvert. This pond has a continuous surface water connection to drainages (D4) that connect to water associated with the Great Salt Lake. Based on these connections, wetland W18 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP58 |
| **W19** | Emergent Marsh Wetland | 0.13 ac | PEM | A7-AJD.WETL-404 | Wetland W19 is an emergent marsh located along the bank of pond OW4. This wetland is at the base of a slope from a roadway to the east, collecting any stormwater runoff draining towards the adjacent pond. Hydrology collected within the wetland also drains into the pond. This pond has a continuous surface water connection to drainages (D4) that connect to water associated with the Great Salt Lake. Based on these connections, wetland W19 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP56 |

| WETLANDS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **W20** | Emergent Marsh Wetland | 0.47 ac | PEM | A7-AJD.WETL-404 | Wetland W20 is an emergent marsh located along the bank of pond OW4. This wetland is at the base of a slope from a roadway and agricultural properties to the east, collecting any stormwater runoff draining towards the adjacent pond. A culvert also crosses under the roadway, draining fields to the east into this wetland. Hydrology collected within the wetland also drains into the pond. This pond has a continuous surface water connection to drainages (D4) that connect to water associated with the Great Salt Lake. Based on these connections, wetland W20 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP48 |
| **W21** | Emergent Marsh Wetland | 0.11 ac | PEM | A7-AJD.WETL-404 | Wetland W21 is an emergent marsh located along the bank of pond OW4. This wetland is at the base of a slope along the bank of the adjacent pond. Based on the low elevation of this wetland, it appears to seasonally flood from the pond. This wetland has a direct connection to the adjacent pond, which has a continuous surface water connection to drainages (D4) that connect to water associated with the Great Salt Lake. Based on these connections, wetland W21 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP63 |
| **W22** | Emergent Marsh Wetland | 0.52 ac | PEM | A7-AJD.WETL-404 | Wetland W22 is a depression with a pooling of high ground water, with inundation at the lowest point. This inundation level appears to be consistent based on the obligate vegetation growing at this lower point of the depression. Vegetation varied throughout the wetland but is also significantly disturbed from goat activity. Part of this wetland is located within a goat pen, and most areas that were not flooded have been eaten down dramatically, but vegetation was still identifiable at the sample point locations. A culvert continually drains the water from this wetland into the nearby pond (OW4) and this pond has a continuous surface water connection to drainages (D4) that connect to water associated with the Great Salt Lake. Based on these connections, wetland W22 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | SP53 |
| **W23** | Emergent Marsh Wetland | 0.48 ac | PEM | NON-WOTUS.WETL. NEGATIVE-A7 | Wetland W23 is comprised of historically placed fill material which seasonally floods. This material has created large mounds with upland vegetation growing above the waters. Between these mounds is a large network of connected seasonal standing water and wetlands. This wetland abuts a ponded area (OW1) and flooded emergent marsh wetland (W11). The hydrology between these resources is all directly connected, none of which have any continuous surface water connections to any other aquatic resources outside this isolated system. No discrete features such as pipes, swales, or culverts were identified to connect this wetland to any other nearby waters or wetlands. Based on this, Wetland W23 has no continuous surface water connections to any Waters of the U.S. | May not be jurisdictional | N/A |

| DRAINAGE CHANNELS / DITCHES / CANALS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **D1** | Stormwater Drainage Channel | 1340 FT | R4SB5Cx | A5.TRIB-404 | The stormwater drainage channel D1 is an intermittent drainage with seasonal flows. This drainage canal was excavated and constructed as part of the local storm drain system. At the time of the delineation there was flowing water due to the drainage from a culvert under the adjacent trail, discharging stormwater, as well hydrology draining from abutting wetlands (W2 and W4). Although intermittent and dictated by seasonal and storm runoff, this drainage receives enough hydrology to have a clear ordinary high water mark, which was observed by a distinct transition between thick grasses to an absence of vegetation at the ordinary high water mark. This drainage discharges into a larger open stormwater drainage canal (D2) via culvert which has a continuous surface water connection to waters associated with the Great Salt Lake. Based on these connections, stormwater drainage channel D1 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | N/A |
| **D2** | Stormwater Drainage Canal | 967 FT | R2UB3Cx | A5.TRIB-404 | The stormwater drainage canal D2 is a lower perennial channel with varied flows from stormwater and seasonal runoff. This drainage canal was excavated and constructed as part of the local storm drain system and has hydrology year-round with higher flows in the spring and summer. The ordinary high water mark was clear based on bent vegetation in the path of flows as well as a change in vegetation type at this point along the bank. Exposed rocks along a scour line also distinguished continuous flow levels. This canal receives hydrology from two culverts that come from the east, connected to underground stormwater systems. Water continues to the west outside of the delineation area via culvert into another open section of the canal. The canal continues to the west, culverted under roadways but primarily open, until draining into waters associated with the Great Salt Lake. Based on these connections, stormwater drainage canal D2 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | N/A |
| **D3** | Irrigation Drainage Channel | 1167 FT | R4SB5Kx | NON-JD-RAPANOS.GUIDE - DITCH | The irrigation drainage channel D3 is an intermittent, artificially controlled drainage used for adjacent irrigation purposes. This channel appears to get diverted in areas to flood fields and is culverted in sections to pass under driveways. Flows are infrequent enough that there is no ordinary high water mark present along this channel, but hydrology was active at the time of the delineation. Any water remaining after the water from this channel is used drains into the stormwater drainage system along 300 North. Although this irrigation drainage channel connects to the local stormwater drainage system, this network is piped and flows from this channel are not continuous over a two-week period, and therefore there is no continuous surface water connection to Waters of the U.S. | May not be jurisdictional | N/A |
| **D4** | Drainage Channel | 57 FT | R4SB5C | A5.TRIB-404 | Drainage channel D4 is an intermittent drainage with seasonal flows from nearby drainages. Drainages that span from a nearby pond (W26) flow and pool through nearby wetlands (W15 and W16) before draining into D4 via culverts. This drainage channel pools before being culverted under the concrete-lined Hooper Canal and continuing outside the delineation area to the west. A distinct ordinary high water mark is clear based on changes in vegetation, indicating regular flows throughout the growing season. Based on this, drainage channel D4 has a continuous surface water connection into waters associated with the Great Salt Lake. | May be jurisdictional | N/A |

| DRAINAGE CHANNELS / DITCHES / CANALS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **D5** | Irrigation Drainage Channel | 1885 FT | R4SB5Kx | A5.TRIB-404 | The irrigation drainage channel D5 is an intermittent, artificially controlled drainage, which has been excavated and continually used for adjacent irrigation purposes. This channel appears to collect and drain runoff irrigation water from fields to the west. Flows are occasional enough that there is no ordinary high water mark present along this channel, but hydrology was active at the time of the delineation. Water discharges into both an open field and an adjacent pond (OW4) via culvert. This pond has a continuous surface water connection to a drainage channel (D4) that connects to water associated with the Great Salt Lake. Based on these connections, irrigation drainage channel D5 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | N/A |
| **D6** | Hooper Canal | 159 FT | R4SBKx | NON-WOTUS-STREAM.NEGATIVE-A5 | Hooper Canal (D6) is a concrete lined irrigation canal which conveys irrigation water for various users to utilize for agricultural purposes. This canal has artificially controlled flows from the Weber River and is intermittent in nature, lacking flows outside the growing season. The Hooper Canal is primarily open and fully concrete-lined, being culverted under roads and crosses the delineation area in two locations. It flows south until being permanently piped at 300 North. This piped portion of the Hooper Canal continues for approximately two miles to Antelope Drive where it connects into the local storm drain system. The local stormwater drainage system is a fully piped network and appears to end at the North Davis Sewer District facility (water treatment plant). After leaving the plant it eventually discharges into the Great Salt Lake. Although this wetland may at times connect via a piped system and through the treatment plant to downstream Waters of the U.S. it does not have a continuous surface water connection (multiple miles of underground piping), nor does it have a relatively permanent flow (storm events and/or irrigation overflow). | May <u>not</u> be jurisdictional | N/A |
| **D7** | Drainage Channel | 105 FT | R4SB5C | A5.TRIB-404 | Drainage channel D7 is an intermittent channel with seasonal flows from stormwater runoff and irrigation drainage. Flows are occasional enough that there is no ordinary high water mark present along this channel, but hydrology was active at the time of the delineation. Water discharges into an adjacent pond (OW4) via culvert. This pond has a continuous surface water connection to drainages (D4) that connect to water associated with the Great Salt Lake. | May be jurisdictional | N/A |
| **D8** | Drainage Channel | 178 FT | R2UB3C | A5.TRIB-404 | Drainage channel D8 is a perennial drainage sourced from springs located outside the delineation area to the east as well as adjacent irrigation and stormwater runoff that collect in the lower topography. Flows are consistent and an ordinary high water mark was distinct due to changes in soil composition and vegetation types. This drainage enters the delineation area through a culvert which spans to the east, collecting drainage outside the delineation area. It flows to the west before being culverted again into the nearby pond (OW4). This pond continuously overflows into two drainage channels (D9 and D10) which then drain into another channel (D4) via culvert. This drainage eventually discharges into the Great Salt Lake. Based on this, drainage channel D8 has a continuous surface water connection into waters associated with the Great Salt Lake. | May be jurisdictional | N/A |
| **D9** | Drainage Channel | 921 FT | R2UB3C | A5.TRIB-404 | Drainage channel D9 is a perennial drainage sourced from the adjacent pond system (OW3 and OW4), by conveying overflow waters to the west through a wetland (W15) before being discharging into a separate open drainage channel (D4) via culvert. These flows continue to the Great Salt Lake. A distinct ordinary high water mark is clear based on changes in vegetation and soil composition, indicating regular flows throughout the growing season. Based on this, drainage channel D9 has a continuous surface water connection into waters associated with the Great Salt Lake. | May be jurisdictional | N/A |

| DRAINAGE CHANNELS / DITCHES / CANALS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **D10** | Drainage Channel | 268 FT | R2UB3C | A5.TRIB-404 | Drainage channel D10 is a perennial drainage sourced from the adjacent pond system (OW3 and OW4), by conveying overflow waters to the west through a wetland (W15) before being discharging into a separate open drainage channel (D4) via culvert. These flows continue to the Great Salt Lake. A distinct ordinary high water mark is clear based on changes in vegetation and soil composition, indicating regular flows throughout the growing season. Based on this, drainage channel D10 has a continuous surface water connection into waters associated with the Great Salt Lake. | May be jurisdictional | N/A |

| OPEN WATER | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **OW1** | Seasonal Pond | 1.13 ac | PUB3C | NON-WOTUS-LAKE.POND. NEGATIVE-A5 | Pond OW1 is a seasonally flooded pond that is sourced from high ground water and stormwater runoff. No indicators for an ordinary high water mark were present at the time of the delineation field work. Flood conditions are likely variable and potentially dependent on annual precipitation patterns. Various debris and old concrete are present in this ponded area. This pond abuts the wetlands (W12) to the east as well as the adjacent flooded emergent marsh wetland (W11), emergent marsh wetland (W10), and seasonal pond (OW2). The hydrology between these resources is all directly connected, none of which have any continuous surface water connections to any other aquatic resources outside this isolated system. No discrete features such as pipes, swales, or culverts were identified to connect this pond to any other nearby waters or wetlands. Based on this, pond OW1 has no continuous surface water connections to any Waters of the U.S. | May not be jurisdictional | N/A |
| **OW2** | Seasonal Pond | 0.23 ac | PUB3Cx | NON-WOTUS-LAKE.POND. NEGATIVE-A5 | Pond OW2 is an excavated seasonally flooded pond, likely used for irrigation purposes. There is no inlet or outlet of this pond, but a continuous surface water connection between the pond and wetland W10 is present. The hydrology between these two resources is directly connected, neither of which has any continuous surface water connections to any other aquatic resources outside this isolated system. No discrete features such as pipes, swales, or culverts were identified to connect this pond to any other nearby waters or wetlands. Based on this, pond OW2 has no continuous surface water connections to any Waters of the U.S. | May not be jurisdictional | N/A |
| **OW3** | Pond | 0.08 ac | PUB3Hx | A4.IMPDT-404 | Pond OW3 is a holding pond to drain waters from the adjacent larger pond (OW4) via culverts when the water elevation is high. This pond was excavated for this purpose and is permanently flooded from this overflow as well as high groundwater consistent with the area. The ordinary high water mark was clear due to changes in vegetation and water staining. Flows drain from this pond into two drainages via culvert, which both continue through wetlands (W15 and W16) before discharging into drainages (D4) that connect to waters associated with the Great Salt Lake. Based on these connections, pond OW3 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | N/A |
| **OW4** | Pond | 3.29 ac | PUB3Hx | A4.IMPDT-404 | Pond OW4 is a permanently flooded pond sourced from high ground water, stormwater runoff, and irrigation drainage. This pond is stocked with trout by the current landowner and bird nesting platforms have been installed throughout. This has created a dynamic ecosystem with an abundance of animal activity. The pond was excavated and created to collect drainage waters and then overflow for flood irrigation in the adjacent fields. The ordinary high water mark was clear due to changes in vegetation and water staining. This pond drains into an adjacent pond (OW3) via culvert when pool levels are high enough, which eventually drains drainages (D4) that discharge into waters associated with the Great Salt Lake. Based on these connections, pond OW4 has a continuous surface water connection to Waters of the U.S. | May be jurisdictional | N/A |

| STREAMS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Aquatic Resource** | **General Description** | **Amount** | **Cowardin Code** | **Waters Type** | **Description** | **Jurisdiction Recommendation** | **Associated Sample Points** |
| **S1** | Howard Slough | 34 FT | R2UB3H | A5.TRIB-404 | Howard Slough (S1) crosses through the delineation area before being culverted under the Hooper Canal. Hydrology within the slough is from irrigation and stormwater runoff, and these connections support permanently flooded conditions within the slough. An ordinary high water mark was clearly defined by changes in vegetation. Due to this consistent hydrology, Howard Slough has a continuous surface water connection to waters associated with the Great Salt Lake. | May be jurisdictional | N/A |

A total of 38 aquatic resources were identified during this delineation of aquatic resources, for a total of 31.70 acres of wetlands, 5.01 acres of ponds, 7,224 linear feet of drainages/canals, and 34 linear feet of streams. All of the wetlands, ponds, channels, and drainages described above are shown on the Delineation Results Figure found in Appendix B and are listed in the Aquatic Resources spreadsheet in Appendix D and in Table 3 below. Indicators for vegetation, hydrology, and hydric soils were clear and easily identified.

**Table 3**
**Aquatic Resources Within the Survey Area**

| Aquatic Resource Name | Aquatic Resources Classification | | Aquatic Resource Size (acres) | Aquatic Resource Size (feet) |
|---|---|---|---|---|
| | Cowardin* | Location (UTM) | | |
| W1 | PEM | 41.105961, -112.095873 | 0.04 | |
| W2 | PEM | 41.108619, -112.098269 | 7.55 | |
| W3 | PEM | 41.109775, -112.100275 | 2.24 | |
| W4 | PEM | 41.110132, -112.099354 | 0.63 | |
| W5 | PEM | 41.110286, -112.09912 | 0.43 | |
| W6 | PEM | 41.111745, -112.100706 | 1.57 | |
| W7 | PEM | 41.112496, -112.101516 | 0.39 | |
| W8 | PEM | 41.112694, -112.101587 | 1.09 | |
| W9 | PEM | 41.126432, -112.108597 | 1.31 | |
| W10 | PEM | 41.128535, -112.108054 | 6.03 | |
| W11 | PEM | 41.129396, -112.108084 | 1.95 | |
| W12 | PEM | 41.129053, -112.108889 | 3.06 | |
| W13 | PEM | 41.132474, -112.108086 | 0.10 | |
| W14 | PEM | 41.134204, -112.107827 | 0.13 | |
| W15 | PEM | 41.138173, -112.106331 | 2.10 | |
| W16 | PEM | 41.13811, -112.105658 | 0.63 | |
| W17 | PEM | 41.136783, -112.105367 | 0.16 | |
| W18 | PEM | 41.136495, -112.104939 | 0.58 | |
| W19 | PEM | 41.137483, -112.104426 | 0.13 | |
| W20 | PEM | 41.138105, -112.104219 | 0.47 | |
| W21 | PEM | 41.138044, -112.105061 | 0.11 | |
| W22 | PEM | 41.138848, -112.104602 | 0.52 | |
| W23 | PEM | 41.130619, -112.108796 | 0.46 | |
| D1 | R4SB5Cx | 41.110441, -112.100607 | (0.32) | 1340 |
| D2 | R4UB3Cx | 41.111089, -112.101418 | (0.61) | 967 |
| D3 | R4SB5Kx | 41.119865, -112.110119 | (0.16) | 1167 |
| D4 | R4SB5C | 41.137677, -112.107994 | (0.02) | 57 |
| D5 | R4SB5Kx | 41.13524, -112.10558 | (0.18) | 1885 |
| D6 | R4SBKx | 41.140173, -112.110693 | (0.05) | 159 |
| D7 | R4SB5C | 41.136617, -112.104732 | (0.18) | 380 |
| D8 | R2UB3C | 41.137747, -112.103391 | (0.09) | 178 |

| Aquatic Resource Name | Aquatic Resources Classification | | Aquatic Resource Size (acres) | Aquatic Resource Size (feet) |
|---|---|---|---|---|
| | Cowardin* | Location (UTM) | | |
| D9 | R2UB3C | 41.138009, -112.105852 | (0.13) | 921 |
| D10 | R2UB3C | 41.136714, -112.106109 | (0.04) | 268 |
| OW1 | PUB3C | 41.129074, -112.109433 | 1.13 | |
| OW2 | PUB3Cx | 41.130983, -112.107666 | 0.23 | |
| OW3 | PUB3Hx | 41.137306, -112.105634 | 0.36 | |
| OW4 | PUB3Hx | 41.137557, -112.104833 | 3.29 | |
| S1 | R2UB3H | 41.146842, -112.111292 | (0.01) | 34 |

** Acreages for the canals and drainages are only provided for reference and are not included in the total aquatic resources area acreage.

The land within the delineation area is owned by both public and private entities. If USACE site visits are desired, contact and access information for landowners can be coordinated through UDOT.

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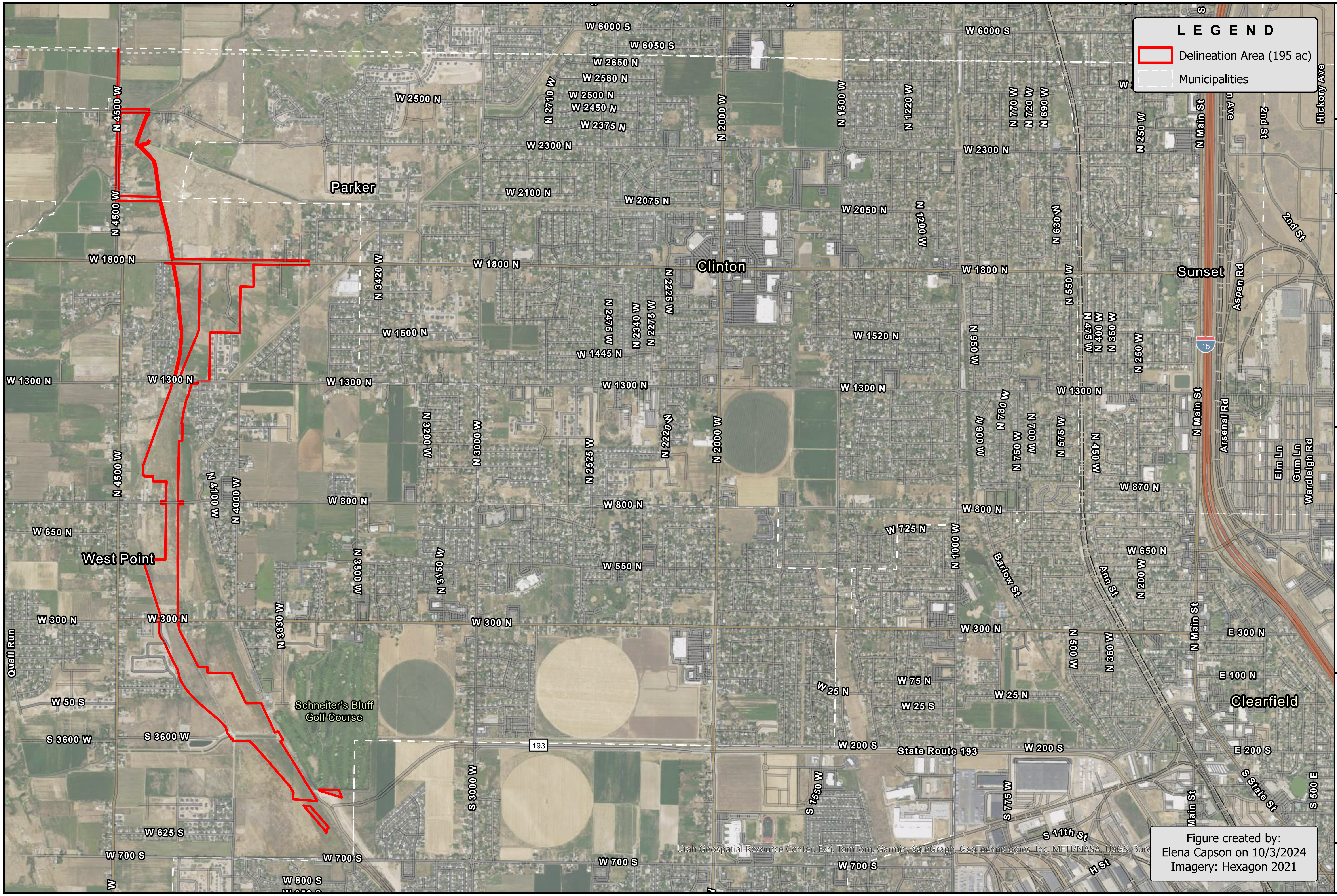
# APPENDIX A

## Site Location Figures




SCALE: 0 750 1,500 Feet

NORTH: NORTH

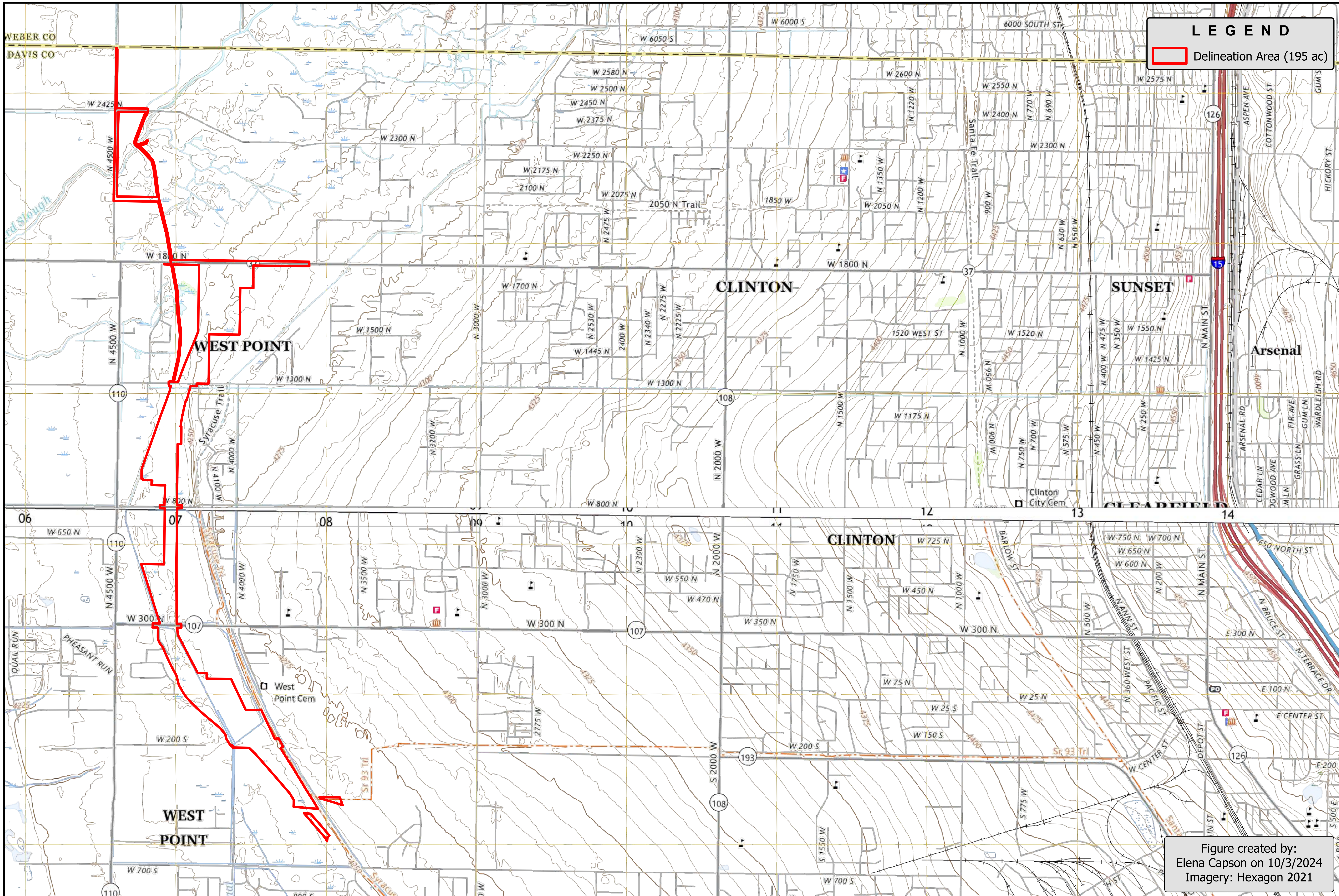
SITE LOCATION

UDOT

WDC SR-177, SR-193 TO 1800 N

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 1A




SCALE: 0 750 1,500 Feet

NORTH:

SITE LOCATION

UDOT

WDC SR-177,
SR-193 TO 1800 N

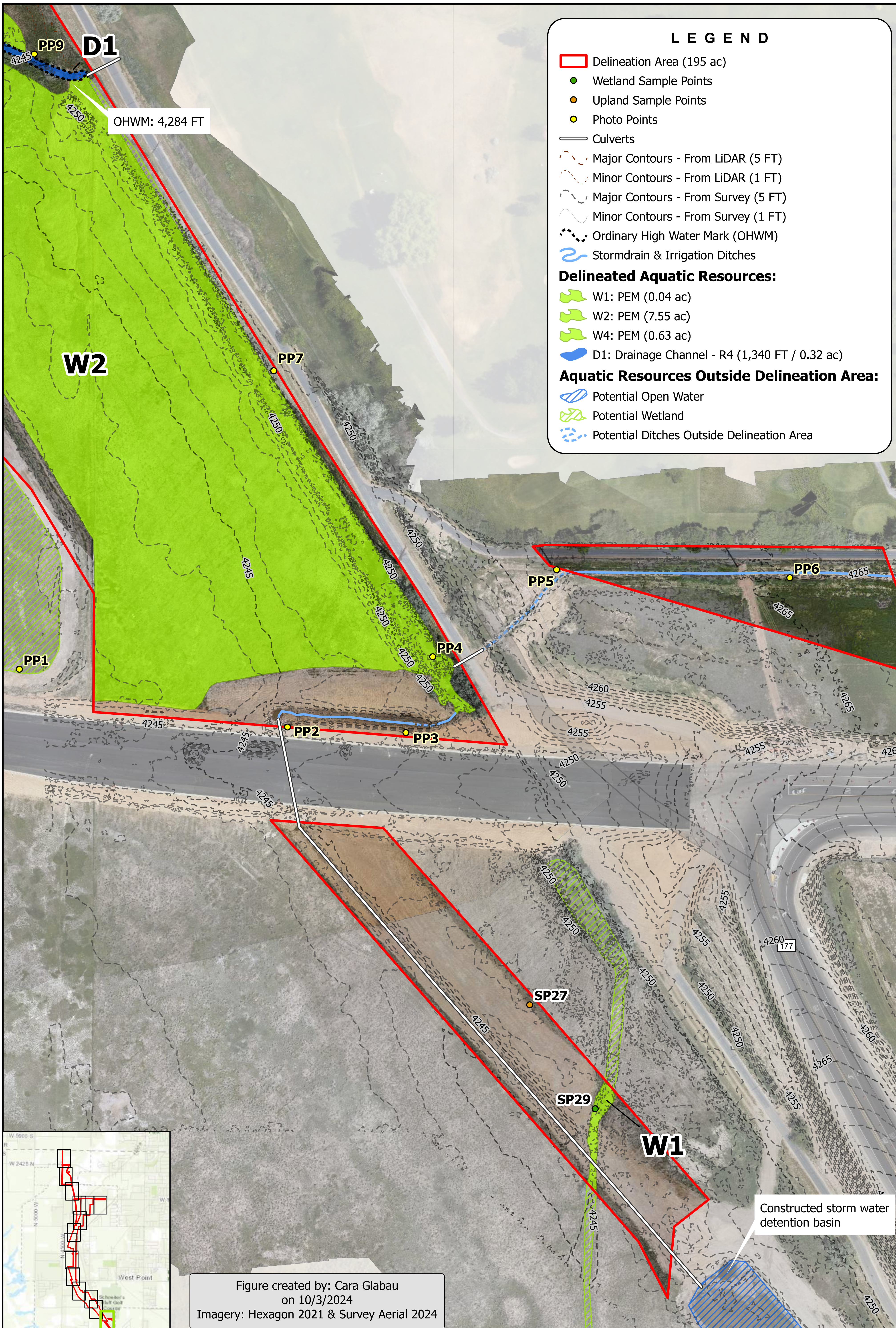
BOWEN COLLINS & ASSOCIATES

FIGURE NO.
1B

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cgilabau 12/4/2024

# APPENDIX B

## Delineation Results Figures




BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

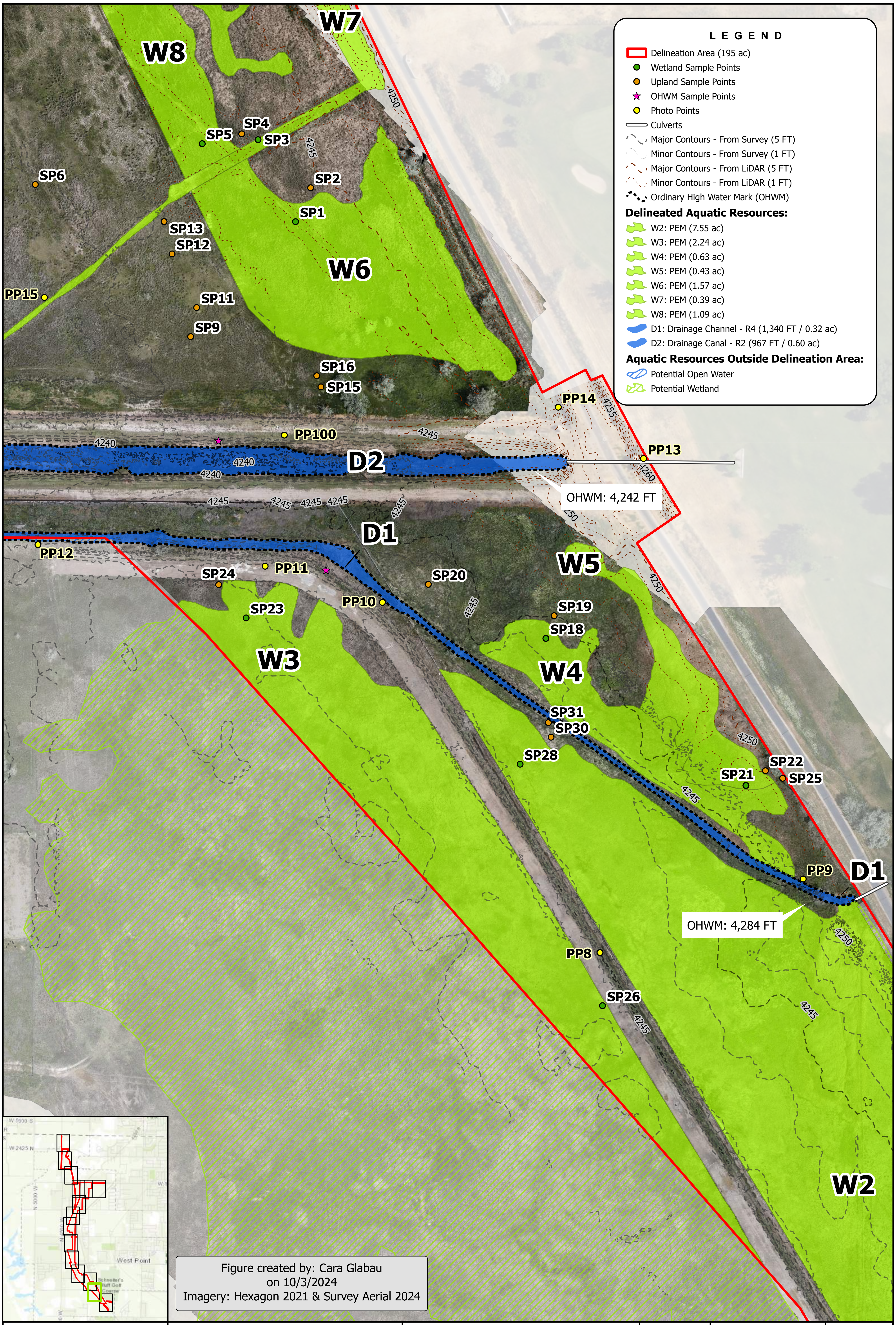
DELINEATION RESULTS

NORTH: NORTH

SCALE: 0 50 100 Feet

FIGURE NO. 2A

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/3/2024




BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

NORTH:

SCALE: 0 50 100 Feet

FIGURE NO.
2B

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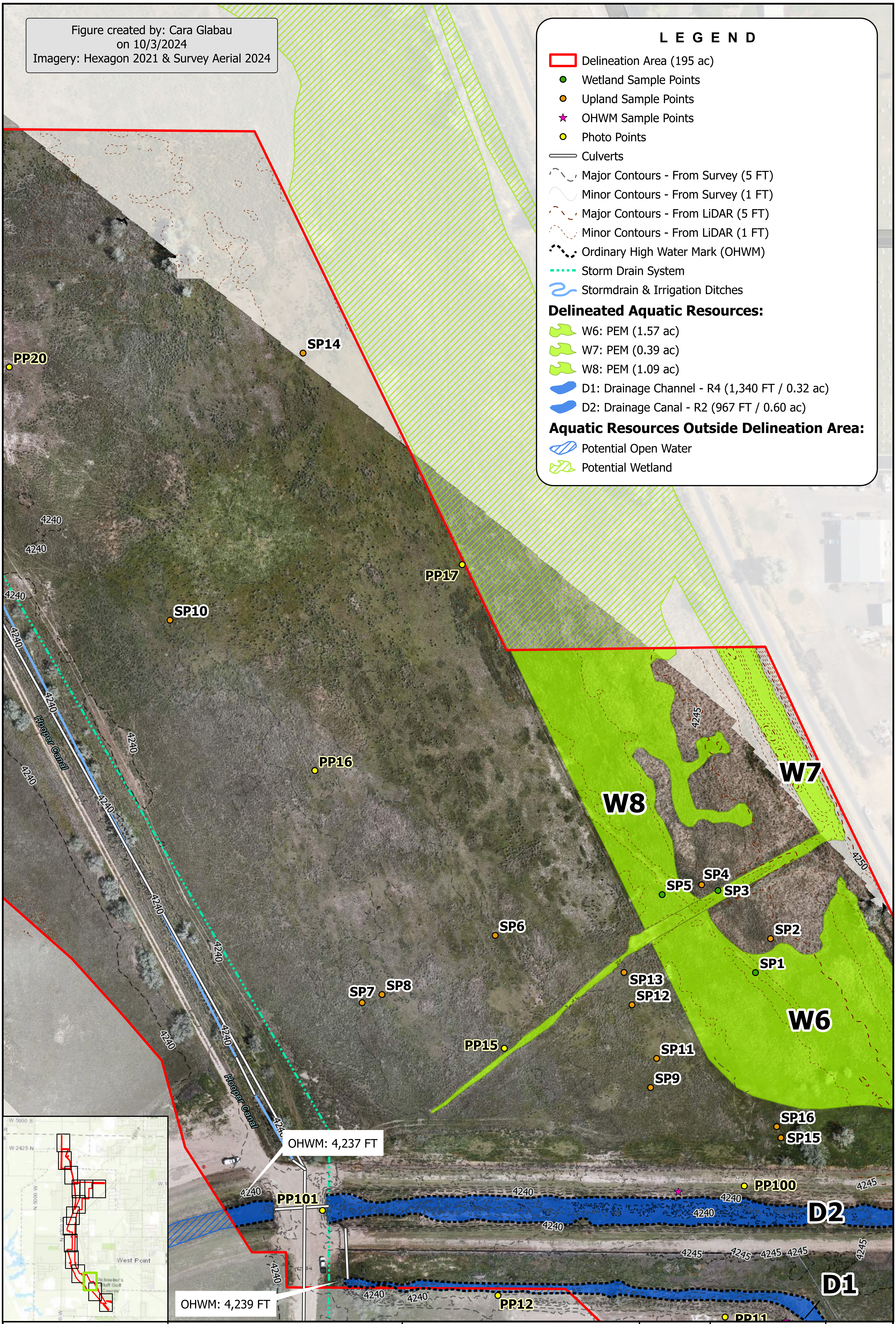


BOWEN COLLINS & ASSOCIATES

UDOT

WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

NORTH:

SCALE: 0 50 100 Feet

FIGURE NO.
2C

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/3/2024


UDOT

WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

NORTH:

SCALE:
0 50 100 Feet

FIGURE NO.
2D

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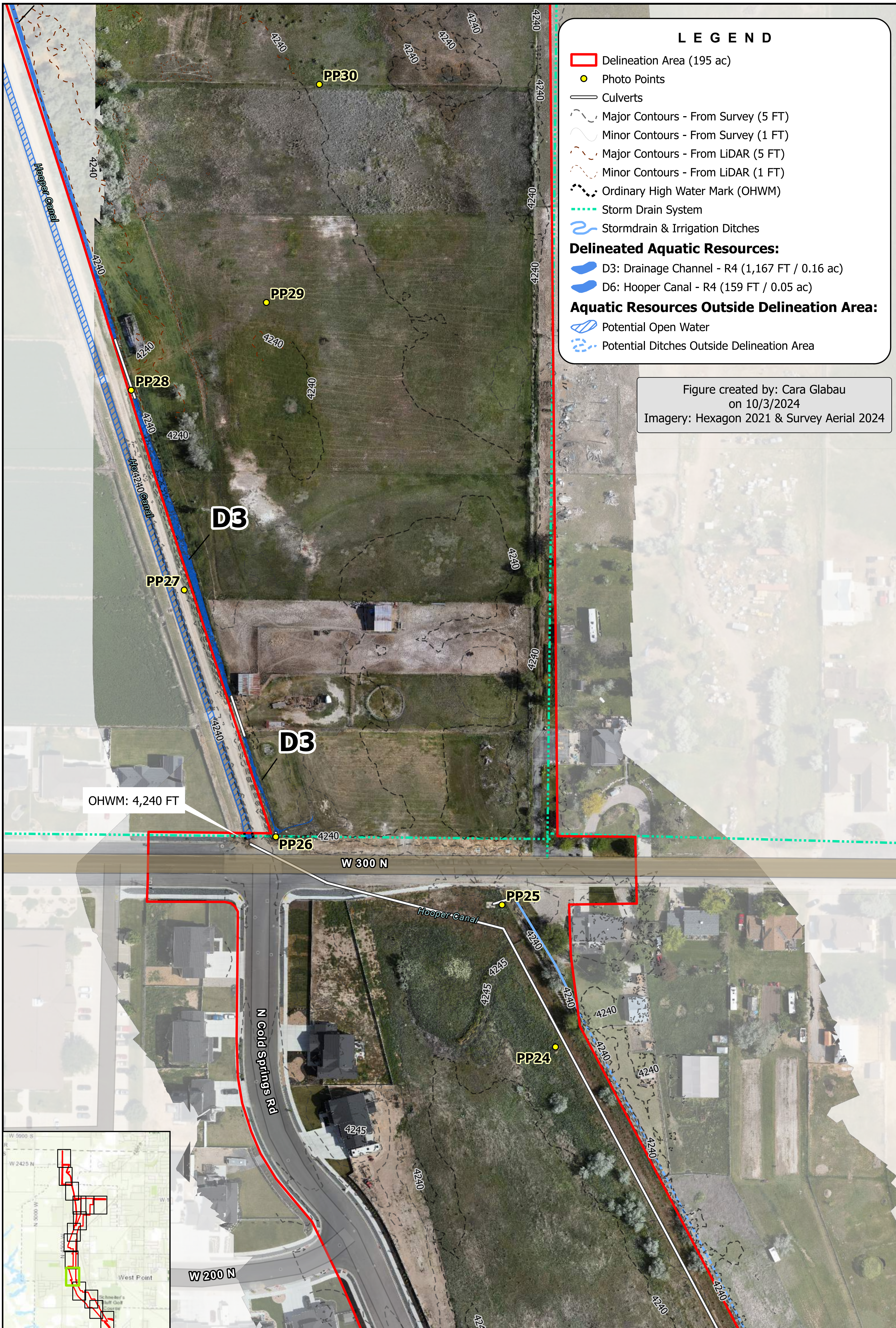


BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

NORTH:
NORTH

SCALE:
0 50 100 Feet

FIGURE NO.
2E

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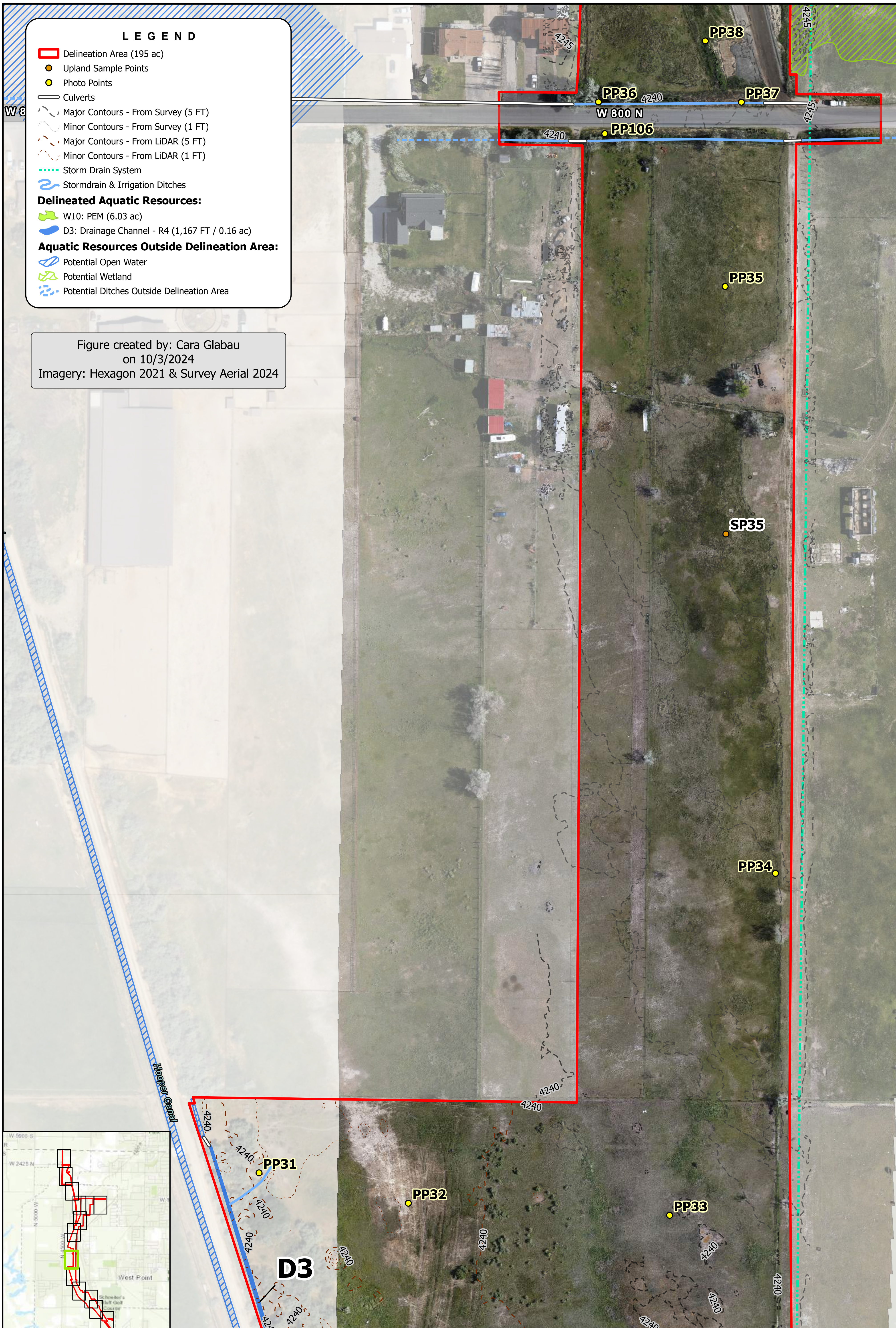


BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

NORTH:

SCALE: 0 50 100 Feet

FIGURE NO.
2F

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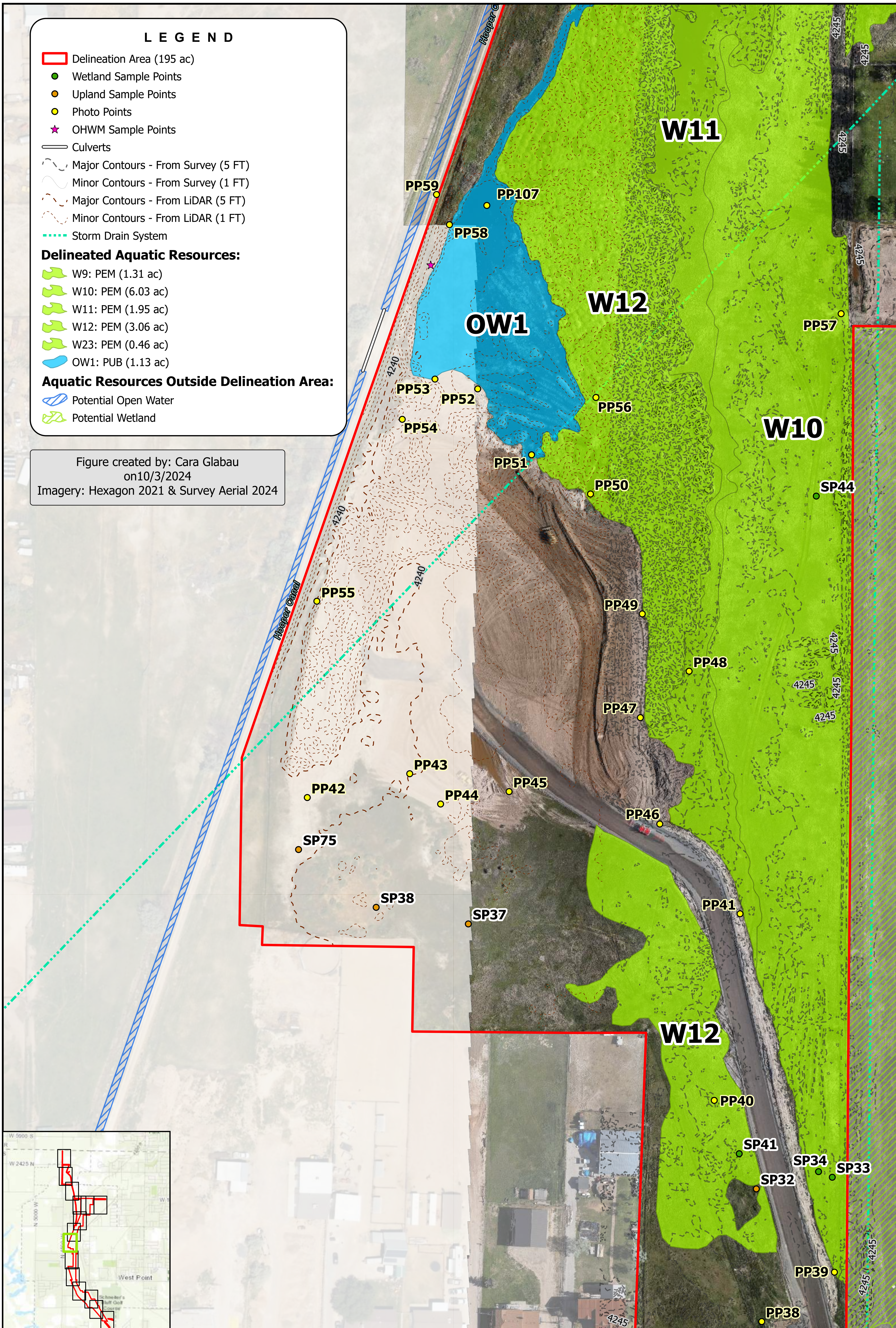


BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

NORTH:

SCALE:
0 50 100
Feet

FIGURE NO.
2G

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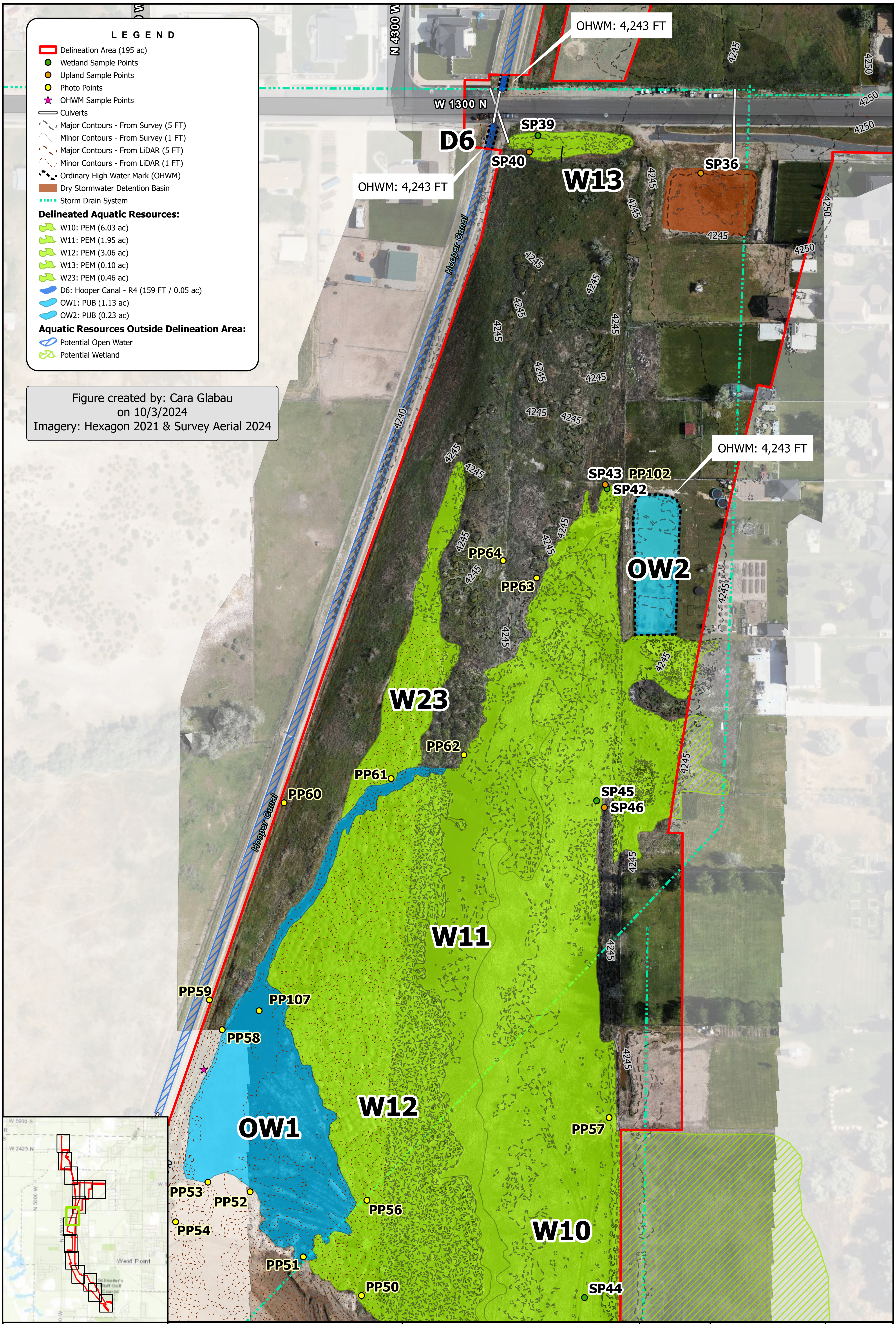
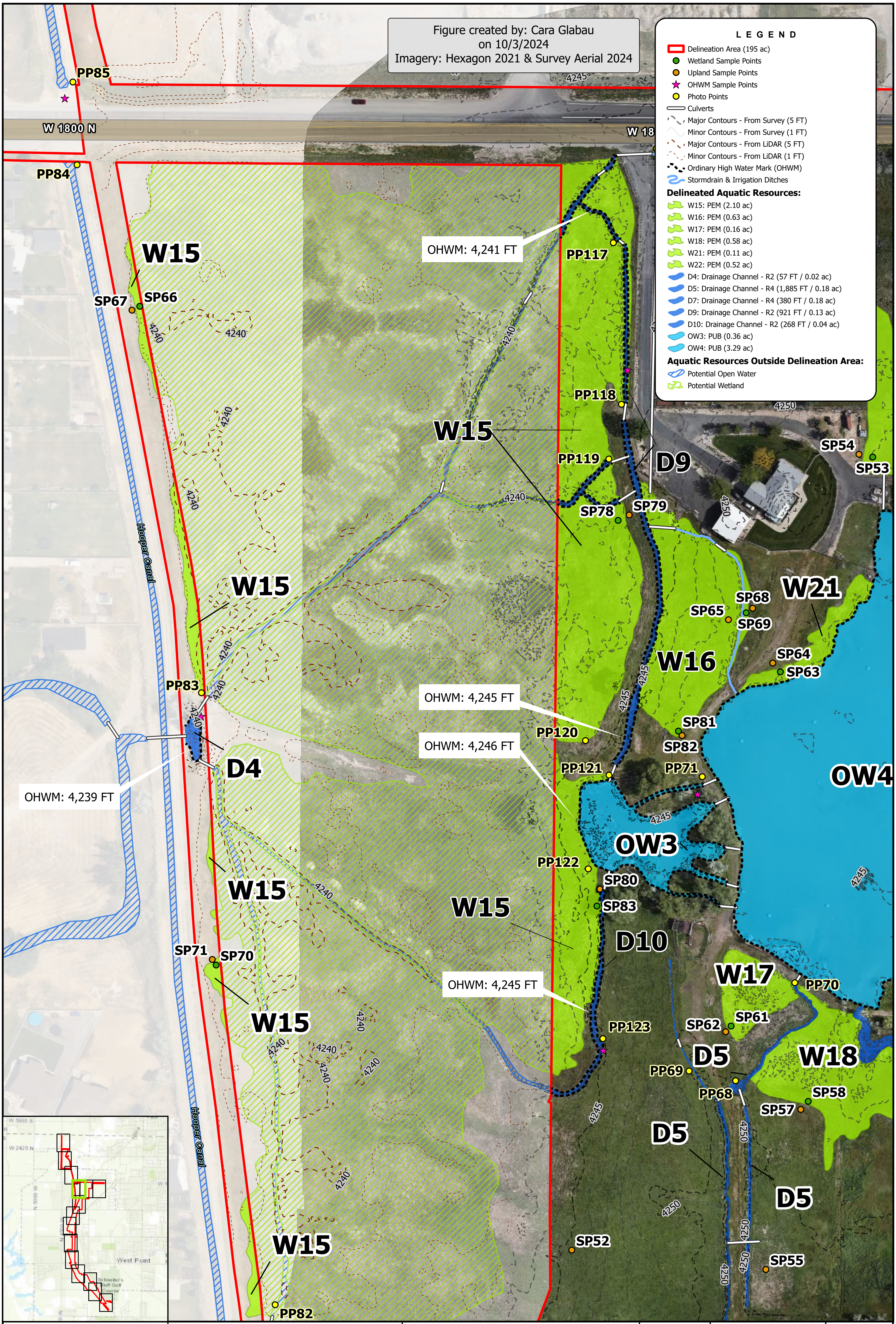



| BOWEN COLLINS & ASSOCIATES | UDOT<br>WDC SR-177,<br>SR-193 TO 1800 N | DELINEATION RESULTS | NORTH: | SCALE: 0 50 100 Feet | FIGURE NO.<br>2H |
|---|---|---|---|---|---|

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024


| BOWEN COLLINS & ASSOCIATES | UDOT<br>WDC SR-177,<br>SR-193 TO 1800 N | DELINEATION RESULTS | NORTH: | SCALE:<br>0 50 100 Feet | FIGURE NO.<br>2I |
|---|---|---|---|---|---|

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




UDOT

WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

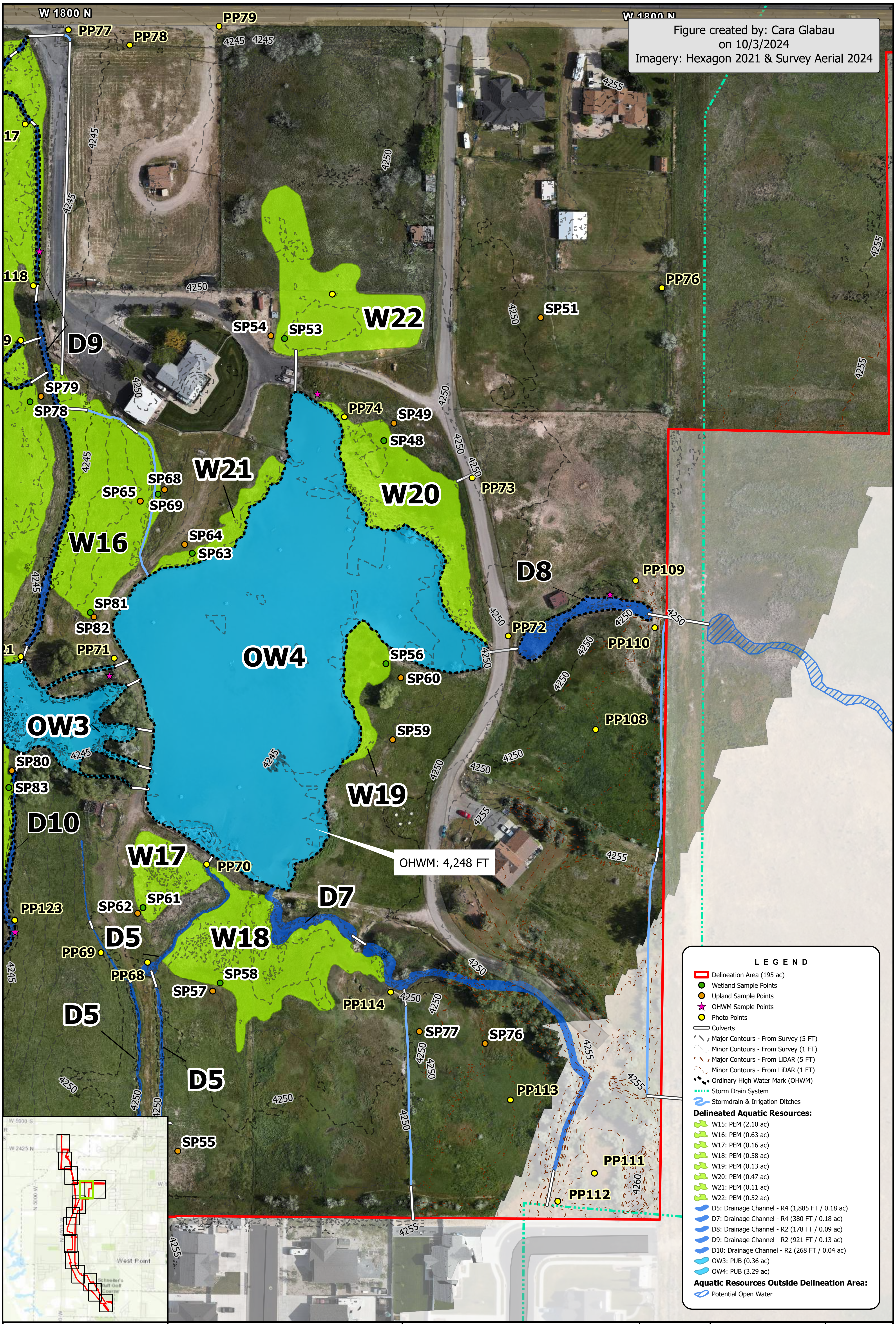
NORTH:

SCALE: 0 50 100 Feet

FIGURE NO.
2J

BOWEN COLLINS & ASSOCIATES

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

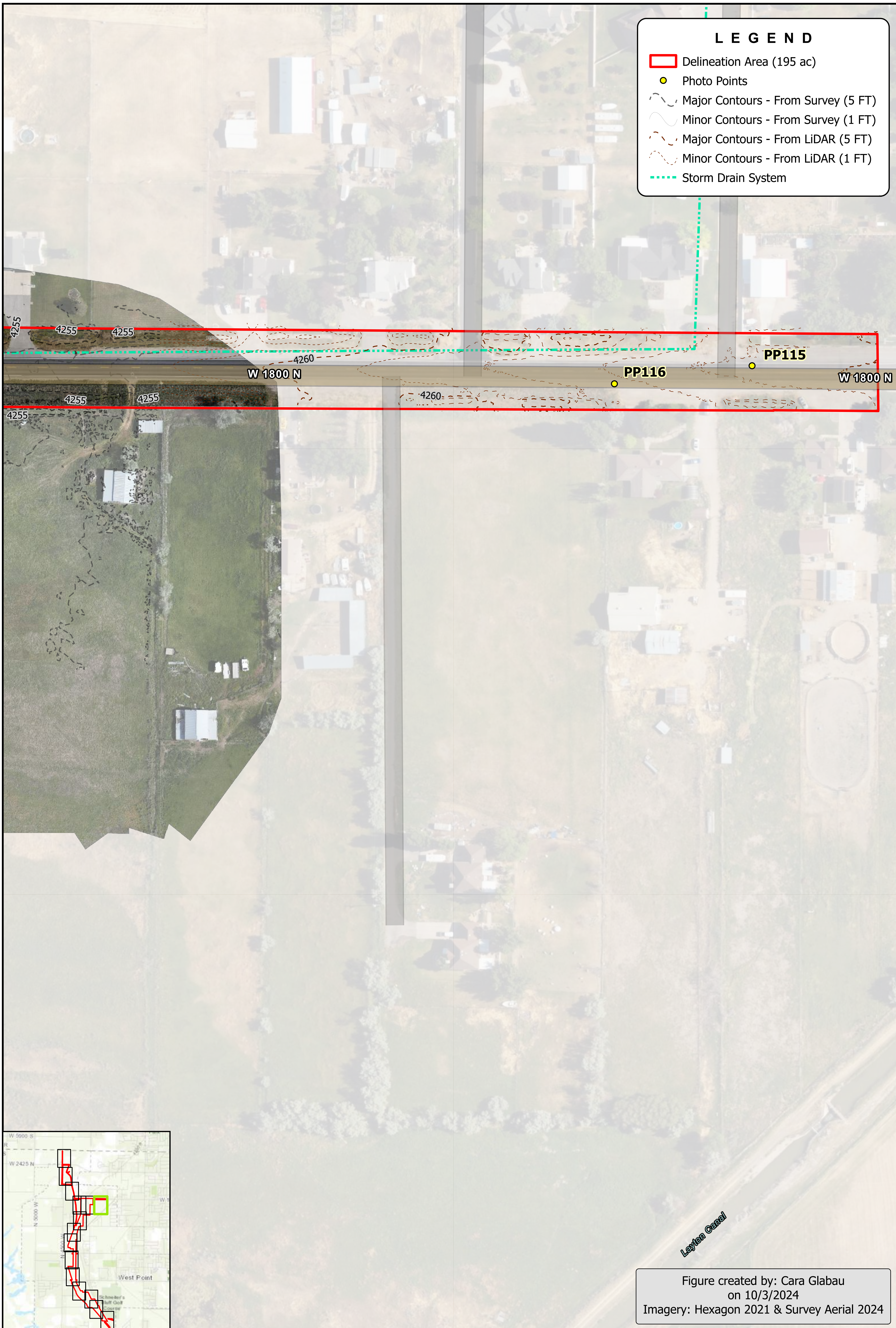
DELINEATION RESULTS

NORTH:

SCALE:
0 50 100 Feet

FIGURE NO.
2K

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

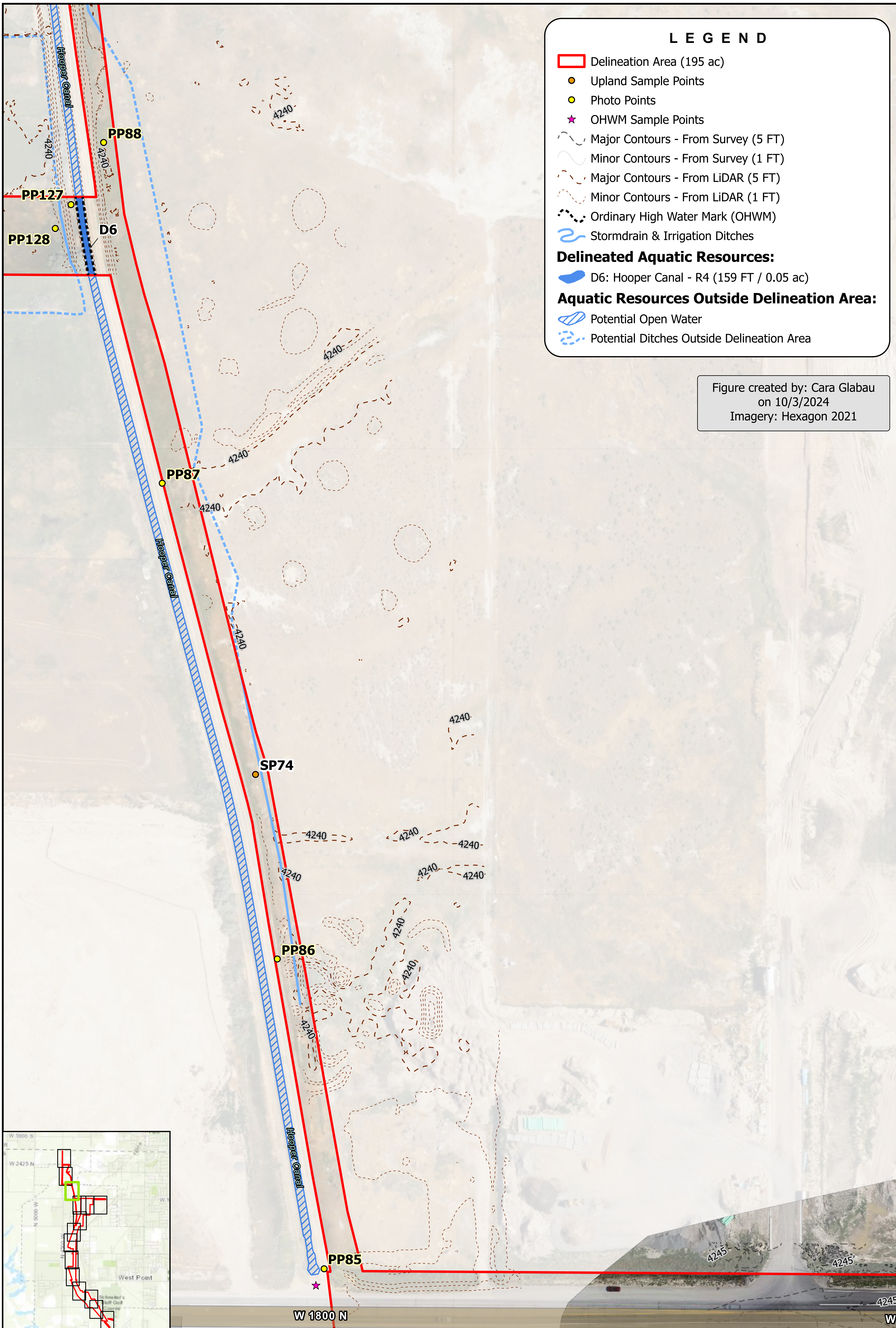
DELINEATION RESULTS

NORTH:

SCALE: 0 50 100 Feet

FIGURE NO. 2L

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

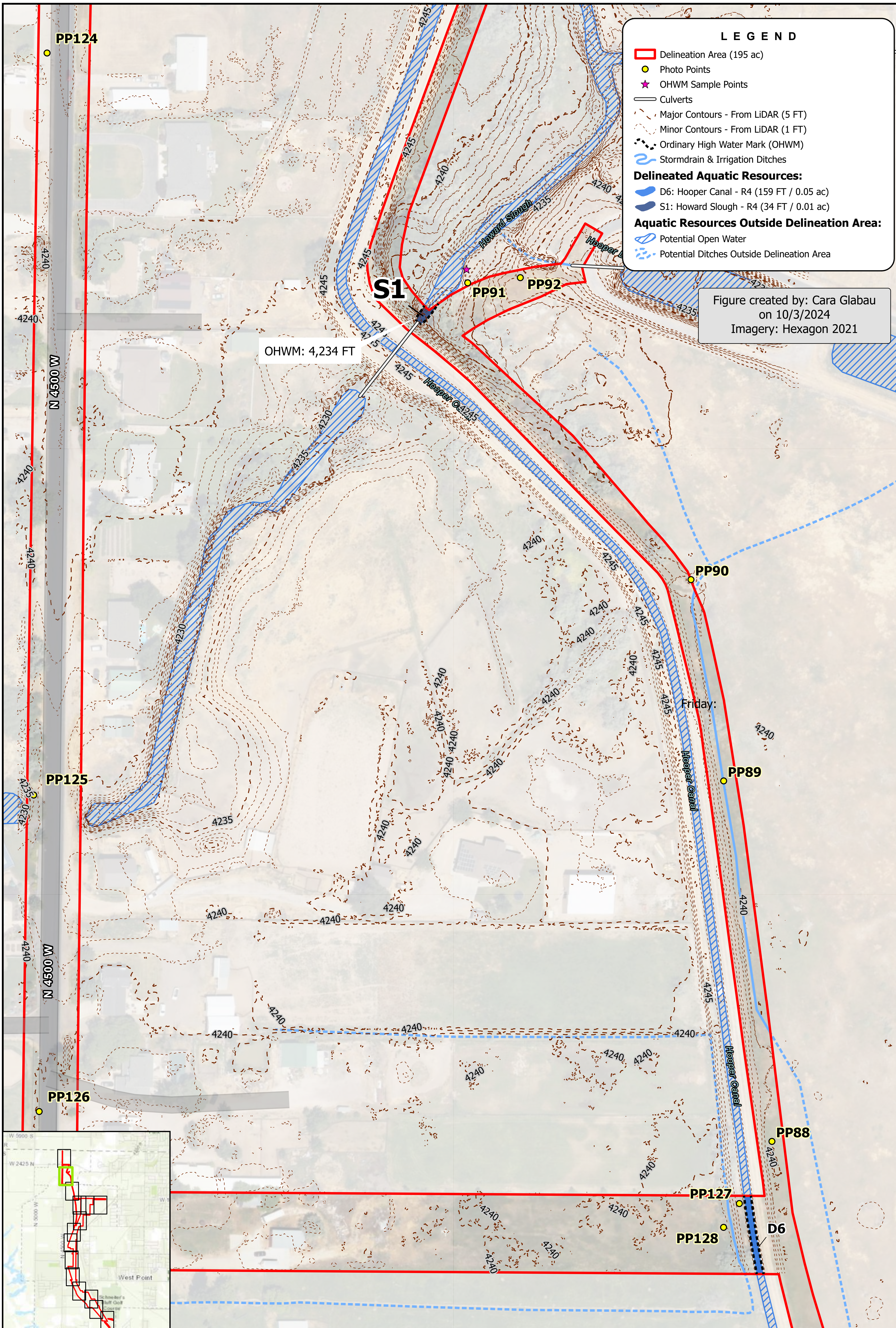
DELINEATION RESULTS

NORTH:

SCALE: 0 50 100 Feet

FIGURE NO.
2M

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




UDOT
WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

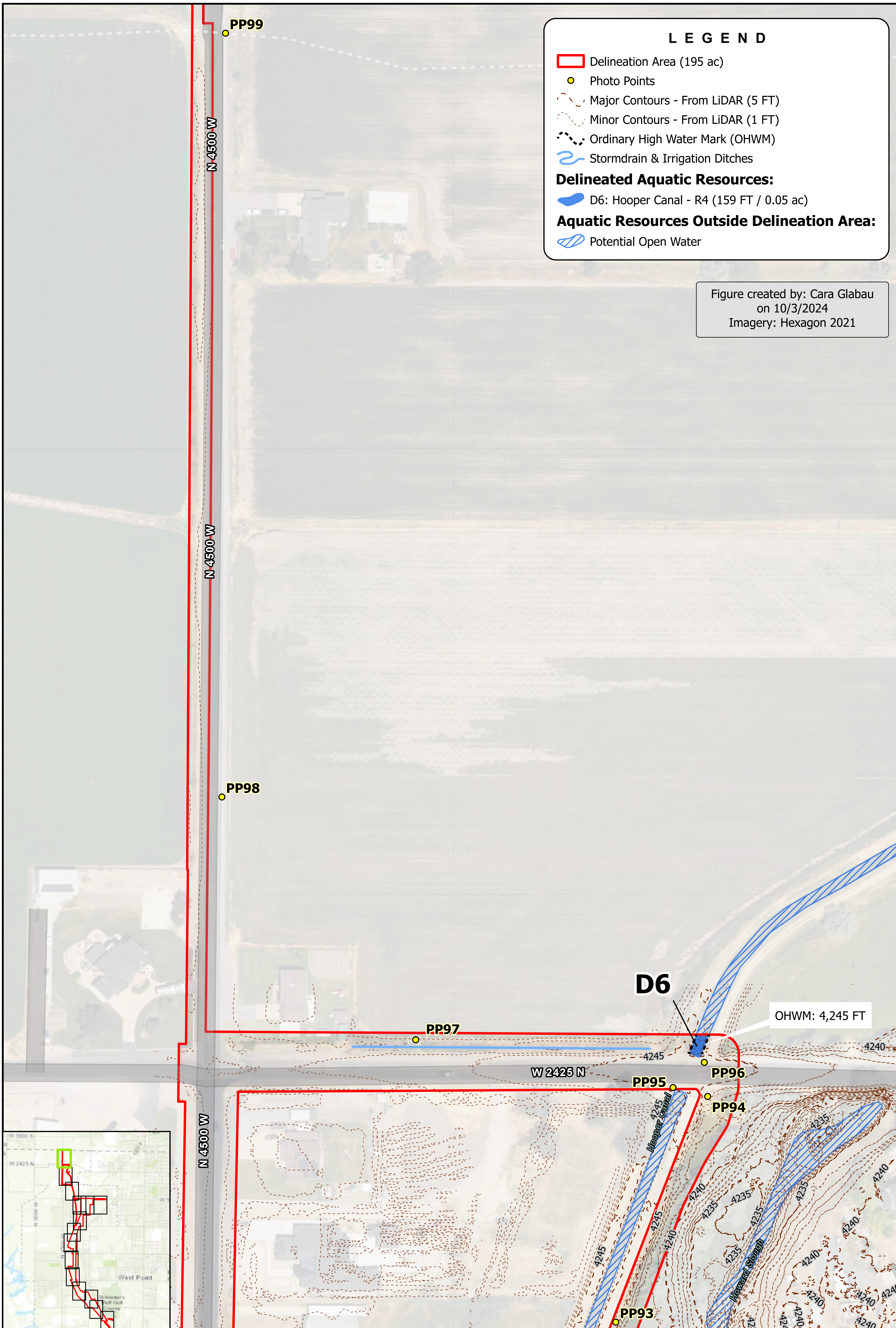
NORTH:

SCALE:
0 50 100 Feet

FIGURE NO.
2N

BOWEN COLLINS & ASSOCIATES

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




UDOT
WDC SR-177,
SR-193 TO 1800 N

DELINEATION RESULTS

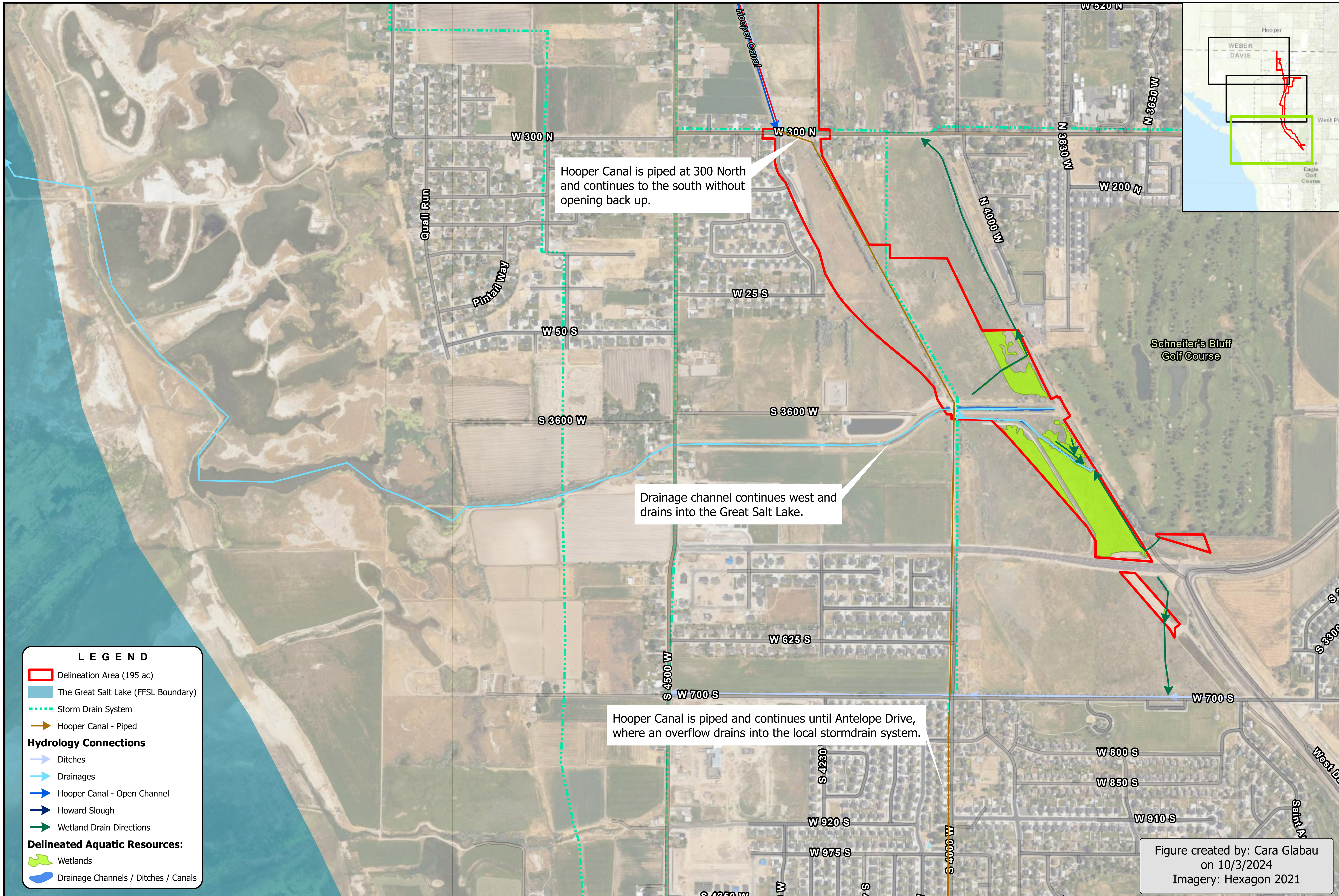
NORTH:

SCALE: 0 50 100 Feet

FIGURE NO.
2O

BOWEN COLLINS & ASSOCIATES

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




SCALE: 1 in = 800 ft

NORTH:

HYDROLOGY CONNECTIONS

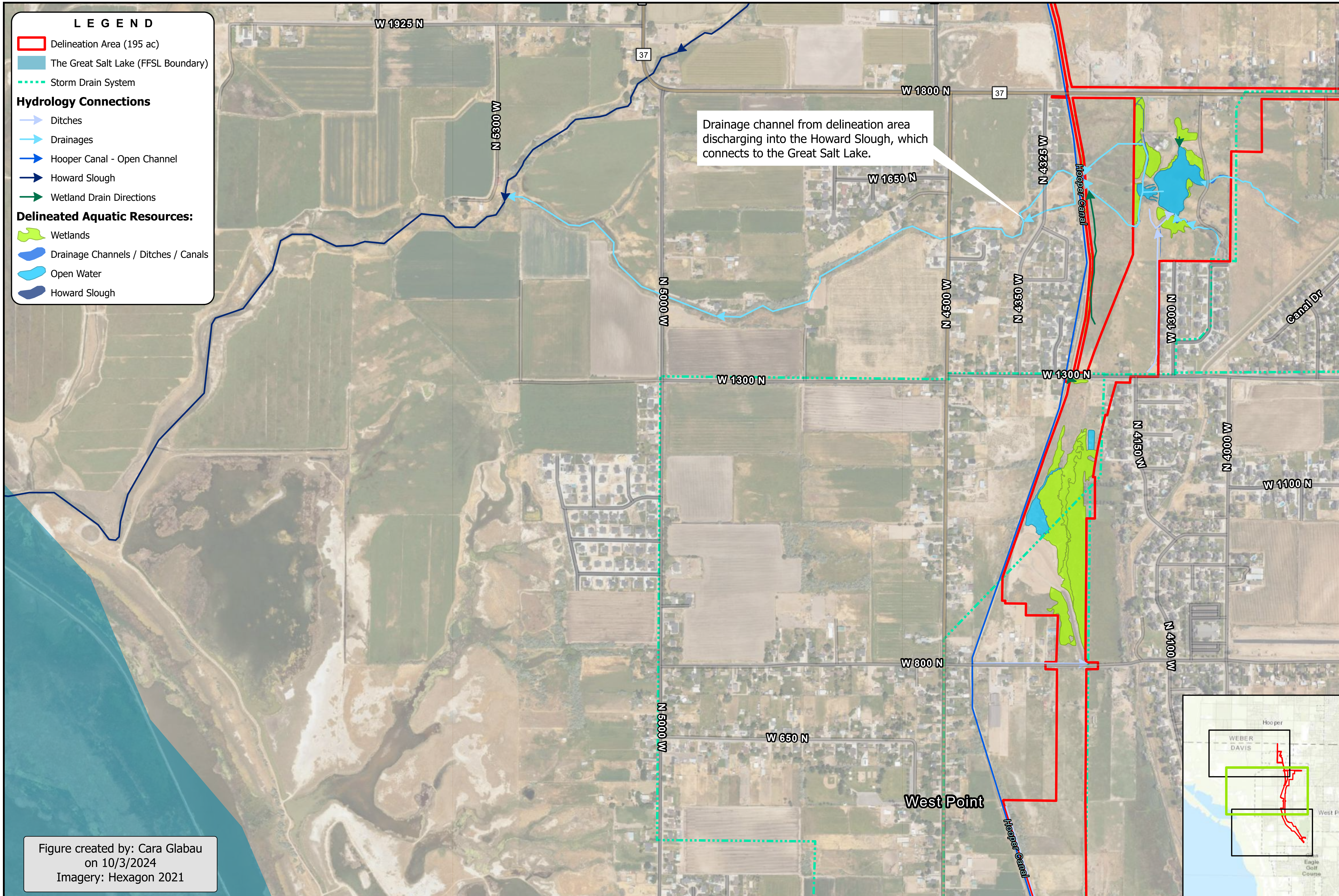
UDOT

WDC SR-177, SR-193 TO 1800 N

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2P

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




SCALE: 1 in = 800 ft

NORTH: NORTH

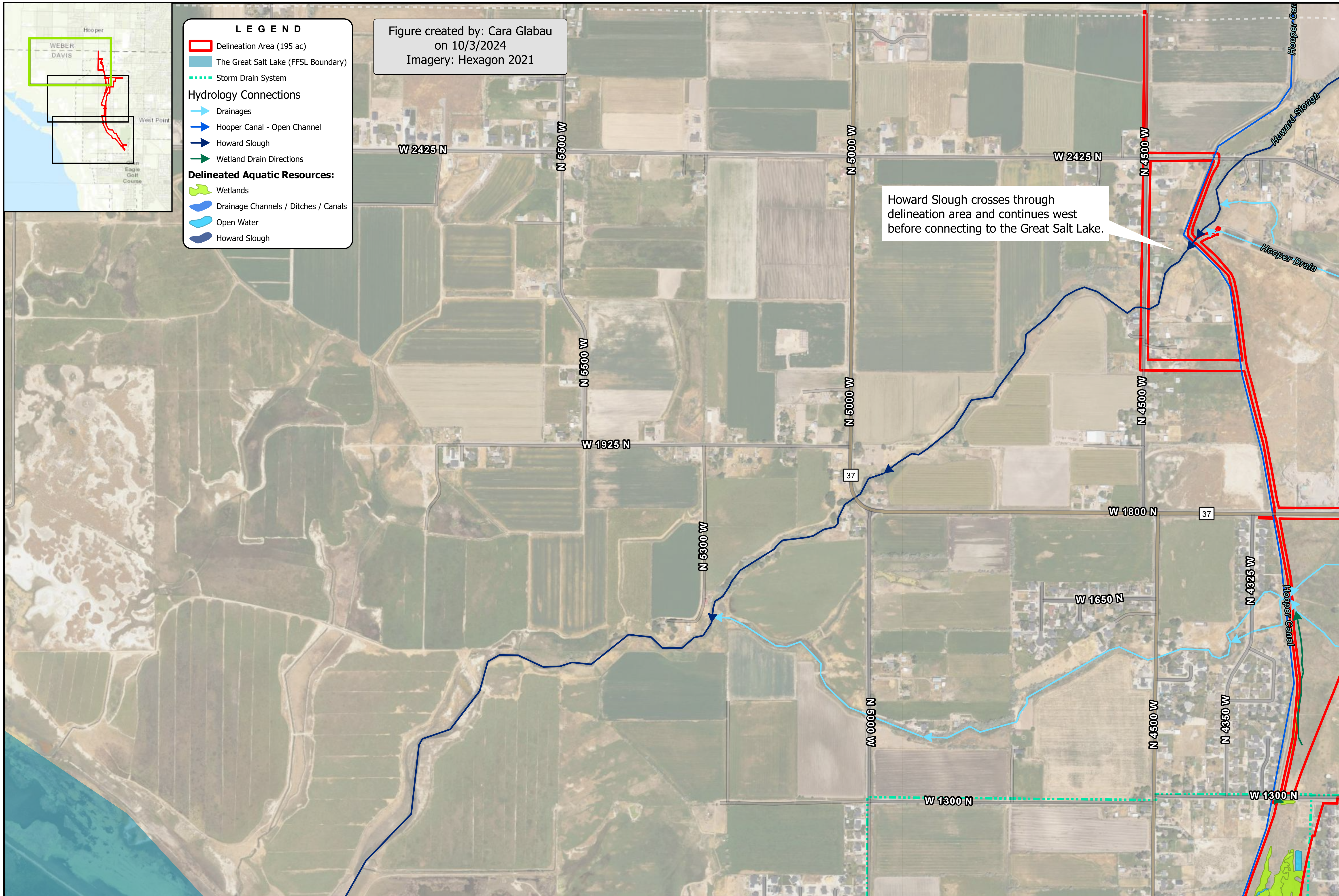
HYDROLOGY CONNECTIONS

UDOT
WDC SR-177, SR-193 TO 1800 N

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
2Q

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024




SCALE: 1 in = 800 ft

NORTH: NORTH

HYDROLOGY CONNECTIONS

UDOT
WDC SR-177, SR-193 TO 1800 N

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
2R

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024

# APPENDIX C

## Wetland Determination Data Forms & Photographs

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-13

Applicant/Owner: UDOT State: Utah Sampling Point: SP1

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.1119405 Long: -112.10095533 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ |
| Hydric Soil Present? | Yes ✔ | No ___ |
| Wetland Hydrology Present? | Yes ✔ | No ___ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ___

Remarks:

This pasture has likely been planted with intermediate wheatgrass for the grazing cattle. Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Carex praegracilis | 41 | ✔ | FACW |
| 2. Juncus balticus | 30 | ✔ | FACW |
| 3. Thinopyrum intermedium | 21 | ✔ | UPL |
| 4. Melilotus officinalis | 8 | | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 71 | x 2 = | 142 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 8 | x 4 = | 32 |
| UPL species | 21 | x 5 = | 105 |
| Column Totals: | 100 (A) | | 279 (B) |

Prevalence Index = B/A = 2.79

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ___

Remarks:

This pasture has likely been planted with intermediate wheatgrass for the grazing cattle.

## SOIL

Sampling Point: SP1

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 5YR 2.5/1 | 100 | | | | | Muck | |
| 1 - 14 | 10YR 4/2 | 100 | | | | | Clay | |
| 14 - 24 | 10YR 6/2 | 100 | | | | | 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.)**

- ___ 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** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | ✔ | |
| Water Table Present? | ✔ | | 18 |
| Saturation Present? (includes capillary fringe) | ✔ | | 0 |

**Wetland Hydrology Present? Yes** ✔ **No** ___

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

Remarks:

A higher water table would have likely developed with more time. Conditions of soils were very saturated, likely from a mix of high ground water and surface drainage from local irrigation practices. This area is slightly depressed, allowing this water to permeate the soils while slowly draining to the north.


**Sample Point 1**


**Sample Point 1**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-13

Applicant/Owner: UDOT State: Utah Sampling Point: SP2

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11206133 Long: -112.10092367 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✔

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ___ No ✔

Remarks:

This pasture has likely been planted with intermediate wheatgrass for the grazing cattle. Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Although this sample point has hydrology, vegetation and soils do not meet any wetland criteria and is therefore, not a wetland. This area likely receives irrigation for cattle grazing, but not consistent enough hydrology to support hydric soil development or hydrophytic plant growth.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Juncus balticus | 40 | ✔ | FACW |
| 2. Thinopyrum intermedium | 40 | ✔ | UPL |
| 3. Carex praegracilis | 15 | | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 95 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 55 | x 2 = 110 |
| FAC species | 0 | x 3 = 0 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 40 | x 5 = 200 |
| Column Totals: | 95 (A) | 310 (B) |

Prevalence Index = B/A = 3.26

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

This pasture has been planted with intermediate wheatgrass which is dominant in this location, likely due to a change in topographic conditions and lessening long-term saturation.

## SOIL

Sampling Point: SP2

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 2.5YR 2.5/2 | 100 | | | | | Peat | |
| 2 - 24 | 2.5Y 5/2 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

Redox must be present in the depleted layer to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | ✔ | |
| Water Table Present? | ✔ | | 20 |
| Saturation Present? (includes capillary fringe) | ✔ | | 18 |

**Wetland Hydrology Present?** Yes ___ No ✔

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

Remarks:

Water table present at bottom four inches of sample point pit and soil was moist but not fully saturated to the extent that was present at other points throughout the delineation area except the soils that were close to and under the water table.


**Sample Point 2**


**Sample Point 2**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-13

Applicant/Owner: UDOT State: Utah Sampling Point: SP3

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11223533 Long: -112.10113183 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** Yes ✔ No ____

Remarks:
This is a depression that appears to convey drainage water to the north outside of the delineation area, connecting to the local stormdrain system. Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____ ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____ ) | | | |
| 1. Eleocharis palustris | 38 | ✔ | OBL |
| 2. Eleocharis obtusa | 28 | ✔ | OBL |
| 3. Carex nebrascensis | 16 | | OBL |
| 4. Rumex crispus | 6 | | FAC |
| 5. Ranunculus sceleratus | 3 | | OBL |
| 6. Xanthium spinosum | 3 | | FACU |
| 7. | | | |
| 8. | | | |
| = Total Cover | 94 | | |
| **Woody Vine Stratum** (Plot size: ____ ) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 85 | x 1 = 85 |
| FACW species | 0 | x 2 = 0 |
| FAC species | 6 | x 3 = 18 |
| FACU species | 3 | x 4 = 12 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 94 (A) | 115 (B) |

Prevalence Index = B/A = 1.22

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP3

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 2.5Y 3/2 | 100 | | | | | Muck | |
| 1 - 10 | 2.5Y 3/3 | 100 | | | | | Clay Loam | |
| 10 - 24 | 2.5YR 4/2 | 100 | | | | | Sandy 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.)**

- ___ 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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ✔ No ______ Depth (inches): 2

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ✔ **No** ______

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

Remarks:

Some surface water surrounding the sample point pit location was present. Depth was not greater then 3-inches.


**Sample Point 3**


**Sample Point 3**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-13

Applicant/Owner: UDOT State: Utah Sampling Point: SP4

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11225517 Long: -112.10123917 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:
This pasture has likely been planted with intermediate wheatgrass for the grazing cattle. Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Although this sample point has hydrology, vegetation and soils do not meet any wetland criteria and is therefore, not a wetland. This area likely receives irrigation for cattle grazing, but not consistent enough hydrology to support hydric soil development or hydrophytic plant growth.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Juncus balticus | 40 | ✔ | FACW |
| 2. Thinopyrum intermedium | 40 | ✔ | UPL |
| 3. Carex praegracilis | 15 | | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 95 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 55 | x 2 = | 110 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 40 | x 5 = | 200 |
| Column Totals: | 95 (A) | | 310 (B) |

Prevalence Index = B/A = 3.26

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

This pasture has been planted with intermediate wheatgrass which is dominant in this location, likely due to a change in topographic conditions and lessening long-term saturation.

## SOIL

Sampling Point: SP4

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 2.5YR 2.5/2 | 100 | | | | | Peat | |
| 2 - 24 | 2.5Y 5/2 | 100 | | | | | 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.)**

___ 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 ✔**

Remarks:

Depleted layer needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ✔ No ___ Depth (inches): 21
Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 19

**Wetland Hydrology Present? Yes ___ No ✔**

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

Remarks:

Water table present at bottom four inches of sample point pit and soil was moist but not fully saturated to the extent that was present at other points throughout the delineation area except the soils that were close to and under the water table.


**Sample Point 4**


**Sample Point 4**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-13

Applicant/Owner: UDOT State: Utah Sampling Point: SP5

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.1122185 Long: -112.10139417 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ 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 ______ | **Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ______ |
| Hydric Soil Present? | Yes ✔ | No ______ | |
| Wetland Hydrology Present? | Yes ✔ | No ______ | |

Remarks:

This pasture has been planted with intermediate wheatgrass. Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ______) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ______) | | | |
| 1. Juncus balticus | 41 | ✔ | FACW |
| 2. Phalaris arundinacea | 23 | ✔ | FACW |
| 3. Thinopyrum intermedium | 22 | ✔ | UPL |
| 4. Eleocharis obtusa | 9 | | OBL |
| 5. Panicum oligosanthes | 5 | | UPL |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 9 | x 1 = | 9 |
| FACW species | 64 | x 2 = | 128 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 27 | x 5 = | 135 |
| Column Totals: | 100 (A) | | 272 (B) |

Prevalence Index = B/A = 2.72

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ______

Remarks:

## SOIL

Sampling Point: SP5

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 10YR 3/3 | 100 | | | | | Peat | |
| 2 - 6 | 10YR 3/2 | 100 | | | | | Mucky Loam/Clay | |
| 6 - 24 | 10YR 5/2 | 100 | | | | | 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.)**

- ___ 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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | ✔ | |
| Water Table Present? | ✔ | | 20 |
| Saturation Present? (includes capillary fringe) | ✔ | | 0 |

**Wetland Hydrology Present? Yes** ✔ **No** ______

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

Remarks:

A higher water table would have likely developed with more time. Conditions of soils were very saturated, likely from a mix of high ground water and surface drainage from local irrigation practices. This area is slightly depressed, allowing this water to permeate the soils while slowly draining to the south.


**Sample Point 5**


**Sample Point 5**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-13

Applicant/Owner: UDOT State: Utah Sampling Point: SP6

Investigator(s): Merissa Davis Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11208642 Long: -112.10220327 Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ______ No ✔

Remarks:

This pasture has likely been planted with intermediate wheatgrass for the grazing cattle. Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Although this sample point has hydrophytic vegetation, soils and hydrology do not meet any wetland criteria and is therefore, not a wetland. This area likely receives irrigation for cattle grazing, but not consistent enough hydrology to support hydric soil development.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Distichlis spicata | 30 | ✔ | FAC |
| 2. Juncus balticus | 25 | ✔ | FACW |
| 3. Thinopyrum intermedium | 20 | ✔ | UPL |
| 4. Taraxacum officinale | 5 | | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 80 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 25 | x 2 = | 50 |
| FAC species | 30 | x 3 = | 90 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 20 | x 5 = | 100 |
| Column Totals: | 80 (A) | | 260 (B) |

Prevalence Index = B/A = 3.25

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ______

Remarks:

## SOIL

Sampling Point: SP6

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 3 | 10YR 3/3 | 100 | | | | | Loam | Lots of organic matter |
| 3 - 12 | 10YR 4/1 | 100 | | | | | Clay | |
| 12 - 24 | 10R 5/3 | 100 | | | | | 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.)**

___ 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 ✔**

Remarks:

Dark layer and depleted layer have value or chroma too high to qualify for "depleted below dark surface" or "thick dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | ✔ | |
| Water Table Present? | ✔ | | 17 |
| Saturation Present? (includes capillary fringe) | ✔ | | 15 |

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:

Water table present at bottom four inches of sample point pit and soil was moist but not fully saturated to the extent that was present at other points throughout the delineation area except the soils that were close to and under the water table.


**Sample Point 6**

**Sample Point 6**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-13

Applicant/Owner: UDOT State: Utah Sampling Point: SP7

Investigator(s): Merissa Davis Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11183363 Long: -112.10282847 Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ |
| Wetland Hydrology Present? | Yes ____ | No ✔ |
| **Is the Sampled Area within a Wetland?** | **Yes** ____ | **No** ✔ |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Cattle also active in area.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Thinopyrum intermedium | 60 | ✔ | UPL |
| 2. Distichlis spicata | 15 | ✔ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 75 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 15 % 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: 50.00 (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 | 60 | x 5 = 300 |
| Column Totals: | 75 (A) | 345 (B) |

Prevalence Index = B/A = 4.60

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP7

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 10R 4/2 | 100 | | | | | Loam | Organic matter present |
| 2 - 9 | 10YR 5/2 | 100 | | | | | | Lots of organic matter. No redox, just roots. |
| 9 - 24 | 10YR 5/3 | 100 | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ✔ No ______ Depth (inches): 22

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 7**

**Sample Point 7**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II    City/County: Davis County    Sampling Date: 2024-05-14

Applicant/Owner: UDOT    State: Utah    Sampling Point: SP8

Investigator(s): Cara Glabau, Elena Capson    Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat    Local relief (concave, convex, none): None    Slope (%): 0

Subregion (LRR): D 28A    Lat: 41.11186233    Long: -112.10272283    Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes    NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ____, or Hydrology ____ significantly disturbed?    Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic?    (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | ✔ | |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

This pasture has likely been planted with intermediate wheatgrass for the grazing cattle. Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Although this sample point has hydrophytic vegetation and hydrology, soils do not meet any wetland criteria and is therefore, not a wetland. This area likely receives irrigation for cattle grazing, but not consistent enough hydrology to support hydric soil development.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Distichlis spicata | 42 | ✔ | FAC |
| 2. Eleocharis palustris | 26 | ✔ | OBL |
| 3. Phalaris arundinacea | 12 | | FACW |
| 4. Thinopyrum intermedium | 6 | | UPL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 86 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____    % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 26 | x 1 = 26 |
| FACW species | 12 | x 2 = 24 |
| FAC species | 42 | x 3 = 126 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 6 | x 5 = 30 |
| Column Totals: | 86 (A) | 206 (B) |

Prevalence Index = B/A = 2.39

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP8

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 6 | 7.5YR 3/1 | 100 | | | | | Clay | |
| 6 - 8 | 7.5YR 2.5/1 | 100 | | | | | Loam | |
| 8 - 24 | 10YR 5/3 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

Reduced layer value and chroma are too high to qualify for "depleted below dark surface" or "thick dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ___

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

Remarks:


**Sample Point 8**


**Sample Point 8**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP9

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11149833 Long: -112.101474 Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:

This pasture has likely been planted with intermediate wheatgrass for the grazing cattle. Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum (Plot size: ___)** | | | |
| 1. Bromus tectorum | 42 | ✔ | UPL |
| 2. Thinopyrum intermedium | 27 | ✔ | UPL |
| 3. Poa compressa | 18 | | FACU |
| 4. Juncus balticus | 6 | | FACW |
| 5. Eleocharis obtusa | 3 | | OBL |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 96 | = Total Cover | |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ___ % 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 3 | x 1 = | 3 |
| FACW species | 6 | x 2 = | 12 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 18 | x 4 = | 72 |
| UPL species | 69 | x 5 = | 345 |
| Column Totals: | 96 (A) | | 432 (B) |

Prevalence Index = B/A = 4.50

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP9

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 10YR 4/2 | 100 | | | | | Clay Loam | |
| 4 - 20 | 10YR 5/2 | 100 | | | | | Clay | |
| 20 - 24 | 10YR 5/3 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ___ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ___ No ✔

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

Remarks:


**Sample Point 9**


**Sample Point 9**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP10

Investigator(s): Merissa Davis Section, Township, Range: S06 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11318618 Long: -112.10374155 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ 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 ✔ | **Is the Sampled Area within a Wetland?** Yes ______ No ✔ |
| Hydric Soil Present? | Yes ______ | No ✔ | |
| Wetland Hydrology Present? | Yes ______ | No ✔ | |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Cattle also active in area.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Thinopyrum intermedium | 40 | ✔ | UPL |
| 2. Hordeum murinum | 20 | ✔ | FACU |
| 3. Bromus tectorum | 15 | | UPL |
| 4. Descurainia pinnata | 5 | | UPL |
| 5. Convolvulus arvensis | 5 | | UPL |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 85 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 65 | x 5 = | 325 |
| Column Totals: | 85 (A) | | 405 (B) |

Prevalence Index = B/A = 4.76

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP10

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 6 | 10YR 4/2 | 100 | | | | | Clay | |
| 6 - 11 | 2.5Y 2.5/1 | 100 | | | | | Loam | |
| 11 - 24 | 10YR 4/2 | 100 | | | | | Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ✔

Remarks:

Depleted layer needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:


**Sample Point 10**

**Sample Point 10**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14
Applicant/Owner: UDOT State: Utah Sampling Point: SP11
Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): D 28A Lat: 41.11166883 Long: -112.10146967 Datum: NAD83_2011
Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ | **Is the Sampled Area within a Wetland?** **Yes** ___ **No** ✔ |
| Hydric Soil Present? | Yes ___ No ✔ | |
| Wetland Hydrology Present? | Yes ___ No ✔ | |

Remarks:
Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Slight depression in field likely collects stormwater and irrigation water to support hydrophytic vegetation. Hydric soils and hydrology were not present, therefore this sample point does not qualify as a wetland.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum (Plot size: ___)** | | | |
| 1. Phalaris arundinacea | 43 | ✔ | FACW |
| 2. Juncus balticus | 32 | ✔ | FACW |
| 3. Thinopyrum intermedium | 8 | | UPL |
| 4. Bromus tectorum | 6 | | UPL |
| 5. Poa pratensis | 5 | | FAC |
| 6. Taraxacum officinale | 2 | | FACU |
| 7. | | | |
| 8. | | | |
| = Total Cover | 96 | | |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 75 | x 2 = | 150 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 2 | x 4 = | 8 |
| UPL species | 14 | x 5 = | 70 |
| Column Totals: | 96 (A) | | 243 (B) |

Prevalence Index = B/A = 2.53

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ___

Remarks:

## SOIL

Sampling Point: SP11

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 3 | 10YR 2/2 | 100 | | | | | Peat | |
| 3 - 8 | 10YR 4/2 | 100 | | | | | Clay | |
| 8 - 18 | 10YR 5/2 | 100 | | | | | Clay | |
| 18 - 24 | 10YR 4/2 | 100 | | | | | 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.)**

___ 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 ✔**

Remarks:

Depleted layer needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:


**Sample Point 11**


**Sample Point 11**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-14

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP12

Investigator(s): Cara Glabau, Elena Capson  Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Slope  Local relief (concave, convex, none): Linear  Slope (%): 3

Subregion (LRR): D 28A  Lat: 41.1118335  Long: -112.10155  Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ___ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Area is slightly sloped, likely draining stormwater and irrigation water to support hydrophytic vegetation. Hydric soils were not present, meaning this area likely does not hold water for long periods, therefore this sample point does not qualify as a wetland.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Phalaris arundinacea | 31 | ✔ | FACW |
| 2. Juncus balticus | 27 | ✔ | FACW |
| 3. Thinopyrum intermedium | 22 | ✔ | UPL |
| 4. Carex praegracilis | 12 | | FACW |
| 5. Taraxacum officinale | 6 | | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 98 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 70 | x 2 = | 140 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 6 | x 4 = | 24 |
| UPL species | 22 | x 5 = | 110 |
| Column Totals: | 98 (A) | | 274 (B) |

Prevalence Index = B/A = 2.79

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP12

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 5YR 2.5/2 | 100 | | | | | Peat | |
| 2 - 12 | 2.5Y 4/2 | 100 | | | | | Clay | |
| 12 - 24 | 10YR 4/2 | 100 | | | | | 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.)**

___ 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 ✔

Remarks:

Depleted layer needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ____________
Water Table Present? Yes ______ No ✔ Depth (inches): ____________
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ____________

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:

Conditions of soil were moist but not saturated in comparison to truly saturated soils within the delineation area.


**Sample Point 12**


**Sample Point 12**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP13

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11193283 Long: -112.10159633 Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ______ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ______) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ______) | | | |
| 1. Thinopyrum intermedium | 51 | ✔ | UPL |
| 2. Juncus balticus | 21 | ✔ | FACW |
| 3. Bromus tectorum | 12 | | UPL |
| 4. Carex praegracilis | 8 | | FACW |
| 5. Taraxacum officinale | 3 | | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 95 | | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 29 | x 2 = 58 |
| FAC species | 0 | x 3 = 0 |
| FACU species | 3 | x 4 = 12 |
| UPL species | 63 | x 5 = 315 |
| Column Totals: | 95 (A) | 385 (B) |

Prevalence Index = B/A = 4.05

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP13

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 10YR 3/3 | 100 | | | | | Peat | |
| 2 - 5 | 10YR 2/1 | 100 | | | | | Clay Loam | |
| 5 - 7 | 10YR 8/1 | 100 | | | | | Clay | |
| 7 - 12 | 5Y 4/2 | 100 | | | | | Clay | |
| 12 - 20 | 2.5Y 3/1 | 100 | | | | | Clay | |
| 20 - 24 | 2.5Y 4/2 | 100 | | | | | 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.)**

___ 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** ✔

Remarks:

Reduced layer is not thick enough to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:


**Sample Point 13**


**Sample Point 13**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP14

Investigator(s): Merissa Davis Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11413655 Long: -112.10312058 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ______ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Cattle also active in area.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ______) | | | |
| 1. Lepidium latifolium | 40 | ✔ | FAC |
| 2. Thinopyrum intermedium | 35 | ✔ | UPL |
| 3. Juncus balticus | 15 | | FACW |
| 4. Taraxacum officinale | 5 | | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 95 | | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 5 % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 15 | x 2 = 30 |
| FAC species | 40 | x 3 = 120 |
| FACU species | 5 | x 4 = 20 |
| UPL species | 35 | x 5 = 175 |
| Column Totals: | 95 (A) | 345 (B) |

Prevalence Index = B/A = 3.63

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP14

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 3 | 2.5Y 3/2 | 100 | | | | | Clay | |
| 3 - 6 | 2.5Y 3/2 | 100 | | | | | Clay | lots of organic matter |
| 6 - 24 | 10YR 4/2 | 100 | | | | | 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.)**

- ___ 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 ✔**

Remarks:

Reduced matrix needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:


**Sample Point 14**

**Sample Point 14**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP15

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 5

Subregion (LRR): D 28A Lat: 41.11135033 Long: -112.100865 Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ |
| Wetland Hydrology Present? | Yes ____ | No ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Elaeagnus angustifolia | 12 | ✔ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 12 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Hordeum pusillum | 77 | ✔ | FACU |
| 2. Bromus tectorum | 5 | | UPL |
| 3. Cirsium arvense | 5 | | FACU |
| 4. Thinopyrum intermedium | 5 | | UPL |
| 5. Descurainia pinnata | 3 | | UPL |
| 6. Erodium cicutarium | 3 | | UPL |
| 7. Lepidium campestre | 2 | | UPL |
| 8. | | | |
| | 100 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ____ % 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: | 50.00 | (A/B) |

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 12 | x 3 = | 36 |
| FACU species | 82 | x 4 = | 328 |
| UPL species | 18 | x 5 = | 90 |
| Column Totals: | 112 (A) | | 454 (B) |

Prevalence Index = B/A = 4.05

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP15

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 8 | 2.5Y 4/4 | 100 | | | | | Clay Loam | |
| 8 - 18 | 2.5Y 5/2 | 100 | | | | | Clay Loam | |
| 18 - 24 | 2.5Y 3/2 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ | Depth (inches): ______ |
| Water Table Present? | Yes ______ | No ✔ | Depth (inches): ______ |
| Saturation Present? (includes capillary fringe) | Yes ______ | No ✔ | Depth (inches): ______ |

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:

# WDC SR-177, SR-193 to 1800 North

UDOT


**Sample Point 15**


**Sample Point 15**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP16

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11138933 Long: -112.1008455 Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | ✔ | |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Soils and vegetation are likely caused by nearby irrigation practices, causing inconsistent surface water to support hydric soil development and hydrophytic vegetation growth. No hydrology was present at the time of the delineation, and therefore this is not a wetland.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Carex praegracilis | 40 | ✔ | FACW |
| 2. Phalaris arundinacea | 22 | ✔ | FACW |
| 3. Poa pratensis | 12 | | FAC |
| 4. Juncus balticus | 8 | | FACW |
| 5. Thinopyrum intermedium | 5 | | UPL |
| 6. Bromus tectorum | 2 | | UPL |
| 7. Melilotus officinalis | 2 | | FACU |
| 8. Taraxacum officinale | 2 | | FACU |
| = Total Cover | 93 | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 70 | x 2 = 140 |
| FAC species | 12 | x 3 = 36 |
| FACU species | 4 | x 4 = 16 |
| UPL species | 7 | x 5 = 35 |
| Column Totals: | 93 (A) | 227 (B) |

Prevalence Index = B/A = 2.44

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP16

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 5YR 2.5/2 | 100 | | | | | Mucky Loam/Clay | |
| 4 - 16 | 7.5YR 5/2 | 100 | | | | | Clay | |
| 16 - 24 | 2.5Y 6/2 | 100 | | | | | 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.)**

- ___ 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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:

Soil was moist but not fully saturated to the extent that was present at other points throughout the delineation area.


**Sample Point 16**


**Sample Point 16**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP17

Investigator(s): Merissa Davis Section, Township, Range: S06 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11471857 Long: -112.10552578 Datum: NAD83_2011

Soil Map Unit Name: WaA - Warm Springs 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 ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ______ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Cattle also active in area.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Thinopyrum intermedium | 65 | ✔ | UPL |
| 2. Juncus balticus | 10 | | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 75 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 65 | x 5 = | 325 |
| Column Totals: | 75 (A) | | 345 (B) |

Prevalence Index = B/A = 4.60

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP17

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 2.5Y 2.5/1 | 100 | | | | | Loam | lot of organic matter |
| 2 - 14 | 10YR 4/2 | 100 | | | | | Clay Loam | |
| 14 - 24 | 7.5YR 4/3 | 100 | | | | | Silt | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔**

Remarks:

Depleted layer needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ | Depth (inches): ___ |
| Water Table Present? | Yes ✔ | No ___ | Depth (inches): 22 |
| Saturation Present? (includes capillary fringe) | Yes ✔ | No ___ | Depth (inches): 18 |

**Wetland Hydrology Present? Yes ___ No ✔**

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

Remarks:

Saturation and water table do not occur within 12" of the surface and therefore do not qualify for wetland hydrology.


**Sample Point 17**

**Sample Point 17**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP18

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11048217 Long: -112.0997755 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** Yes ✔ No ____

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |

| Sapling/Shrub Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |

| Herb Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Juncus balticus | 82 | ✔ | FACW |
| 2. Lepidium campestre | 10 | | UPL |
| 3. Dipsacus fullonum | 6 | | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 98 | | |

| Woody Vine Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 82 | x 2 = | 164 |
| FAC species | 6 | x 3 = | 18 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 10 | x 5 = | 50 |
| Column Totals: | 98 (A) | | 232 (B) |

Prevalence Index = B/A = 2.36

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP18

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 2.5YR 2.5/1 | 100 | | | | | Peat | |
| 2 - 5 | 10YR 3/3 | 100 | | | | | Clay Loam | |
| 6 - 20 | 10YR 5/1 | 100 | | | | | Clay | |
| 20 - 24 | 10YR 5/2 | 100 | | | | | 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.)**

- ___ 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** ____

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ____

Water Table Present? Yes ✔ No ____ Depth (inches): 16

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

**Wetland Hydrology Present?** **Yes** ✔ **No** ____

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

Remarks:


**Sample Point 18**


**Sample Point 18**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP19

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): D 28A Lat: 41.11054417 Long: -112.0997335 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ______ No ✔

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Phalaris arundinacea | 54 | ✔ | FACW |
| 2. Rhynchospora nivea | 34 | ✔ | UPL |
| 3. Lepidium campestre | 6 | | UPL |
| 4. Cirsium arvense | 3 | | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 97 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 54 | x 2 = | 108 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 3 | x 4 = | 12 |
| UPL species | 40 | x 5 = | 200 |
| Column Totals: | 97 (A) | | 320 (B) |

Prevalence Index = B/A = 3.29

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP19

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 5 | 10YR 4/2 | 100 | | | | | Clay Loam | |
| 5 - 16 | 10YR 4/2 | 100 | | | | | Clay | |
| - | 10YR 5/2 | 100 | | | | | 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.)**

___ 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** ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ___
Water Table Present? Yes ___ No ✔ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 14

**Wetland Hydrology Present?** **Yes** ___ **No** ✔

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

Remarks:

Saturation must occur within the top 12 inches to qualify as wetland hydrology.

**WDC SR-177, SR-193 to 1800 North**
UDOT


**Sample Point 19**


**Sample Point 19**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP20

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11066 Long: -112.1003285 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | ✔ | |

**Is the Sampled Area within a Wetland?** **Yes** ______ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. This depression likely holds stormwater runoff for short periods of time, supporting the growth of hydrophytic vegetation but not retaining water consistently enough to develop hydric soils. Due to the lack of hydric soil indicators, this area is not a wetland.

## VEGETATION – Use scientific names of plants.

| Stratum | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Phalaris arundinacea | 58 | ✔ | FACW |
| 2. Juncus balticus | 32 | ✔ | FACW |
| 3. Thinopyrum intermedium | 8 | | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 98 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 8 | x 5 = | 40 |
| Column Totals: | 98 (A) | | 220 (B) |

Prevalence Index = B/A = 2.24

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ______

Remarks:

## SOIL

Sampling Point: SP20

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 10YR 3/1 | 100 | | | | | Clay Loam | |
| 2 - 16 | 10YR 4/2 | 100 | | | | | Clay | |
| 16 - 24 | 10YR 5/3 | 100 | | | | | 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.)**

- ___ 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** ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ | Depth (inches): ______ |
| Water Table Present? | Yes ______ | No ✔ | Depth (inches): ______ |
| Saturation Present? (includes capillary fringe) | Yes ✔ | No ______ | Depth (inches): 3 |

**Wetland Hydrology Present?** **Yes** ✔ **No** ______

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

Remarks:


**Sample Point 20**


**Sample Point 20**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-14

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP21

Investigator(s): Merissa Davis  Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Depression  Local relief (concave, convex, none): Concave  Slope (%): 1

Subregion (LRR): D 28A  Lat: 41.10992525  Long: -112.0988596  Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed?  Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ |
| Hydric Soil Present? | Yes ✔ | No ___ |
| Wetland Hydrology Present? | Yes ✔ | No ___ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ___

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Phalaris arundinacea | 25 | ✔ | FACW |
| 2. Phragmites australis | 15 | ✔ | FACW |
| 3. Carex praegracilis | 15 | ✔ | FACW |
| 4. Conium maculatum | 15 | ✔ | FACW |
| 5. Dipsacus fullonum | 10 | | FAC |
| 6. Juncus balticus | 10 | | FACW |
| 7. Mentha arvensis | 8 | | FACW |
| 8. | | | |
| | 98 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

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

**Dominance Test worksheet:**

| | | |
|---|---|---|
| Number of Dominant Species That Are OBL, FACW, or FAC: | 4 | (A) |
| Total Number of Dominant Species Across All Strata: | 4 | (B) |
| Percent of Dominant Species That Are OBL, FACW, or FAC: | 100.00 | (A/B) |

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 88 | x 2 = 176 |
| FAC species | 10 | x 3 = 30 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 98 (A) | 206 (B) |

Prevalence Index = B/A = 2.10

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ___

Remarks:

## SOIL

Sampling Point: SP21

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 8 | 10YR 3/2 | 100 | | | | | Silt Loam | |
| 8 - 20 | 7.5YR 3/1 | 100 | | | | | 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.)**

- ___ 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 ___

Remarks:

Soil pit not deep enough to confirm depleted matrix. Thick dark surface assumed.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ✔ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ___ | Depth (inches): 0 |
| Water Table Present? | Yes ✔ | No ___ | Depth (inches): 4 |
| Saturation Present? (includes capillary fringe) | Yes ✔ | No ___ | Depth (inches): 0 |

**Wetland Hydrology Present?** Yes ✔ No ___

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

Remarks:

Standing water surrounding sample point.


**Sample Point 21**

**Sample Point 21**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP22

Investigator(s): Merissa Davis Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 5

Subregion (LRR): D 28A Lat: 41.11001003 Long: -112.0987428 Datum: NAD83_2011

Soil Map Unit Name: PaD - Parleys loam, 6 to 10 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ 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 | Is the Sampled Area within a Wetland? Yes ______ No ✔ |
| Hydric Soil Present? | Yes | No ✔ | |
| Wetland Hydrology Present? | Yes ✔ | No | |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ______) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ______) | | | |
| 1. Phragmites australis | 65 | ✔ | FACW |
| 2. Dipsacus fullonum | 15 | | FAC |
| 3. Conium maculatum | 10 | | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 90 | | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 75 | x 2 = | 150 |
| FAC species | 15 | x 3 = | 45 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 90 (A) | | 195 (B) |

Prevalence Index = B/A = 2.16

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ______

Remarks:

## SOIL

Sampling Point: SP22

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 18 | 5Y 4/2 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

Value too high to qualify for "thick dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ✔ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ______ Depth (inches): 0

Water Table Present? Yes ✔ No ______ Depth (inches): 5

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:


**Sample Point 22**

**Sample Point 22**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP23

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11054133 Long: -112.10118667 Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ____

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Stratum | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | ____ = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | ____ = Total Cover | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Distichlis spicata | 42 | ✔ | FAC |
| 2. Thinopyrum intermedium | 33 | ✔ | UPL |
| 3. Juncus balticus | 25 | ✔ | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 = Total Cover | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | ____ = Total Cover | | |

% Bare Ground in Herb Stratum ____ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 25 | x 2 = | 50 |
| FAC species | 42 | x 3 = | 126 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 33 | x 5 = | 165 |
| Column Totals: | 100 (A) | | 341 (B) |

Prevalence Index = B/A = 3.41

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ____

Remarks:

## SOIL

Sampling Point: SP23

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 2.5YR 2.5/1 | 100 | | | | | Mucky Peat | |
| 1 - 5 | 10YR 3/2 | 100 | | | | | Clay | |
| 5 - 24 | 2.5Y 4/2 | 97 | 7.5YR 5/6 | 3 | C | M | 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.)**

- ___ 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** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ___ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 2

**Wetland Hydrology Present?** **Yes** ✔ **No** ___

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

Remarks:


**Sample Point 23 – Wetland area photos taken at sample point location, neglected to take photos of sample**


**Sample Point 23 – Wetland area photos taken at sample point location, neglected to take photos of sample**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-14

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP24

Investigator(s): Cara Glabau, Elena Capson  Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat  Local relief (concave, convex, none): None  Slope (%): 0

Subregion (LRR): D 28A  Lat: 41.11065967  Long: -112.1013635  Datum: NAD83_2011

Soil Map Unit Name: WgA - Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ 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 ✔ |
| Hydric Soil Present? | Yes ______ | No ✔ |
| Wetland Hydrology Present? | Yes ______ | No ✔ |

**Is the Sampled Area within a Wetland?** Yes ______ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ______) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ______) | | | |
| 1. Thinopyrum intermedium | 96 | ✔ | UPL |
| 2. Distichlis spicata | 2 | | FAC |
| 3. Juncus balticus | 2 | | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: | 1 | (B) |
| Percent of Dominant Species That Are OBL, FACW, or FAC: | 0.00 | (A/B) |

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 2 | x 2 = | 4 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 96 | x 5 = | 480 |
| Column Totals: | 100 (A) | | 490 (B) |

Prevalence Index = B/A = 4.90

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP24

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 3 | 7.5YR 3/1 | 100 | | | | | Clay Loam | |
| 3 - 24 | 10YR 4/2 | 100 | | | | | 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.)**

- ___ 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** ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No ✔ | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes ___ | No ✔ | Depth (inches): ___ |

**Wetland Hydrology Present?** **Yes** ___ **No** ✔

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

Remarks:


**Sample Point 24**


**Sample Point 24**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP25

Investigator(s): Merissa Davis Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 5

Subregion (LRR): D 28A Lat: 41.10997077 Long: -112.0986666 Datum: NAD83_2011

Soil Map Unit Name: PaD - Parleys loam, 6 to 10 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ |
| Wetland Hydrology Present? | Yes ____ | No ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Elaeagnus angustifolia | 5 | ✔ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 5 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Thinopyrum intermedium | 40 | ✔ | UPL |
| 2. Lepidium latifolium | 15 | | FAC |
| 3. Conioselinum scopulorum | 10 | | FACW |
| 4. Dipsacus fullonum | 8 | | FAC |
| 5. Mentha arvensis | 3 | | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 76 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ____ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 13 | x 2 = 26 |
| FAC species | 28 | x 3 = 84 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 40 | x 5 = 200 |
| Column Totals: | 81 (A) | 310 (B) |

Prevalence Index = B/A = 3.82

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP25

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 7 | 10YR 4/2 | 100 | | | | | Loam | |
| 7 - 18 | 10YR 4/3 | 100 | | | | | Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ____________
Water Table Present? Yes ______ No ✔ Depth (inches): ____________
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ____________

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:


**Sample Point 25**

**Sample Point 25**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP26

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.10915567 Long: -112.09951483 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | ✔ | |
| Wetland Hydrology Present? | ✔ | |

**Is the Sampled Area within a Wetland?** Yes ✔ No ____

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Eleocharis palustris | 21 | ✔ | OBL |
| 2. Phalaris arundinacea | 19 | ✔ | FACW |
| 3. Lepidium campestre | 15 | ✔ | UPL |
| 4. Distichlis spicata | 13 | | FAC |
| 5. Juncus balticus | 12 | | FACW |
| 6. Taraxacum officinale | 12 | | FACU |
| 7. Thinopyrum intermedium | 8 | | UPL |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 21 | x 1 = | 21 |
| FACW species | 31 | x 2 = | 62 |
| FAC species | 13 | x 3 = | 39 |
| FACU species | 12 | x 4 = | 48 |
| UPL species | 23 | x 5 = | 115 |
| Column Totals: | 100 (A) | | 285 (B) |

Prevalence Index = B/A = 2.85

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP26

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 7.5YR 2.5/1 | 100 | | | | | Mucky Peat | |
| 2 - 8 | 2.5Y 4/2 | 100 | | | | | Clay | |
| 8 - 24 | 2.5Y 5/2 | 100 | 10YR 6/8 | 12 | C | M | 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.)**

- ___ 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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ✔ No ______ Depth (inches): 19

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** **Yes** ✔ **No** ______

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

Remarks:


**Sample Point 26**


**Sample Point 26**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP27

Investigator(s): Merissa Davis Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.10630343 Long: -112.09624045 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ |
| Wetland Hydrology Present? | Yes ____ | No ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Thinopyrum intermedium | 65 | ✔ | UPL |
| 2. Carex praegracilis | 35 | ✔ | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 35 | x 2 = | 70 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 65 | x 5 = | 325 |
| Column Totals: | 100 (A) | | 395 (B) |

Prevalence Index = B/A = 3.95

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP27

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 5Y 2.5/2 | 100 | | | | | Loam | High organic content |
| 4 - 10 | 10YR 3/2 | 100 | | | | | Clay Loam | |
| 10 - 20 | 10YR 4/2 | 100 | | | | | 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.)**

___ 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** ✔

Remarks:

Does not qualify for hydric soil. Reduced matrix needs redox to qualify for "depleted below dark surface" or "thick dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 18

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:

Saturation must occur within the top 12 inches to qualify as wetland hydrology.


**Sample Point 27**

**Sample Point 27**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP28

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11002667 Long: -112.099889 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ |
| Hydric Soil Present? | Yes ✔ | No ___ |
| Wetland Hydrology Present? | Yes ✔ | No ___ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ___

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Juncus balticus | 48 | ✔ | FACW |
| 2. Eleocharis obtusa | 26 | ✔ | OBL |
| 3. Dipsacus fullonum | 18 | | FAC |
| 4. Phalaris arundinacea | 8 | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 26 | x 1 = | 26 |
| FACW species | 56 | x 2 = | 112 |
| FAC species | 18 | x 3 = | 54 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 192 (B) |

Prevalence Index = B/A = 1.92

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ___

Remarks:

## SOIL

Sampling Point: SP28

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 10YR 2/2 | 100 | | | | | Muck | |
| 1 - 4 | 10YR 3/2 | 100 | | | | | Clay Loam | |
| 4 - 24 | 2.5Y 5/2 | 92 | 7.5YR 5/8 | 8 | C | PL | 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.)**

- ___ 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 ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ✔ No ______ Depth (inches): 15

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:


**Sample Point 28**


**Sample Point 28**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP29

Investigator(s): Merissa Davis Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.1059338 Long: -112.09592727 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ |
| Hydric Soil Present? | Yes ✔ | No ___ |
| Wetland Hydrology Present? | Yes ✔ | No ___ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ___

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Phragmites australis | 35 | ✔ | FACW |
| 2. Juncus balticus | 25 | ✔ | FACW |
| 3. Phalaris arundinacea | 20 | ✔ | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 80 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 80 | x 2 = 160 |
| FAC species | 0 | x 3 = 0 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 80 (A) | 160 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ___

Remarks:

## SOIL

Sampling Point: SP29

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 5 | 7.5YR 3/1 | 100 | | | | | Loam | |
| 5 - 20 | 5YR 4/1 | 100 | | | | | 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.)**

- ___ 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 ______

Remarks:

Soil pit was not deep enough to confirm depleted matrix. Thick dark surface assumed.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:

Low area where water appears to have at least previously traveled or sat. No hydrology currently, but secondary indicators are met.


**Sample Point 29**


**Sample Point 29**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP30

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 3

Subregion (LRR): D 28A Lat: 41.1101158 Long: -112.0997438 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | ✔ | |

**Is the Sampled Area within a Wetland?** Yes ___ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. Elaeagnus angustifolia | 5 | ✔ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 5 | = Total Cover | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Phalaris arundinacea | 37 | ✔ | FACW |
| 2. Thinopyrum intermedium | 28 | ✔ | UPL |
| 3. Taraxacum officinale | 12 | | FACU |
| 4. Cirsium arvense | 8 | | FACU |
| 5. Lepidium campestre | 3 | | UPL |
| 6. Chenopodium album | 2 | | FACU |
| 7. | | | |
| 8. | | | |
| | 90 | = Total Cover | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ___ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 37 | x 2 = 74 |
| FAC species | 5 | x 3 = 15 |
| FACU species | 22 | x 4 = 88 |
| UPL species | 31 | x 5 = 155 |
| Column Totals: | 95 (A) | 332 (B) |

Prevalence Index = B/A = 3.49

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP30

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 7.5YR 2.5/2 | 100 | | | | | Peat | |
| 1 - 12 | 7.5YR 4/2 | 100 | | | | | Clay | |
| 12 - 24 | 7.5YR 5/2 | 91 | 7.5YR 5/6 | 9 | C | PL | 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.)**

- ___ 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 ✔

Remarks:

Although redox and a reduced matrix if present, this does not fit the requirements of any hydric soil indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ | Depth (inches): ___ |
| Water Table Present? | Yes ✔ | No ___ | Depth (inches): 22 |
| Saturation Present? (includes capillary fringe) | Yes ✔ | No ___ | Depth (inches): 0 |

**Wetland Hydrology Present?** Yes ✔ No ___

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

Remarks:


**Sample Point 30**


**Sample Point 30**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-14

Applicant/Owner: UDOT State: Utah Sampling Point: SP31

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S05 T4N R2W

Landform (hillslope, terrace, etc.): Berm Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR): D 28A Lat: 41.11017633 Long: -112.09976267 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Phalaris arundinacea | 59 | ✔ | FACW |
| 2. Thinopyrum intermedium | 38 | ✔ | UPL |
| 3. Dipsacus fullonum | 2 | | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 99 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 59 | x 2 = | 118 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 38 | x 5 = | 190 |
| Column Totals: | 99 (A) | | 314 (B) |

Prevalence Index = B/A = 3.17

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP31

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 3 | 7.5YR 3/3 | | | | | | Loam | |
| 3 - 20 | 7.5YR 4/3 | 100 | | | | | Clay Loam | |
| 20 - 24 | 7.5YR 4/3 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ | Depth (inches): ______ |
| Water Table Present? | Yes ✔ | No ______ | Depth (inches): 23 |
| Saturation Present? (includes capillary fringe) | Yes ✔ | No ______ | Depth (inches): 23 |

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:

Saturation and water table too deep to qualify for indicators.


**Sample Point 31**


**Sample Point 31**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP32

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.1259435 Long: -112.1082355 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ___ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Hydrophytic vegetation present, likely due to adjacent wetland conditions and intermittent hydrology that may be present from adjacent wetlands. No hydric soils or hydrology were present. Although hydrophytic vegetation was present, a change in dominance was clear to define this upland boundary.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Carex praegracilis | 33 | ✔ | FACW |
| 2. Bromus inermis | 25 | ✔ | FACU |
| 3. Juncus balticus | 25 | ✔ | FACW |
| 4. Bromus tectorum | 6 | | UPL |
| 5. Eragrostis curvula | 5 | | UPL |
| 6. Hordeum murinum | 4 | | FACU |
| 7. Deschampsia caespitosa | 2 | | FACW |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 60 | x 2 = | 120 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 29 | x 4 = | 116 |
| UPL species | 11 | x 5 = | 55 |
| Column Totals: | 100 (A) | | 291 (B) |

Prevalence Index = B/A = 2.91

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP32

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

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0 - 3 | 7.5YR 3/2 | 100 | | | | | Clay Loam | |
| 3 - 18 | 10YR 3/2 | 100 | | | | | Clay | |
| 18 - 24 | 10YR 4/3 | 100 | | | | | 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.)**

___ 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 ✔**

Remarks:

Depleted layer has chroma too high to qualify for "depleted below dark surface" or "thick dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:


**Sample Point 32**


**Sample Point 32**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP33

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.12599333 Long: -112.10789617 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ | **Is the Sampled Area within a Wetland?** | **Yes ✔ No ___** |
| Hydric Soil Present? | Yes ✔ No ___ | | |
| Wetland Hydrology Present? | Yes ✔ No ___ | | |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Phragmites australis | 44 | ✔ | FACW |
| 2. Carex praegracilis | 20 | ✔ | FACW |
| 3. Juncus balticus | 20 | ✔ | FACW |
| 4. Phalaris arundinacea | 16 | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 100 | x 2 = | 200 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 200 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ___**

Remarks:

## SOIL

Sampling Point: SP33

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 10YR 4/2 | 100 | | | | | Mucky Loam/Clay | |
| 2 - 8 | 7.5YR 4/2 | 92 | 7.5YR 5/8 | 8 | C | M | Silty Clay | |
| 8 - 10 | 10YR 3/3 | 100 | | | | | Loam | |
| 10 - 24 | 10YR 4/1 | 100 | | | | | 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.)**

- ___ 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** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ | Depth (inches): ___ |
| Water Table Present? | Yes ✔ | No ___ | Depth (inches): 22 |
| Saturation Present? (includes capillary fringe) | Yes ✔ | No ___ | Depth (inches): 0 |

**Wetland Hydrology Present?** **Yes** ✔ **No** ___

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

Remarks:


**Sample Point 33**


**Sample Point 33**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP34

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.1260085 Long: -112.1079565 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ____

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Phalaris arundinacea | 30 | ✔ | FACW |
| 2. Juncus balticus | 25 | ✔ | FACW |
| 3. Poa pratensis | 17 | | FAC |
| 4. Lolium perenne ssp. perenne | 16 | | UPL |
| 5. Distichlis spicata | 8 | | FAC |
| 6. Thinopyrum intermedium | 4 | | UPL |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 55 | x 2 = 110 |
| FAC species | 25 | x 3 = 75 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 20 | x 5 = 100 |
| Column Totals: | 100 (A) | 285 (B) |

Prevalence Index = B/A = 2.85

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ____

Remarks:

## SOIL

Sampling Point: SP34

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 10YR 4/3 | 100 | | | | | Silt | |
| 1 - 18 | 10YR 4/2 | 90 | 7.5YR 5/8 | 10 | C | M | Silty Clay | |
| 18 - 20 | 7.5YR 4/2 | 92 | 7.5YR 5/6 | 8 | C | M | Clay | |
| 20 - 24 | 10YR 4/2 | 100 | | | | | 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.)**

- ___ 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 ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:


**Sample Point 34**


**Sample Point 34**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-16

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP35

Investigator(s): Merissa Davis  Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Depression  Local relief (concave, convex, none): Concave  Slope (%): 0

Subregion (LRR): D 28A  Lat: 41.12375623  Long: -112.10810692  Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed?  Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ 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 ✔ | Is the Sampled Area within a Wetland? | Yes ______ No ✔ |
| Hydric Soil Present? | Yes ______ | No ✔ | | |
| Wetland Hydrology Present? | Yes ______ | No ✔ | | |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Festuca rubra | 40 | ✔ | FAC |
| 2. Thinopyrum intermedium | 35 | ✔ | UPL |
| 3. Juncus balticus | 15 | | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 90 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______  % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 15 | x 2 = | 30 |
| FAC species | 40 | x 3 = | 120 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 35 | x 5 = | 175 |
| Column Totals: | 90 (A) | | 325 (B) |

Prevalence Index = B/A = 3.61

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP35

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 5Y 2.5/1 | 100 | | | | | Loam | Sod/high organic matter |
| 2 - 9 | 10YR 3/2 | 100 | | | | | Clay Loam | |
| 9 - 20 | 10YR 4/2 | 100 | | | | | Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

Reduced matrix needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ___ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ___ No ✔

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

Remarks:


**Sample Point 35**


**Sample Point 35**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP36

Investigator(s): Merissa Davis Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.132377 Long: -112.10748797 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:
Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Depression does not qualify as a wetland but appears to hold water as a man-made stormwater detention pond. This was dry at the time of the delineation but may be inundated during storm events.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Taraxacum officinale | 50 | ✔ | FACU |
| 2. Erodium cicutarium | 10 | | UPL |
| 3. Medicago sativa ssp. sativa | 10 | | UPL |
| 4. Phragmites australis | 10 | | FACW |
| 5. Descurainia pinnata | 5 | | UPL |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 85 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 10 | x 2 = 20 |
| FAC species | 0 | x 3 = 0 |
| FACU species | 50 | x 4 = 200 |
| UPL species | 25 | x 5 = 125 |
| Column Totals: | 85 (A) | 345 (B) |

Prevalence Index = B/A = 4.05

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP36

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 7.5YR 3/1 | 100 | | | | | Loam | high organic content |
| 2 - 7 | 5YR 3/2 | 100 | | | | | Sandy Loam | |
| 7 - 22 | 10YR 4/2 | 100 | | | | | Silt Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ✔

Remarks:

Reduced matrix needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ___ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ___ **No** ✔

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

Remarks:


**Sample Point 36**


**Sample Point 36**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP37

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.12685583 Long: -112.10957633 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | ✔ | |

**Is the Sampled Area within a Wetland?** **Yes** ______ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. This meadow appears to collect nearby stormwater runoff, which supports hydrophytic vegetation. Hydric soils were not present, and therefore, does not qualify as a wetland.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. Sarcobatus vermiculatus | 10 | ✔ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | 10 | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Distichlis spicata | 43 | ✔ | FAC |
| 2. Calamagrostis canadensis | 40 | ✔ | FACW |
| 3. Spergularia marina | 12 | | OBL |
| 4. Triglochin maritima | 5 | | OBL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 17 | x 1 = 17 |
| FACW species | 40 | x 2 = 80 |
| FAC species | 43 | x 3 = 129 |
| FACU species | 10 | x 4 = 40 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 110 (A) | 266 (B) |

Prevalence Index = B/A = 2.41

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ______

Remarks:

## SOIL

Sampling Point: SP37

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 10YR 5/3 | 100 | | | | | Mucky Peat | |
| 1 - 8 | 10YR 4/2 | 100 | | | | | Silt | |
| 8 - 20 | 10YR 5/3 | 100 | | | | | Silty Clay | |
| 20 - 24 | 10YR 5/2 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | ✔ | |
| Water Table Present? | | ✔ | |
| Saturation Present? (includes capillary fringe) | ✔ | | 10 |

**Wetland Hydrology Present?** Yes ✔ No ___

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

Remarks:


**Sample Point 37**


**Sample Point 37**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-16

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP38

Investigator(s): Cara Glabau, Elena Capson  Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Mound  Local relief (concave, convex, none): Convex  Slope (%): 0

Subregion (LRR): D 28A  Lat: 41.12692217  Long: -112.11001867  Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes  NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ |
| Wetland Hydrology Present? | Yes ____ | No ✔ |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Slight mound of higher elevation with dominant upland vegetation.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. Sarcobatus vermiculatus | 38 | ✔ | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 38 | = Total Cover | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Bromus tectorum | 35 | ✔ | UPL |
| 2. Hordeum murinum | 25 | ✔ | FACU |
| 3. Rhynchospora nivea | 20 | ✔ | UPL |
| 4. Eleocharis palustris | 10 | | OBL |
| 5. Descurainia pinnata ssp. pinnata | 5 | | UPL |
| 6. Lepidium campestre | 5 | | UPL |
| 7. | | | |
| 8. | | | |
| | 100 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ____ % 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 10 | x 1 = | 10 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 63 | x 4 = | 252 |
| UPL species | 65 | x 5 = | 325 |
| Column Totals: | 138 (A) | | 587 (B) |

Prevalence Index = B/A = 4.25

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP38

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 3 | 10YR 2/2 | 100 | | | | | Loam | |
| 3 - 20 | 10YR 3/2 | 100 | | | | | Silty Clay | |
| 20 - 24 | 10YR 4/2 | 100 | | | | | 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.)**

___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 20

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 38**


**Sample Point 38**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP39

Investigator(s): Merissa Davis Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13251267 Long: -112.10824562 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** **Yes ✔** **No ____**

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Phragmites australis | 80 | ✔ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 80 | = Total Cover | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 80 (A) | | 160 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ____**

Remarks:

## SOIL

Sampling Point: SP39

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 5Y 4/1 | 100 | | | | | Silty Clay | |
| 2 - 10 | 10YR 4/2 | 100 | | | | | Sand | |
| 10 - 22 | 10YR 4/2 | 100 | | | | | 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.)**

- ___ 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** ___

Remarks:

This wetland is likely inundated during storm events and appears to maintain enough hydrology beyond those times to support hydrophytic vegetation. Soils are likely regularly changing due to stormwater deposits.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | ✔ | |
| Water Table Present? | ✔ | | 10 |
| Saturation Present? (includes capillary fringe) | ✔ | | 2 |

**Wetland Hydrology Present? Yes** ✔ **No** ___

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

Remarks:

Inundated in other parts of this wetland. Pit was taken on less wet edge.


**Sample Point 39**


**Sample Point 39**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP40

Investigator(s): Merissa Davis Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13244965 Long: -112.10828965 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Convolvulus arvensis | 30 | ✔ | UPL |
| 2. Bromus inermis | 10 | ✔ | FACU |
| 3. Helianthus annuus | 10 | ✔ | FACU |
| 4. Rumex crispus | 10 | ✔ | FAC |
| 5. Cirsium vulgare | 10 | ✔ | FACU |
| 6. Phragmites australis | 5 | | FACW |
| 7. | | | |
| 8. | | | |
| = Total Cover | 75 | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 5 | x 2 = 10 |
| FAC species | 10 | x 3 = 30 |
| FACU species | 30 | x 4 = 120 |
| UPL species | 30 | x 5 = 150 |
| Column Totals: | 75 (A) | 310 (B) |

Prevalence Index = B/A = 4.13

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP40

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 9 | 10YR 3/2 | 100 | | | | | Loam | |
| 9 - 20 | 10YR 4/2 | 100 | | | | | Sand | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:

none


**Sample Point 40**


**Sample Point 40**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-16

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP41

Investigator(s): Cara Glabau, Elena Capson  Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Flat  Local relief (concave, convex, none): None  Slope (%): 0

Subregion (LRR): D 28A  Lat: 41.126077  Long: -112.10831917  Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ |
| Hydric Soil Present? | Yes ✔ | No ___ |
| Wetland Hydrology Present? | Yes ✔ | No ___ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ___

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Meadow, likely previously connected to wetlands on other side of roadway.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Carex praegracilis | 60 | ✔ | FACW |
| 2. Juncus balticus | 30 | ✔ | FACW |
| 3. Distichlis spicata | 10 | | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 210 (B) |

Prevalence Index = B/A = 2.10

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ___

Remarks:

## SOIL

Sampling Point: SP41

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 10YR 2/2 | 100 | | | | | Muck | |
| 4 - 5 | 10YR 3/2 | 100 | | | | | Clay | |
| 5 - 24 | 10YR 4/2 | 92 | 7.5YR 5/6 | 8 | C | M | 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.)**

- ___ 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** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | ✔ | |
| Water Table Present? | | ✔ | |
| Saturation Present? (includes capillary fringe) | ✔ | | 11 |

**Wetland Hydrology Present?** **Yes** ✔ **No** ___

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

Remarks:


**Sample Point 41**


**Sample Point 41**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP42

Investigator(s): Merissa Davis Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13125937 Long: -112.10791038 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ____

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Juncus balticus | 25 | ✔ | FACW |
| 2. Schoenoplectus acutus | 20 | ✔ | OBL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 45 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20 | x 1 = | 20 |
| FACW species | 25 | x 2 = | 50 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 45 (A) | | 70 (B) |

Prevalence Index = B/A = 1.55

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ____

Remarks:

Juncus on edges and bull rush in water. Areas surrounding the sample point location have open, deep water with no vegetation growth.

## SOIL

Sampling Point: SP42

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 3 | 10YR 3/1 | 90 | 7.5YR 5/8 | 10 | | M | Silty Clay | |
| 3 - 12 | 10YR 5/2 | 100 | | | | | Clay | |
| 12 - 20 | 10YR 4/2 | 100 | | | | | 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.)**

- ___ 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** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ✔ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ___ Depth (inches): 1

Water Table Present? Yes ✔ No ___ Depth (inches): 5

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

**Wetland Hydrology Present? Yes** ✔ **No** ___

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

Remarks:

Sample point taken at edge of inundated area.


**Sample Point 42**


**Sample Point 42**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP43

Investigator(s): Merissa Davis Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13127142 Long: -112.1079247 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ | Is the Sampled Area within a Wetland? Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Thinopyrum intermedium | 75 | ✔ | UPL |
| 2. Distichlis spicata | 10 | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 85 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 75 | x 5 = | 375 |
| Column Totals: | 85 (A) | | 405 (B) |

Prevalence Index = B/A = 4.76

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP43

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 10 | 10YR 3/2 | 100 | | | | | Clay | |
| 10 - 20 | 10YR 3/2 | 100 | | | | | Silt Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 43**


**Sample Point 43**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-16

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP44

Investigator(s): Merissa Davis  Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Depression  Local relief (concave, convex, none): Concave  Slope (%): 0

Subregion (LRR): D 28A  Lat: 41.12839188  Long: -112.10800277  Datum: NAD83_2011

Soil Map Unit Name: WaA - Warm Springs 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 ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed?  Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ | **Is the Sampled Area within a Wetland?** Yes ✔ No ___ |
| Hydric Soil Present? | Yes ✔ | No ___ | |
| Wetland Hydrology Present? | Yes ✔ | No ___ | |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Juncus balticus | 85 | ✔ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 85 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 15  % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 85 | x 2 = | 170 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 85 (A) | | 170 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP44

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 7.5YR 2.5/1 | 100 | | | | | Mucky Loam/Clay | |
| 4 - 24 | 10YR 4/2 | 100 | | | | | 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.)**

- ___ 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 ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ✔ No ______ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:


**Sample Point 44**


**Sample Point 44**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP45

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.12607633 Long: -112.10831983 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ____

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Juncus balticus | 40 | ✔ | FACW |
| 2. Distichlis spicata | 35 | ✔ | FAC |
| 3. Thinopyrum intermedium | 25 | ✔ | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 | = Total Cover | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ____ % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 40 | x 2 = | 80 |
| FAC species | 35 | x 3 = | 105 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 25 | x 5 = | 125 |
| Column Totals: | 100 (A) | | 310 (B) |

Prevalence Index = B/A = 3.10

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ____

Remarks:

## SOIL

Sampling Point: SP45

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 10YR 3/1 | 100 | | | | | Muck | |
| 1 - 12 | 10YR 3/2 | 100 | | | | | Clay | |
| 12 - 18 | 10YR 5/3 | 100 | | | | | Clay | |
| 18 - 24 | 7.5YR 7/1 | 100 | | | | | 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.)**

- ___ 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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ✔ No ______ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present? Yes** ✔ **No** ______

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

Remarks:


**Sample Point 45**


**Sample Point 45**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP46

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Berm Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13011617 Long: -112.10789867 Datum: NAD83_2011

Soil Map Unit Name: WaA - Warm Springs 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 ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ | Is the Sampled Area within a Wetland? Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Thinopyrum intermedium | 95 | ✔ | UPL |
| 2. Melilotus officinalis | 5 | | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 95 | x 5 = | 475 |
| Column Totals: | 100 (A) | | 495 (B) |

Prevalence Index = B/A = 4.95

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP46

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 24 | 7.5YR 5/4 | 90 | 7.5YR 4/6 | 10 | RM | M | 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.)**

- ___ 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 ✔

Remarks:

Redox present may be from adjacent intermittent flooding of wetland. Sample point was taken on man-made berm, based on unique coloration compared to other sample points in the area, this was likely sourced from offside fill material.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 46**


**Sample Point 46**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-16

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP47

Investigator(s): Merissa Davis  Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat  Local relief (concave, convex, none): None  Slope (%): 0

Subregion (LRR): D 28A  Lat: 41.13456623  Long: -112.10676793  Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed?  Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic?  (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: ____)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum (Plot size: ____)** | | | |
| 1. Poa pratensis | 30 | ✔ | FAC |
| 2. Thinopyrum intermedium | 25 | ✔ | UPL |
| 3. Distichlis spicata | 20 | ✔ | FAC |
| 4. Trifolium fragiferum | 20 | ✔ | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 95 | | |
| **Woody Vine Stratum (Plot size: ____)** | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 70 | x 3 = | 210 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 25 | x 5 = | 125 |
| Column Totals: | 95 (A) | | 335 (B) |

Prevalence Index = B/A = 3.52

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP47

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 3 | 5YR 2.5/2 | 100 | | | | | Loam | sod |
| 3 - 6 | 7.5YR 3/2 | 100 | | | | | Loam | |
| 11 - 20 | 10YR 3/1 | 100 | | | | | Sandy Loam | |
| 6 - 11 | 10YR 4/2 | 100 | | | | | Sand | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

Depleted layer needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 47**


**Sample Point 47**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP48

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 2

Subregion (LRR): D 28A Lat: 41.13833533 Long: -112.10434867 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ |
| Hydric Soil Present? | Yes ✔ | No ___ |
| Wetland Hydrology Present? | Yes ✔ | No ___ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ___

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Gradual slope towards adjacent pond.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Phalaris arundinacea | 40 | ✔ | FACW |
| 2. Juncus balticus | 35 | ✔ | FACW |
| 3. Typha angustifolia | 20 | ✔ | OBL |
| 4. Rumex crispus | 5 | | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20 | x 1 = | 20 |
| FACW species | 75 | x 2 = | 150 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 185 (B) |

Prevalence Index = B/A = 1.85

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ___

Remarks:

## SOIL

Sampling Point: SP48

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 10YR 3/1 | 100 | | | | | Muck | |
| 2 - 12 | 10YR 3/2 | 100 | | | | | Clay | |
| 12 - 24 | 7.5YR 6/4 | 100 | | | | | 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.)**

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [x] 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 [x] No ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Vis ble on Aerial Imagery (B7)
- [ ] 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 Tilled 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)
- [x] FAC-Neutral Test (D5)

**Field Observations:**

| | Yes | No | Depth (inches) |
|---|---|---|---|
| Surface Water Present? | | ✔ | |
| Water Table Present? | | ✔ | |
| Saturation Present? (includes capillary fringe) | ✔ | | 6 |

**Wetland Hydrology Present?** Yes [x] No ___

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

Remarks:


**Sample Point 48**


**Sample Point 48**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP49

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 1

Subregion (LRR): D 28A Lat: 41.13840833 Long: -112.1043375 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Leymus triticoides | 50 | ✔ | FAC |
| 2. Lactuca serriola | 20 | ✔ | FACU |
| 3. Dipsacus laciniatus | 15 | | FACU |
| 4. Thinopyrum intermedium | 15 | | UPL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 50 | x 3 = | 150 |
| FACU species | 35 | x 4 = | 140 |
| UPL species | 15 | x 5 = | 75 |
| Column Totals: | 100 (A) | | 365 (B) |

Prevalence Index = B/A = 3.65

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP49

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 6 | 10YR 4/3 | 100 | | | | | Clay Loam | |
| 6 - 13 | 7.5YR 5/4 | 100 | | | | | Clay | |
| 13 - 22 | 10YR 4/1 | 100 | | | | | Clay Loam | |
| 22 - 24 | 10YR 4/3 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 49**


**Sample Point 49**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16
Applicant/Owner: UDOT State: Utah Sampling Point: SP50
Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): D 28A Lat: 41.13514907 Long: -112.10658008 Datum: NAD83_2011
Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:
Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum (Plot size: ___)** | | | |
| 1. Distichlis spicata | 20 | ✔ | FAC |
| 2. Poa pratensis | 20 | ✔ | FAC |
| 3. Trifolium fragiferum | 15 | ✔ | FAC |
| 4. Thinopyrum intermedium | 15 | ✔ | UPL |
| 5. Juncus balticus | 10 | | FACW |
| 6. Taraxacum officinale | 5 | | FACU |
| 7. | | | |
| 8. | | | |
| = Total Cover | 85 | | |
| **Woody Vine Stratum (Plot size: ___)** | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 55 | x 3 = | 165 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 15 | x 5 = | 75 |
| Column Totals: | 85 (A) | | 280 (B) |

Prevalence Index = B/A = 3.29

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP50

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 10YR 3/2 | 100 | | | | | Loam | Sod layer |
| 4 - 22 | 10YR 3/2 | 100 | | | | | Silty Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:

moisture around 18 inches but not saturated

**Sample Point 50**

**Sample Point 50**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-16

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP51

Investigator(s): Cara Glabau, Elena Capson  Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat  Local relief (concave, convex, none): None  Slope (%): 0

Subregion (LRR): D 28A  Lat: 41.13877533  Long: -112.10361733  Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ____, or Hydrology ____ significantly disturbed?  Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic?  (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Pasture consistently grazed by horses.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Hordeum murinum | 51 | ✔ | FACU |
| 2. Poa pratensis | 22 | ✔ | FAC |
| 3. Bromus tectorum | 18 | | UPL |
| 4. Taraxacum officinale | 12 | | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 103 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____  % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 0 | x 2 = 0 |
| FAC species | 22 | x 3 = 66 |
| FACU species | 63 | x 4 = 252 |
| UPL species | 18 | x 5 = 90 |
| Column Totals: | 103 (A) | 408 (B) |

Prevalence Index = B/A = 3.96

**Hydrophytic Vegetation Indicators:**

__ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP51

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 20 | 10YR 3/2 | 100 | | | | | Clay Loam | |
| 20 - 24 | 7.5YR 5/4 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 51**


**Sample Point 51**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP52

Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13586468 Long: -112.10622167 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Poa pratensis | 50 | ✔ | FAC |
| 2. Juncus balticus | 10 | | FACW |
| 3. Trifolium fragiferum | 10 | | FAC |
| 4. Taraxacum officinale | 8 | | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 78 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 60 | x 3 = | 180 |
| FACU species | 8 | x 4 = | 32 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 78 (A) | | 232 (B) |

Prevalence Index = B/A = 2.97

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ____

Remarks:

## SOIL

Sampling Point: SP52

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 13 | 5YR 3/2 | 100 | | | | | Loam | |
| 13 - 24 | 7.5YR 4/2 | 100 | | | | | Sandy Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:


**Sample Point 52**


**Sample Point 52**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16
Applicant/Owner: UDOT State: Utah Sampling Point: SP53
Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): D 28A Lat: 41.138693 Long: -112.10482083 Datum: NAD83_2011
Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ | **Is the Sampled Area within a Wetland?** Yes ✔ No ___ |
| Hydric Soil Present? | Yes ✔ No ___ | |
| Wetland Hydrology Present? | Yes ✔ No ___ | |

Remarks:
Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Pasture grazed by goats. Appears to be ponding of high ground water in middle of goat pen, which saturates much of the area before draining through a culvert to the adjacent pond.

## VEGETATION – Use scientific names of plants.

| Stratum | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Phragmites australis | 55 | ✔ | FACW |
| 2. Poa pratensis | 20 | ✔ | FAC |
| 3. Hordeum murinum | 10 | | FACU |
| 4. Melilotus officinalis | 10 | | FACU |
| 5. Taraxacum officinale | 5 | | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 55 | x 2 = | 110 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 25 | x 4 = | 100 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 270 (B) |

Prevalence Index = B/A = 2.70

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP53

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 10 | 10YR 2/2 | 94 | 7.5YR 5/6 | 6 | C | M | Clay | |
| 10 - 24 | 7.5YR 7/3 | 98 | 7.5YR 5/8 | 2 | C | M | 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.)**

- ___ 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 ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:

adjacent surface water, connection to pond


**Sample Point 53**


**Sample Point 53**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP54

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 2

Subregion (LRR): D 28A Lat: 41.13868467 Long: -112.10487033 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ___ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Pasture grazed by goats. Sample point was taken on edge of pasture where grade raised at the fence line.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Poa pratensis | 50 | ✔ | FAC |
| 2. Hordeum murinum | 30 | ✔ | FACU |
| 3. Taraxacum officinale | 15 | | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 95 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 0 | x 2 = 0 |
| FAC species | 50 | x 3 = 150 |
| FACU species | 45 | x 4 = 180 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 95 (A) | 330 (B) |

Prevalence Index = B/A = 3.47

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP54

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 8 | 10YR 3/3 | 100 | | | | | Clay Loam | |
| 8 - 15 | 10YR 5/4 | 100 | | | | | Silt | |
| 15 - 24 | 10YR 3/3 | 100 | | | | | Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:


**Sample Point 54**


**Sample Point 54**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP55

Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13580272 Long: -112.10530723 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Hydrophytic vegetation likely grows due to the small depression where water drains and temporarily collects from wetlands upslope. This area does not have indicators for wetland soils or hydrology and does not qualify as a wetland.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Thinopyrum intermedium | 20 | ✔ | UPL |
| 2. Juncus balticus | 15 | ✔ | FACW |
| 3. Poa pratensis | 15 | ✔ | FAC |
| 4. Carex praegracilis | 15 | ✔ | FACW |
| 5. Taraxacum officinale | 10 | | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 75 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 30 | x 2 = | 60 |
| FAC species | 15 | x 3 = | 45 |
| FACU species | 10 | x 4 = | 40 |
| UPL species | 20 | x 5 = | 100 |
| Column Totals: | 75 (A) | | 245 (B) |

Prevalence Index = B/A = 3.26

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP55

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 7.5YR 4/2 | 100 | | | | | Clay | |
| 4 - 12 | 7.5YR 3/1 | 100 | | | | | Clay | |
| 12 - 24 | 10YR 5/3 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 55**


**Sample Point 55**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-16

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP56

Investigator(s): Cara Glabau, Elena Capson  Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Slope  Local relief (concave, convex, none): Linear  Slope (%): 1

Subregion (LRR): D 28A  Lat: 41.1375285  Long: -112.10435917  Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ |
| Hydric Soil Present? | Yes ✔ | No ___ |
| Wetland Hydrology Present? | Yes ✔ | No ___ |

**Is the Sampled Area within a Wetland?** Yes ✔ No ___

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. Gradual sloping meadow towards pond.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. Salix alba | 10 | ✔ | FACW |
| 2. Elaeagnus angustifolia | 5 | ✔ | FAC |
| 3. | | | |
| 4. | | | |
| | 15 | = Total Cover | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Carex praegracilis | 55 | ✔ | FACW |
| 2. Juncus balticus | 40 | ✔ | FACW |
| 3. Rhynchospora nivea | 5 | | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 | = Total Cover | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 105 | x 2 = 210 |
| FAC species | 5 | x 3 = 15 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 5 | x 5 = 25 |
| Column Totals: | 115 (A) | 250 (B) |

Prevalence Index = B/A = 2.17

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP56

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 10YR 2/2 | 100 | | | | | Peat | |
| 1 - 20 | 10YR 3/1 | 98 | 7.5YR 4/4 | 2 | D | M | Silty Clay | |
| 20 - 24 | 10YR 5/3 | 100 | | | | | 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.)**

- ___ 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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 3

**Wetland Hydrology Present?** **Yes** ✔ **No** ______

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

Remarks:


**Sample Point 56**


**Sample Point 56**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP57

Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13637067 Long: -112.10514258 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ______ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ______) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ______) | | | |
| 1. Bromus tectorum | 40 | ✔ | UPL |
| 2. Poa pratensis | 35 | ✔ | FAC |
| 3. Hordeum murinum | 10 | | FACU |
| 4. Juncus balticus | 8 | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 93 | | |
| **Woody Vine Stratum** (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 8 | x 2 = 16 |
| FAC species | 35 | x 3 = 105 |
| FACU species | 10 | x 4 = 40 |
| UPL species | 40 | x 5 = 200 |
| Column Totals: | 93 (A) | 361 (B) |

Prevalence Index = B/A = 3.88

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP57

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 10 | 10YR 3/2 | 100 | | | | | Loam | |
| 10 - 20 | 10YR 5/3 | 100 | | | | | 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.)**

- ___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 57**

**Sample Point 57**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP58

Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13638078 Long: -112.10512455 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ 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 ______ |
| Hydric Soil Present? | Yes ✔ | No ______ |
| Wetland Hydrology Present? | Yes ✔ | No ______ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ______

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Schoenoplectus acutus | 40 | ✔ | OBL |
| 2. Carex praegracilis | 35 | ✔ | FACW |
| 3. Juncus balticus | 25 | ✔ | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 | = Total Cover | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

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

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40 | x 1 = | 40 |
| FACW species | 60 | x 2 = | 120 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 160 (B) |

Prevalence Index = B/A = 1.60

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ______

Remarks:

## SOIL

Sampling Point: SP58

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 10 | 7.5YR 4/2 | 100 | | | | | Silty Clay | |
| 10 - 18 | 10YR 6/2 | 100 | | | | | 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.)**

- ___ 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** ____

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ✔ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ____ Depth (inches): 1

Water Table Present? Yes ✔ No ____ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 0

**Wetland Hydrology Present? Yes** ✔ **No** ____

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

Remarks:

Sample point taken is on edge of standing surface water which gets deeper towards the middle of the wetland.


**Sample Point 58**


**Sample Point 58**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-16

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP59

Investigator(s): Cara Glabau, Elena Capson  Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat  Local relief (concave, convex, none): None  Slope (%): 0

Subregion (LRR): D 28A  Lat: 41.13726833  Long: -112.10431317  Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____ ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____ ) | | | |
| 1. Poa pratensis | 35 | ✔ | FAC |
| 2. Hordeum murinum | 28 | ✔ | FACU |
| 3. Lolium arundinaceum | 16 | | UPL |
| 4. Veronica arvensis | 13 | | FACU |
| 5. Lamium amplexicaule | 5 | | UPL |
| 6. Matricaria discoidea | 3 | | FACU |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ____ ) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 35 | x 3 = | 105 |
| FACU species | 44 | x 4 = | 176 |
| UPL species | 21 | x 5 = | 105 |
| Column Totals: | 100 (A) | | 386 (B) |

Prevalence Index = B/A = 3.86

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP59

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

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0 - 8 | 10YR 4/3 | 100 | | | | | Clay Loam | |
| 8 - 19 | 10YR 4/2 | 100 | | | | | Silty Clay | |
| 19 - 24 | 10YR 4/3 | 100 | | | | | Silt Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ____________

Water Table Present? Yes ______ No ✔ Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ____________

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 59**


**Sample Point 59**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP60

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 1

Subregion (LRR): D 28A Lat: 41.137489 Long: -112.10426167 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Lolium arundinaceum | 50 | ✔ | UPL |
| 2. Poa pratensis | 35 | ✔ | FAC |
| 3. Carex praegracilis | 5 | | FACW |
| 4. Melilotus officinalis | 5 | | FACU |
| 5. Taraxacum officinale | 5 | | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 5 | x 2 = | 10 |
| FAC species | 35 | x 3 = | 105 |
| FACU species | 10 | x 4 = | 40 |
| UPL species | 50 | x 5 = | 250 |
| Column Totals: | 100 (A) | | 405 (B) |

Prevalence Index = B/A = 4.05

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP60

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

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0 - 6 | 10YR 3/2 | 100 | | | | | Loam | |
| 6 - 8 | 7.5YR 5/4 | 100 | | | | | Clay | |
| 8 - 20 | 10YR 3/2 | 100 | | | | | Silty Clay | |
| 20 - 24 | 7.5YR 5/4 | 100 | | | | | 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.)**

___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ____
Water Table Present? Yes ____ No ✔ Depth (inches): ____
Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

**Wetland Hydrology Present?** Yes ____ No ✔

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

Remarks:


**Sample Point 60**


**Sample Point 60**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16
Applicant/Owner: UDOT State: Utah Sampling Point: SP61
Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): D 28A Lat: 41.1366475 Long: -112.1054976 Datum: NAD83_2011
Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: PEM1/USA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ | **Is the Sampled Area within a Wetland?** Yes ✔ No ___ |
| Hydric Soil Present? | Yes ✔ No ___ | |
| Wetland Hydrology Present? | Yes ✔ No ___ | |

Remarks:
Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Typha latifolia | 40 | ✔ | OBL |
| 2. Carex praegracilis | 35 | ✔ | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 75 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40 | x 1 = | 40 |
| FACW species | 35 | x 2 = | 70 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 75 (A) | | 110 (B) |

Prevalence Index = B/A = 1.46

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP61

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 5 | 7.5YR 2.5/1 | 100 | | | | | Mucky Loam/Clay | |
| 5 - 20 | 7.5YR 3/1 | 100 | | | | | 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.)**

- ___ 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 ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ___

Water Table Present? Yes ✔ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 2

**Wetland Hydrology Present?** Yes ✔ No ___

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

Remarks:

More surface water at the center of the wetland with cattail growth.


**Sample Point 61**


**Sample Point 61**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP62

Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13663912 Long: -112.1055007 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ___ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Poa pratensis | 35 | ✔ | FAC |
| 2. Bromus tectorum | 20 | ✔ | UPL |
| 3. Hordeum murinum | 20 | ✔ | FACU |
| 4. Poa bulbosa | 15 | | FACU |
| 5. Juncus balticus | 8 | | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 98 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 33.33 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 8 | x 2 = 16 |
| FAC species | 35 | x 3 = 105 |
| FACU species | 35 | x 4 = 140 |
| UPL species | 20 | x 5 = 100 |
| Column Totals: | 98 (A) | 361 (B) |

Prevalence Index = B/A = 3.68

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP62

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 18 | 10YR 3/2 | 100 | | | | | Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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: Rocks

Depth (inches): 18

**Hydric Soil Present?** **Yes** ______ **No** ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ____________
Water Table Present? Yes ______ No ✔ Depth (inches): ____________
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ____________

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:


**Sample Point 62**


**Sample Point 62**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP63

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 2

Subregion (LRR): D 28A Lat: 41.13793767 Long: -112.10525317 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ____

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Carex nebrascensis | 35 | ✔ | OBL |
| 2. Juncus balticus | 30 | ✔ | FACW |
| 3. Carex praegracilis | 15 | | FACW |
| 4. Phalaris arundinacea | 15 | | FACW |
| 5. Typha angustifolia | 5 | | OBL |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40 | x 1 = | 40 |
| FACW species | 60 | x 2 = | 120 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 160 (B) |

Prevalence Index = B/A = 1.60

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ____

Remarks:

check sedge species

## SOIL

Sampling Point: SP63

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 10YR 3/2 | 100 | | | | | Mucky Loam/Clay | |
| 2 - 6 | 10YR 4/3 | 100 | | | | | Sandy Clay | |
| 6 - 16 | 10YR 7/2 | 100 | | | | | Clay | |
| 16 - 24 | 7.5YR 6/4 | 100 | | | | | 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.)**

- ___ 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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** **Yes** ✔ **No** ______

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

Remarks:


**Sample Point 63**


**Sample Point 63**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-16

Applicant/Owner: UDOT State: Utah Sampling Point: SP64

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.1379745 Long: -112.10527133 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ___) | | | |
| 1. Vulpia myuros | 40 | ✔ | FACU |
| 2. Hordeum murinum | 35 | ✔ | FACU |
| 3. Lepidium perfoliatum | 15 | | FACU |
| 4. Distichlis spicata | 5 | | FAC |
| 5. Rumex crispus | 5 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 0 | x 2 = 0 |
| FAC species | 10 | x 3 = 30 |
| FACU species | 90 | x 4 = 360 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 100 (A) | 390 (B) |

Prevalence Index = B/A = 3.90

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP64

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 24 | 7.5YR 3/2 | 100 | | | | | Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

Switch soil with sample .63

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:


**Sample Point 64**


**Sample Point 64**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-22

Applicant/Owner: UDOT State: Utah Sampling Point: SP65

Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13811595 Long: -112.10549665 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | ✔ | |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

Inundated from overflow of irrigation ditch. Cause of hydrophytic vegetation and hydrology. No indicators for wetland soils present.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Poa pratensis | 60 | ✔ | FAC |
| 2. Juncus balticus | 35 | ✔ | FACW |
| 3. Taraxacum officinale | 5 | | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 35 | x 2 = | 70 |
| FAC species | 60 | x 3 = | 180 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 270 (B) |

Prevalence Index = B/A = 2.70

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP65

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 20 | 7.5YR 4/2 | 100 | | | | | Silt Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ✔ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ______ Depth (inches): 2

Water Table Present? Yes ✔ No ______ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:

Inundated and saturated from irrigation ditch overflow. Likely dry at different time of year.


**Sample Point 65**


**Sample Point 65**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-22

Applicant/Owner: UDOT State: Utah Sampling Point: SP66

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.139205 Long: -112.10827183 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ 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 ______ |
| Hydric Soil Present? | Yes ✔ | No ______ |
| Wetland Hydrology Present? | Yes ✔ | No ______ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ______

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Carex praegracilis | 35 | ✔ | FACW |
| 2. Phalaris arundinacea | 30 | ✔ | FACW |
| 3. Juncus balticus | 25 | ✔ | FACW |
| 4. Melilotus officinalis | 5 | | FACU |
| 5. Typha angustifolia | 5 | | OBL |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 = Total Cover | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |

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

**Dominance Test worksheet:**

| | | |
|---|---|---|
| Number of Dominant Species That Are OBL, FACW, or FAC: | 3 | (A) |
| Total Number of Dominant Species Across All Strata: | 3 | (B) |
| Percent of Dominant Species That Are OBL, FACW, or FAC: | 100.00 | (A/B) |

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 5 | x 1 = 5 |
| FACW species | 90 | x 2 = 180 |
| FAC species | 0 | x 3 = 0 |
| FACU species | 5 | x 4 = 20 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 100 (A) | 205 (B) |

Prevalence Index = B/A = 2.05

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ______

Remarks:

## SOIL

Sampling Point: SP66

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 2 | 7.5YR 2.5/1 | 100 | | | | | Muck | |
| 2 - 12 | 10YR 3/1 | 88 | 5YR 4/6 | 12 | C | M | Silty Clay | |
| 12 - 24 | 10YR 5/2 | 93 | 7.5YR 5/8 | 7 | C | M | 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.)**

- ___ 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 ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ✔ No ___ Depth (inches): 20

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ___

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

Remarks:


**Sample Point 66**


**Sample Point 66**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-22

Applicant/Owner: UDOT State: Utah Sampling Point: SP67

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): ______ Lat: 41.139218 Long: -112.10831717 Datum: NAD83_2011

Soil Map Unit Name: ______ NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ___ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Hordeum murinum | 42 | ✔ | FACU |
| 2. Lolium arundinaceum | 15 | ✔ | UPL |
| 3. Distichlis spicata | 10 | | FAC |
| 4. Phalaris arundinacea | 10 | | FACW |
| 5. Poa bulbosa | 10 | | FACU |
| 6. Plantago lanceolata | 8 | | FAC |
| 7. Melilotus officinalis | 5 | | FACU |
| 8. | | | |
| | 100 | = Total Cover | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ______ % 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 10 | x 2 = 20 |
| FAC species | 18 | x 3 = 54 |
| FACU species | 57 | x 4 = 228 |
| UPL species | 15 | x 5 = 75 |
| Column Totals: | 100 (A) | 377 (B) |

Prevalence Index = B/A = 3.77

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP67

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 8 | 10YR 4/2 | 100 | | | | | Sandy Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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: Rock

Depth (inches): 8

**Hydric Soil Present?** **Yes** ___ **No** ✔

Remarks:

Soil is very rocky, road base present from historic canal road construction.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

**Wetland Hydrology Present?** **Yes** ___ **No** ✔

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

Remarks:


**Sample Point 67**


**Sample Point 67**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II  City/County: Davis County  Sampling Date: 2024-05-22

Applicant/Owner: UDOT  State: Utah  Sampling Point: SP68

Investigator(s): Merissa Davis  Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): ______  Local relief (concave, convex, none): ______  Slope (%): ______

Subregion (LRR): D 28A  Lat: 41.13815455  Long: -112.10538413  Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes  NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |
| **Is the Sampled Area within a Wetland?** | | ✔ |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Poa pratensis | 35 | ✔ | FAC |
| 2. Hordeum murinum | 30 | ✔ | FACU |
| 3. Lolium arundinaceum | 30 | ✔ | FACU |
| 4. Juncus balticus | 5 | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: | 33.33 | (A/B) |

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 5 | x 2 = 10 |
| FAC species | 35 | x 3 = 105 |
| FACU species | 60 | x 4 = 240 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 100 (A) | 355 (B) |

Prevalence Index = B/A = 3.55

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP68

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 6 | 2.5YR 3/1 | 100 | | | | | Loam | |
| 6 - 24 | 10YR 4/2 | 100 | | | | | Silt Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔**

Remarks:

Depleted layer needs redox to qualify for "depleted below dark surface".

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______________
Water Table Present? Yes ______ No ✔ Depth (inches): ______________
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______________

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:


**Sample Point 68**


**Sample Point 68**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-22

Applicant/Owner: UDOT State: Utah Sampling Point: SP69

Investigator(s): Merissa Davis Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13813862 Long: -112.10541175 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ____

Remarks:

Hydrology present from two adjacent irrigation ditches which likely seasonally flood this wetland.

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Carex nebrascensis | 40 | ✔ | OBL |
| 2. Juncus balticus | 40 | ✔ | FACW |
| 3. Poa pratensis | 15 | | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 95 = Total Cover | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |

% Bare Ground in Herb Stratum ____ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 40 | x 1 = 40 |
| FACW species | 40 | x 2 = 80 |
| FAC species | 15 | x 3 = 45 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 95 (A) | 165 (B) |

Prevalence Index = B/A = 1.73

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ____

Remarks:

## SOIL

Sampling Point: SP69

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 22 | 7.5YR 3/1 | 100 | | | | | Silt Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ______

Remarks:

This dark surface assumed based on the prelavent presence of hydrophytic vegetation and hydrology.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ✔ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ______ Depth (inches): 2

Water Table Present? Yes ✔ No ______ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:

Between two overflowing irrigation ditches but more sedges than other places.


**Sample Point 69**


**Sample Point 69**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-22

Applicant/Owner: UDOT State: Utah Sampling Point: SP70

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: ______

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13688533 Long: -112.10793333 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ | **Is the Sampled Area within a Wetland?** | **Yes ✔ No ____** |
| Hydric Soil Present? | Yes ✔ No ____ | | |
| Wetland Hydrology Present? | Yes ✔ No ____ | | |

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Juncus balticus | 50 | ✔ | FACW |
| 2. Phalaris arundinacea | 25 | ✔ | FACW |
| 3. Lactuca serriola | 10 | | FACU |
| 4. Bromus tectorum | 5 | | UPL |
| 5. Poa pratensis | 5 | | FAC |
| 6. Taraxacum officinale | 5 | | FACU |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 75 | x 2 = | 150 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 15 | x 4 = | 60 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals: | 100 (A) | | 250 (B) |

Prevalence Index = B/A = 2.50

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ____**

Remarks:

## SOIL

Sampling Point: SP70

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 10YR 2/1 | 100 | | | | | Mucky Loam/Clay | |
| 4 - 6 | 10YR 3/2 | 100 | | | | | Silty Clay | |
| 6 - 24 | 10YR 5/3 | 87 | 10YR 5/6 | 13 | C | M | 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.)**

- ___ 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 ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 0

**Wetland Hydrology Present?** Yes ✔ No ______

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

Remarks:


**Sample Point 70**


**Sample Point 70**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II    City/County: Davis County    Sampling Date: 2024-05-22

Applicant/Owner: UDOT    State: Utah    Sampling Point: SP71

Investigator(s): Cara Glabau, Elena Capson    Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat    Local relief (concave, convex, none): None    Slope (%): 0

Subregion (LRR): ______    Lat: 41.13690633    Long: -112.10791683    Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes    NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed?    Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ |
| Wetland Hydrology Present? | Yes ____ | No ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Hordeum murinum | 60 | ✔ | FACU |
| 2. Lepidium perfoliatum | 10 | | FACU |
| 3. Bromus hordeaceus | 5 | | FACU |
| 4. Distichlis spicata | 5 | | FAC |
| 5. Lactuca serriola | 5 | | FACU |
| 6. Plantago lanceolata | 5 | | FAC |
| 7. Poa pratensis | 5 | | FAC |
| 8. Taraxacum officinale | 5 | | FACU |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____    % 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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (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 | 85 | x 4 = | 340 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 385 (B) |

Prevalence Index = B/A = 3.85

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP71

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 16 | 10YR 4/2 | 100 | | | | | Sandy Clay Loam | |
| 16 - 24 | 10YR 3/3 | 100 | | | | | Sandy 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.)**

___ 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 ✔**

Remarks:

very rocky

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:


**Sample Point 71**


**Sample Point 71**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II   City/County: Davis County   Sampling Date: 2024-05-22

Applicant/Owner: UDOT   State: Utah   Sampling Point: SP72

Investigator(s): Cara Glabau, Elena Capson   Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression   Local relief (concave, convex, none): Concave   Slope (%): 0

Subregion (LRR): ______   Lat: 41.13407117   Long: -112.10783517   Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes   NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed?   Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic?   (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | ✔ | |
| Wetland Hydrology Present? | ✔ | |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ____

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Juncus balticus | 70 | ✔ | FACW |
| 2. Carex aquatilis | 15 | | OBL |
| 3. Distichlis spicata | 10 | | FAC |
| 4. Melilotus officinalis | 5 | | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____   % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 15 | x 1 = | 15 |
| FACW species | 70 | x 2 = | 140 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 205 (B) |

Prevalence Index = B/A = 2.05

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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** ____

Remarks:

## SOIL

Sampling Point: SP72

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 10YR 3/2 | 100 | | | | | Muck | |
| 1 - 4 | 10YR 3/2 | 100 | | | | | Clay | |
| 4 - 16 | 10YR 5/2 | 85 | 7.5YR 5/6 | 15 | C | M | Silty Clay | |
| 16 - 24 | 10YR 4/2 | 90 | 10YR 5/6 | 10 | C | M | 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.)**

- ___ 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** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ✔ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ___ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ✔ **No** ___

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

Remarks:


**Sample Point 72**


**Sample Point 72**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-22

Applicant/Owner: UDOT State: Utah Sampling Point: SP73

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: ______

Landform (hillslope, terrace, etc.): ______ Local relief (concave, convex, none): ______ Slope (%): ______

Subregion (LRR): ______ Lat: 41.13408517 Long: -112.1078675 Datum: NAD83_2011

Soil Map Unit Name: ______ NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ______ No ✔ (If no, explain in Remarks.)

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ______

Are Vegetation ______, Soil ______, or Hydrology ______ 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 ✔ |
| Hydric Soil Present? | Yes ______ | No ✔ |
| Wetland Hydrology Present? | Yes ______ | No ✔ |

**Is the Sampled Area within a Wetland?** **Yes** ______ **No** ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | = Total Cover | |
| Herb Stratum (Plot size: ______) | | | |
| 1. bunchgrass | 35 | ✔ | UPL |
| 2. Poa pratensis | 25 | ✔ | FAC |
| 3. Lolium arundinaceum | 20 | ✔ | UPL |
| 4. Melilotus officinalis | 10 | | FACU |
| 5. Poa bulbosa | 10 | | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 | = Total Cover | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| | | = Total Cover | |

% Bare Ground in Herb Stratum ______ % 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: 33.33 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 25 | x 3 = | 75 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 55 | x 5 = | 275 |
| Column Totals: | 100 (A) | | 430 (B) |

Prevalence Index = B/A = 4.30

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP73

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 6 | 10YR 3/2 | 100 | | | | | Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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: Rock

Depth (inches): 6

**Hydric Soil Present?** **Yes** ______ **No** ✔

Remarks:

Rocky from road base form historic construction of adjacent canal road.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:


**Sample Point 73**


**Sample Point 73**

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-05-22

Applicant/Owner: UDOT State: Utah Sampling Point: SP74

Investigator(s): Cara Glabau, Elena Capson Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): ______ Lat: 41.141736 Long: -112.1089405 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit.

### VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Hordeum murinum | 35 | ✔ | FACU |
| 2. Melilotus officinalis | 25 | ✔ | FACU |
| 3. Poa bulbosa | 15 | | FACU |
| 4. Poa pratensis | 15 | | FAC |
| 5. Juncus balticus | 5 | | FACW |
| 6. Lepidium campestre | 5 | | UPL |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ____ % 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| | Total % Cover of: | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 5 | x 2 = 10 |
| FAC species | 15 | x 3 = 45 |
| FACU species | 75 | x 4 = 300 |
| UPL species | 5 | x 5 = 25 |
| Column Totals: | 100 (A) | 380 (B) |

Prevalence Index = B/A = 3.80

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP74

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 5 | 10YR 3/2 | 100 | | | | | Silty Clay Loam | |
| 5 - 18 | 10YR 4/3 | 100 | | | | | Silty Clay | |
| 18 - 28 | 10YR 4/3 | 100 | | | | | 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.)**

___ 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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ______
Water Table Present? Yes ______ No ✔ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 20

**Wetland Hydrology Present?** Yes ______ No ✔

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

Remarks:

Saturation must be within 12" of soil surface to be an indicator of hydrology. No hydrology present.


**Sample Point 74**


**Sample Point 74**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-06-05

Applicant/Owner: UDOT State: Utah Sampling Point: SP75

Investigator(s): Merissa Davis Section, Township, Range: S31 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): ______ Lat: 41.127078 Long: -112.110373 Datum: NAD83_2011

Soil Map Unit Name: Fb - Ford loam, shallow water table, 0 to 1 percent slopes NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No ✔ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | ✔ | |

**Is the Sampled Area within a Wetland?** Yes ___ No ✔

Remarks:
Conditions were wetter than normal according to the antecedent precipitation tool, but there had not been rain for several days prior to the site visit. This is a depression that appears to seasonally pool with stormwater but has no hydrophytic vegetation or hydric soils to qualify as a wetland.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ______) | | | |
| 1. Halogeton glomeratus | 35 | ✔ | UPL |
| 2. Distichlis spicata | 20 | ✔ | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 55 | | |
| Woody Vine Stratum (Plot size: ______) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 45 % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = 0 |
| FACW species | 0 | x 2 = 0 |
| FAC species | 20 | x 3 = 60 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 35 | x 5 = 175 |
| Column Totals: | 55 (A) | 235 (B) |

Prevalence Index = B/A = 4.27

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP75

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 12 | 10YR 3/2 | 100 | | | | | Silt Loam | |
| 12 - 24 | 10YR 4/2 | 100 | | | | | Silt Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
✔ 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 Tilled 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 ✔ Depth (inches): ___
Water Table Present? Yes ___ No ✔ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

**Wetland Hydrology Present?** Yes ✔ No ___

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

Remarks:

Soil dry at the time of the delineation, water stained leaves is likely caused by seasonal flooding of stormwater due to the topography of the area creating a slight depression.


**Sample Point 75**


**Sample Point 75**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-07-25

Applicant/Owner: UDOT State: Utah Sampling Point: SP76

Investigator(s): C.GLABAU, E.CAPSON Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): D 28A Lat: 41.136229 Long: -112.1041915 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | ✔ | |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

Horses grazing, vegetation was still identifiable but areas have been grazed. Hydrophytic vegetation present. This area is slightly concave and likely collects stormwater and snowmelt as well as seasonal flooding from the adjacent ditch and drainage. This likely allows hydrophytic vegetation to develop but not develop wetlands. No hydric soils or hydrology present, and therefore this does not qualify as a wetland.

## VEGETATION – Use scientific names of plants.

| Stratum / Species | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. Elaeagnus angustifolia | 5 | ✔ | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | 5 | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Melilotus officinalis | 32 | ✔ | FACU |
| 2. Festuca rubra | 31 | ✔ | FAC |
| 3. Juncus balticus | 15 | | FACW |
| 4. Hordeum jubatum | 10 | | FAC |
| 5. Rumex crispus | 2 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 90 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 10 % 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 15 | x 2 = | 30 |
| FAC species | 48 | x 3 = | 144 |
| FACU species | 32 | x 4 = | 128 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 95 (A) | | 302 (B) |

Prevalence Index = B/A = 3.17

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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 ____

Remarks:

Horses grazing, vegetation was still identifiable but areas have been grazed. Hydrophytic vegetation present. This area is slightly concave and likely collects stormwater and snowmelt as well as seasonal flooding from the adjacent ditch and drainage. This likely allows hydrophytic vegetation to develop but not develop wetlands.

## SOIL

Sampling Point: SP76

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 1 | 10YR 2/2 | 100 | | | | | Loam | |
| 5 - 10 | 10YR 2/3 | 100 | | | | | Clay | |
| 10 - 16 | 10YR 3/4 | 100 | 10YR 5/4 | 1 | | | Silty Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ____________
Water Table Present? Yes ______ No ✔ Depth (inches): ____________
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ____________

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:

dry, moist but not saturated


**Sample Point 76**


**Sample Point 76**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-07-25

Applicant/Owner: UDOT State: Utah Sampling Point: SP77

Investigator(s): C.GLABAU, E.CAPSON Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): ______ Lat: 41.1362365 Long: -112.1039445 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: PEM1/USA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ___ No ✔

Remarks:

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Bromus tectorum | 80 | ✔ | UPL |
| 2. Distichlis spicata | 5 | | FAC |
| 3. Lepidium latifolium | 5 | | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 90 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 10 % 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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 80 | x 5 = | 400 |
| Column Totals: | 90 (A) | | 430 (B) |

Prevalence Index = B/A = 4.77

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP77

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 12 | 10YR 4/2 | 100 | | | | | Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ____________
Water Table Present? Yes ______ No ✔ Depth (inches): ____________
Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ____________

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:


**Sample Point 77**


**Sample Point 77**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-07-25

Applicant/Owner: UDOT State: Utah Sampling Point: SP78

Investigator(s): C.GLABAU, E.CAPSON Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): D 28A Lat: 41.13845383 Long: -112.10599383 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ 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 ___ | **Is the Sampled Area within a Wetland?** Yes ✔ No ___ |
| Hydric Soil Present? | Yes ✔ | No ___ | |
| Wetland Hydrology Present? | Yes ✔ | No ___ | |

Remarks:

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Schoenoplectus americanus | 60 | ✔ | OBL |
| 2. Hordeum jubatum | 20 | ✔ | FAC |
| 3. Poa pratensis | 10 | | FAC |
| 4. Juncus balticus | 5 | | FACW |
| 5. Trifolium fragiferum | 5 | | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 60 | x 1 = 60 |
| FACW species | 5 | x 2 = 10 |
| FAC species | 35 | x 3 = 105 |
| FACU species | 0 | x 4 = 0 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 100 (A) | 175 (B) |

Prevalence Index = B/A = 1.75

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ___

Remarks:

## SOIL

Sampling Point: SP78

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 2.5Y 3/2 | 100 | | | | | Silty Clay | |
| 4 - 10 | 10YR 3/2 | 10 | 10YR 2/1 | 8 | D | PL | Silty Clay | |
| 10 - 16 | 2.5YR 4/2 | 100 | 10YR 2/1 | 8 | D | PL | Sandy Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ | Depth (inches): ______ |
| Water Table Present? | Yes ✔ | No ______ | Depth (inches): 10 |
| Saturation Present? (includes capillary fringe) | Yes ✔ | No ______ | Depth (inches): 4 |

**Wetland Hydrology Present?** **Yes** ✔ **No** ______

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

Remarks:


**Sample Point 78**


**Sample Point 78**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-07-25
Applicant/Owner: UDOT State: Utah Sampling Point: SP79
Investigator(s): C.GLABAU, E.CAPSON Section, Township, Range: S30 T5N R2W
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 3
Subregion (LRR): D 28A Lat: 41.1384780 Long: -112.1059542 Datum: NAD83_2011
Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ___ No ✔

Remarks:

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ___) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ___) | | | |
| 1. Hordeum jubatum | 40 | ✔ | FAC |
| 2. Melilotus officinalis | 40 | ✔ | FACU |
| 3. Poa pratensis | 15 | | FAC |
| 4. Schoenoplectus americanus | 5 | | OBL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ___) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ___ % 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: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 5 | x 1 = | 5 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 55 | x 3 = | 165 |
| FACU species | 40 | x 4 = | 160 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 330 (B) |

Prevalence Index = B/A = 3.30

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP79

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 4 | 10YR 4/2 | 100 | | | | | Clay Loam | |
| 4 - 8 | 2.5Y 4/2 | 100 | | | | | Sandy Loam | |
| 8 - 16 | 10YR 3/2 | 100 | 10YR 2/1 | 2 | D | PL | Sandy Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ✔

Remarks:

Some redox depletions present, likely due to hydrology and seasonal flooding from drainage channel, but not significant enough to qualify for any hydric soil indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

___ 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 Vis ble on Aerial Imagery (B7)
___ 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 Tilled 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 ✔ Depth (inches): ________
Water Table Present? Yes ____ No ✔ Depth (inches): ________
Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ________

**Wetland Hydrology Present?** **Yes** ______ **No** ✔

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

Remarks:


**Sample Point 79**


**Sample Point 79**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-07-25

Applicant/Owner: UDOT State: Utah Sampling Point: SP80

Investigator(s): C.GLABAU, E.CAPSON Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): ______ Lat: 41.13716 Long: -112.106068 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ✔ | **Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Hordeum murinum | 50 | ✔ | FACU |
| 2. Lolium arundinaceum | 40 | ✔ | UPL |
| 3. Melilotus officinalis | 10 | | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 100 | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum ______ % 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 60 | x 4 = | 240 |
| UPL species | 40 | x 5 = | 200 |
| Column Totals: | 100 (A) | | 440 (B) |

Prevalence Index = B/A = 4.40

**Hydrophytic Vegetation Indicators:**

- ___ Dominance Test is >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** ✔

Remarks:

## SOIL

Sampling Point: SP80

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 5 | 10YR 3/2 | 100 | | | | | Clay Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ____

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

**Wetland Hydrology Present?** Yes ____ No ✔

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

Remarks:


**Sample Point 80**


**Sample Point 80**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-07-25

Applicant/Owner: UDOT State: Utah Sampling Point: SP81

Investigator(s): M.DAVIS Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): D 28A Lat: 41.13771744 Long: -112.10572999 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ | Is the Sampled Area within a Wetland? Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| Tree Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| Sapling/Shrub Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| Herb Stratum (Plot size: ____) | | | |
| 1. Eleocharis palustris | 40 | ✔ | OBL |
| 2. Juncus balticus | 35 | ✔ | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 75 | | |
| Woody Vine Stratum (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 25 % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40 | x 1 = | 40 |
| FACW species | 35 | x 2 = | 70 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 75 (A) | | 110 (B) |

Prevalence Index = B/A = 1.46

**Hydrophytic Vegetation Indicators:**

✔ Dominance Test is >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 ____

Remarks:

## SOIL

Sampling Point: SP81

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 5 | 7.5YR 3/1 | 100 | | | | | Loam | |
| 5 - 6 | 7.5YR 3/1 | 50 | | | | | Loam | |
| 5 - 6 | 10YR 4/2 | 48 | 5YR 6/8 | 2 | C | M | Clay Loam | |
| 6 - 14 | 7.5YR 3/1 | 100 | | | | | Sandy Loam | |
| 14 - 20 | 10YR 4/2 | 100 | | | | | Sand | Partially loamy |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ___

Remarks:

This wetland is consistently inundated throughout the growing season. Without the soils adequately drying out and developing redox features, this soil does not meet any indicators for hydric soil, but due to these wet conditions is considered problematic.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No ✔ | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes ✔ | No ___ | Depth (inches): 0 |

**Wetland Hydrology Present?** **Yes** ✔ **No** ___

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

Some areas of standing water throughout the wetland, but not at this sample point location.

Remarks:

**WDC SR-177, SR-193 to 1800 North**
UDOT


**Sample Point 81**


**Sample Point 81**

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-07-25

Applicant/Owner: UDOT State: Utah Sampling Point: SP82

Investigator(s): M.DAVIS Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): D 28A Lat: 41.13771428 Long: -112.10571136 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ✔, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

| | Yes | No |
|---|---|---|
| Hydrophytic Vegetation Present? | | ✔ |
| Hydric Soil Present? | | ✔ |
| Wetland Hydrology Present? | | ✔ |

**Is the Sampled Area within a Wetland?** Yes ____ No ✔

Remarks:

No soil pit dug due to road base materials restricting the ability to dig a hole. All plants present were upland plants. Photos not provided because no pit was dug.

## VEGETATION – Use scientific names of plants.

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| = Total Cover | | | |
| **Sapling/Shrub Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| = Total Cover | | | |
| **Herb Stratum** (Plot size: ____) | | | |
| 1. Agropyron cristatum | 35 | ✔ | UPL |
| 2. Plantago lanceolata | 20 | ✔ | FAC |
| 3. Grindelia squarrosa | 20 | ✔ | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| = Total Cover | 75 | | |
| **Woody Vine Stratum** (Plot size: ____) | | | |
| 1. | | | |
| 2. | | | |
| = Total Cover | | | |

% Bare Ground in Herb Stratum 25 % 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: 33.33 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 35 | x 5 = | 175 |
| Column Totals: | 75 (A) | | 315 (B) |

Prevalence Index = B/A = 4.20

**Hydrophytic Vegetation Indicators:**

___ Dominance Test is >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 ✔

Remarks:

## SOIL

Sampling Point: SP82

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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 ✔**

Remarks:

Road base type material too solid to dig a pit. Shallow layer of vegetation growing where capable.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✔ Depth (inches): ______

**Wetland Hydrology Present? Yes ______ No ✔**

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

Remarks:

# WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: WDC Phase II City/County: Davis County Sampling Date: 2024-07-25

Applicant/Owner: UDOT State: Utah Sampling Point: SP83

Investigator(s): M.DAVIS Section, Township, Range: S30 T5N R2W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): D 28A Lat: 41.13709023 Long: -112.10609945 Datum: NAD83_2011

Soil Map Unit Name: HLA - Harrisville-Leland complex, 0 to 1 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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 ____ |
| Hydric Soil Present? | Yes ✔ | No ____ |
| Wetland Hydrology Present? | Yes ✔ | No ____ |

**Is the Sampled Area within a Wetland?** **Yes** ✔ **No** ____

Remarks:

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: ____) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: ____)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| **Herb Stratum (Plot size: ____)** | | | |
| 1. Carex nebrascensis | 35 | ✔ | OBL |
| 2. Persicaria hydropiper | 20 | ✔ | OBL |
| 3. Schoenoplectus americanus | 10 | | OBL |
| 4. Poa pratensis | 10 | | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 75 = Total Cover | | |
| **Woody Vine Stratum (Plot size: ____)** | | | |
| 1. | | | |
| 2. | | | |
| | = Total Cover | | |

% Bare Ground in Herb Stratum 25 % 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: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 65 | x 1 = | 65 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 75 (A) | | 95 (B) |

Prevalence Index = B/A = 1.26

**Hydrophytic Vegetation Indicators:**

- ✔ Dominance Test is >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** ____

Remarks:

## SOIL

Sampling Point: SP83

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0 - 8 | 10YR 3/2 | 100 | | | | | Loam | |
| 8 - 20 | 7.5YR 2.5/1 | 95 | 7.5YR 3/3 | 5 | C | M | Sandy Loam | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |

[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** ______

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Vis ble on Aerial Imagery (B7)
- ___ 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 Tilled 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 ✔ Depth (inches): ______

Water Table Present? Yes ______ No ✔ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ✔ No ______ Depth (inches): 8

**Wetland Hydrology Present?** **Yes** ✔ **No** ______

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

Remarks:

This area is likely wetter or occasionally flooded earlier in the season.


**Sample Point 83**


**Sample Point 83**

# APPENDIX D

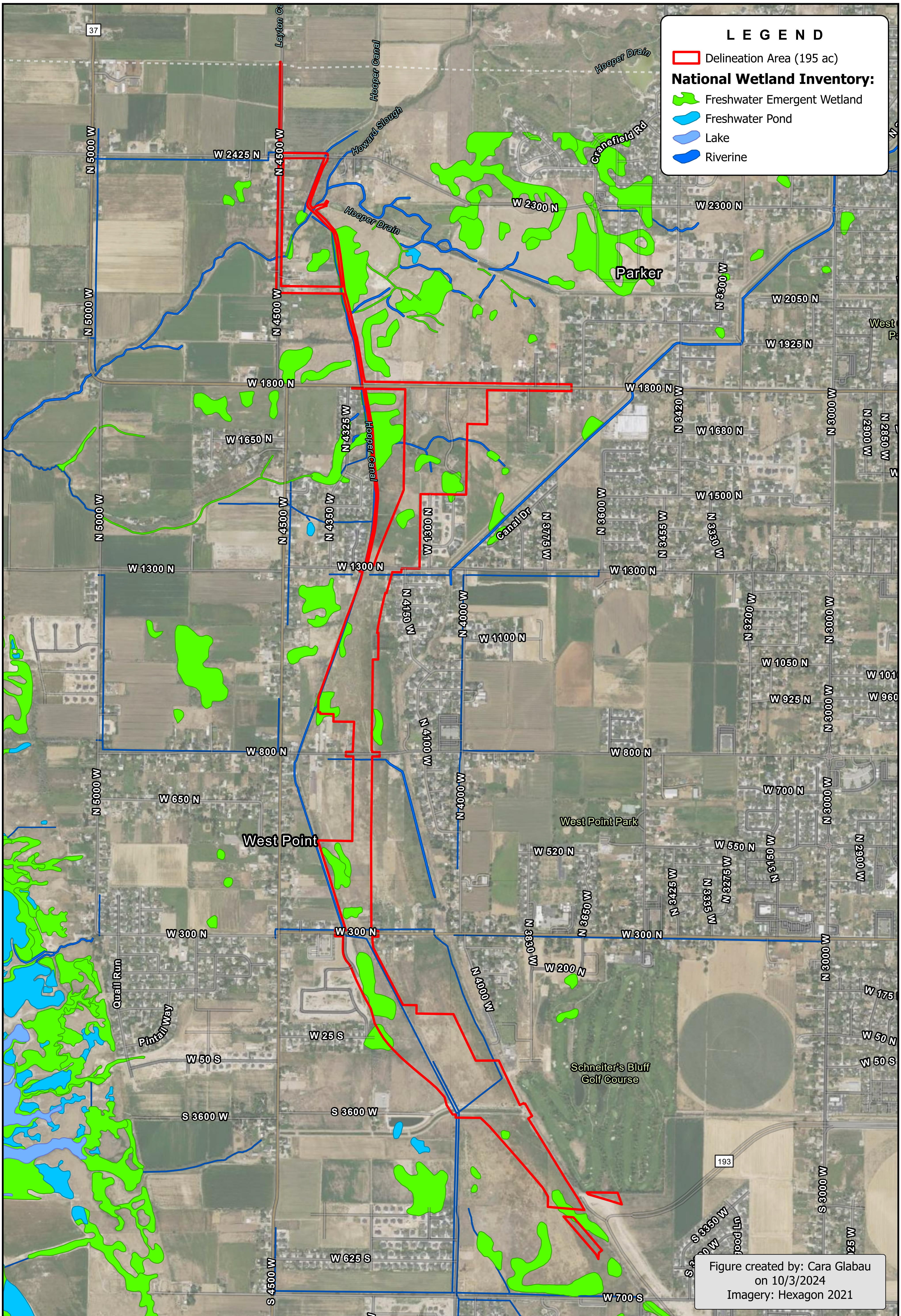
# Aquatic Resources Spreadsheet

**West Davis Corridor SR-177, SR-193 TO 1800 North (PIN 20927) Delineation**
**Aquatic Resources**

| Waters Name | State | Cowadin Code | HGM Code | Measurement Type | Amount | Units | Waters Type | Latitude | Longitude | Local Waterway |
|---|---|---|---|---|---|---|---|---|---|---|
| W1 | UT | PEM | DEPRESS | Area | 0.04 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.105961 | -112.095873 | Stormwater Drainge |
| W2 | UT | PEM | DEPRESS | Area | 7.55 | Acres | A7-AJD.WETL-404 | 41.108619 | -112.098269 | Stormwater Runoff |
| W3 | UT | PEM | DEPRESS | Area | 2.24 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.109775 | -112.100275 | Stormwater Runoff |
| W4 | UT | PEM | DEPRESS | Area | 0.63 | Acres | A7-AJD.WETL-404 | 41.110132 | -112.099354 | Stormwater Runoff |
| W5 | UT | PEM | SLOPE | Area | 0.43 | Acres | A7-AJD.WETL-404 | 41.110286 | -112.09912 | Stormwater Runoff |
| W6 | UT | PEM | DEPRESS | Area | 1.57 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.111745 | -112.100706 | Irrigation and Stormwater Runoff |
| W7 | UT | PEM | RIVERINE | Area | 0.39 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.112496 | -112.101516 | Irrigation and Stormwater Runoff |
| W8 | UT | PEM | DEPRESS | Area | 1.09 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.112694 | -112.101587 | Irrigation and Stormwater Runoff |
| W9 | UT | PEM | DEPRESS | Area | 1.31 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.126432 | -112.108597 | Irrigation and Stormwater Runoff |
| W10 | UT | PEM | DEPRESS | Area | 6.03 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.128535 | -112.108054 | Irrigation and Stormwater Runoff |
| W11 | UT | PEM | DEPRESS | Area | 1.95 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.129396 | -112.108084 | Irrigation and Stormwater Runoff |
| W12 | UT | PEM | DEPRESS | Area | 3.06 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.129053 | -112.108889 | Irrigation and Stormwater Runoff |
| W13 | UT | PEM | DEPRESS | Area | 0.10 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.132474 | -112.108086 | Irrigation and Stormwater Runoff |
| W14 | UT | PEM | DEPRESS | Area | 0.13 | Acres | A7-AJD.WETL-404 | 41.134204 | -112.107827 | Irrigation and Stormwater Runoff |
| W15 | UT | PEM | DEPRESS | Area | 2.10 | Acres | A7-AJD.WETL-404 | 41.138173 | -112.106331 | Irrigation and Stormwater Runoff |
| W16 | UT | PEM | DEPRESS | Area | 0.63 | Acres | A7-AJD.WETL-404 | 41.13811 | -112.105658 | Irrigation and Stormwater Runoff |
| W17 | UT | PEM | RIVERINE | Area | 0.16 | Acres | A7-AJD.WETL-404 | 41.136783 | -112.105367 | Stormwater Runoff |
| W18 | UT | PEM | RIVERINE | Area | 0.58 | Acres | A7-AJD.WETL-404 | 41.136495 | -112.104939 | Stormwater Runoff |
| W19 | UT | PEM | DEPRESS | Area | 0.13 | Acres | A7-AJD.WETL-404 | 41.137483 | -112.104426 | Stormwater Runoff |
| W20 | UT | PEM | DEPRESS | Area | 0.47 | Acres | A7-AJD.WETL-404 | 41.138105 | -112.104219 | Stormwater Runoff |
| W21 | UT | PEM | DEPRESS | Area | 0.11 | Acres | A7-AJD.WETL-404 | 41.138044 | -112.105061 | Stormwater Runoff |
| W22 | UT | PEM | DEPRESS | Area | 0.52 | Acres | A7-AJD.WETL-404 | 41.138848 | -112.104602 | Stormwater Runoff |
| W23 | UT | PEM | DEPRESS | Area | 0.46 | Acres | NON-WOTUS.WETL.NEGATIVE-A7 | 41.130619 | -112.108796 | Irrigation and Stormwater Runoff |
| D1 | UT | R4SB5Cx | RIVERINE | Length | 1340 | Feet | A5.TRIB-404 | 41.110441 | -112.100607 | Stormwater Runoff |
| D2 | UT | R4UB3Cx | RIVERINE | Length | 947 | Feet | A5.TRIB-404 | 41.111089 | -112.101418 | Stormwater Runoff |
| D3 | UT | R4SB5Kx | RIVERINE | Length | 1167 | Feet | NON-JD-RAPANOS-GUIDE-DITCH | 41.119865 | -112.110119 | Irrigation Ditch |
| D4 | UT | R4SB5C | RIVERINE | Length | 57 | Feet | A5.TRIB-404 | 41.137677 | -112.107994 | Irrigation and Stormwater Runoff |
| D5 | UT | R4SB5Kx | RIVERINE | Length | 1885 | Feet | A5.TRIB-404 | 41.13524 | -112.10558 | Irrigation and Stormwater Runoff |
| D6 | UT | R4SBKx | RIVERINE | Length | 81 | Feet | NON-WOTUS-STREAM.NEGATIVE-A5 | 41.140173 | -112.110693 | Stormwater Runoff |
| D7 | UT | R4SB5C | RIVERINE | Length | 380 | Feet | A5.TRIB-404 | 41.136617 | -112.104732 | Irrigation and Stormwater Runoff |
| D8 | UT | R2UB3C | RIVERINE | Length | 178 | Feet | A5.TRIB-404 | 41.137747 | -112.103391 | Stormwater Runoff |
| D9 | UT | R2UB3C | RIVERINE | Length | 921 | Feet | A5.TRIB-404 | 41.138009 | -112.105852 | Stormwater Runoff |
| D10 | UT | R2UB3C | RIVERINE | Length | 268 | Feet | A5.TRIB-404 | 41.136714 | -112.106109 | Stormwater Runoff |
| OW1 | UT | PUB3C | DEPRESS | Area | 1.13 | Acres | NON-WOTUS-LAKE.POND.NEGATIVE-A5 | 41.129074 | -112.109433 | Irrigation and Stormwater Runoff |
| OW2 | UT | PUB3Cx | DEPRESS | Area | 0.23 | Acres | NON-WOTUS-LAKE.POND.NEGATIVE-A5 | 41.130983 | -112.107666 | Irrigation and Stormwater Runoff |
| OW3 | UT | PUB3H | DEPRESS | Area | 0.36 | Acres | A4.IMPDT-404 | 41.137306 | -112.105634 | Irrigation and Stormwater Runoff |
| OW4 | UT | PUB3H | DEPRESS | Area | 3.29 | Acres | A4.IMPDT-404 | 41.137557 | -112.104833 | Irrigation and Stormwater Runoff |
| S1 | UT | R2UB3H | RIVERINE | Length | 34 | Feet | A5.TRIB-404 | 41.146842 | -112.111292 | Irrigation and Stormwater Runoff |

# APPENDIX E

# NWI Figures




BOWEN COLLINS & ASSOCIATES

UDOT
WDC SR-177,
SR-193 TO 1800 N

NATIONAL WETLAND INVENTORY

NORTH:

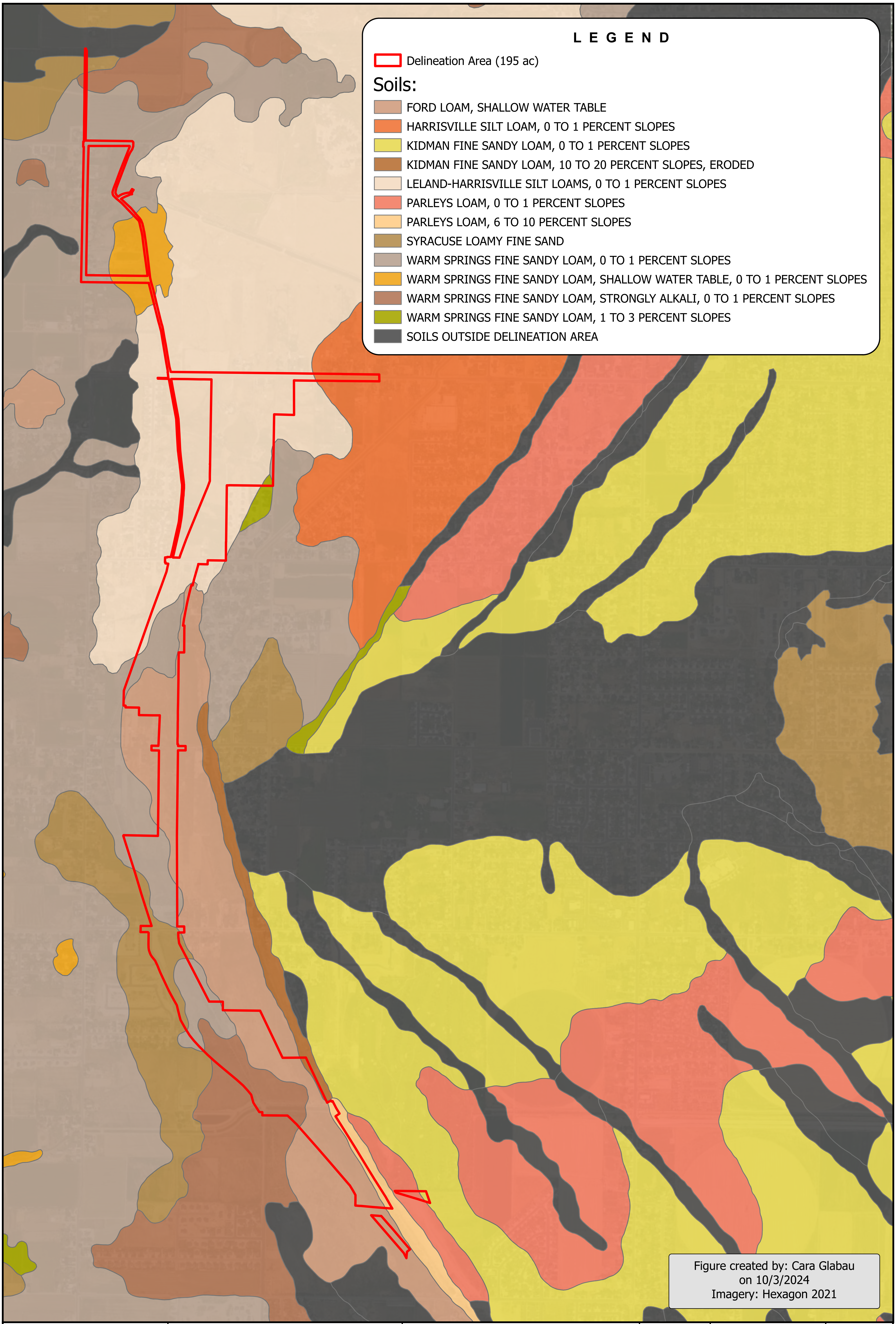
SCALE: 0 500 1,000 Feet

FIGURE NO. 3

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024

# APPENDIX F

## Soil Figures and NRCS Custom Soils Resource Report




| BOWEN COLLINS & ASSOCIATES | UDOT<br>WDC SR-177,<br>SR-193 TO 1800 N | SOILS | NORTH: | SCALE: | FIGURE NO.<br>4 |
|---|---|---|---|---|---|

P:\HNTB\592-24-01 WDC SR-177, SR-193 to 1800 N\3.0 GIS\3.4 APRX\WDC_Phase_II_AquaticResources.aprx cglabau 12/4/2024

United States Department of Agriculture

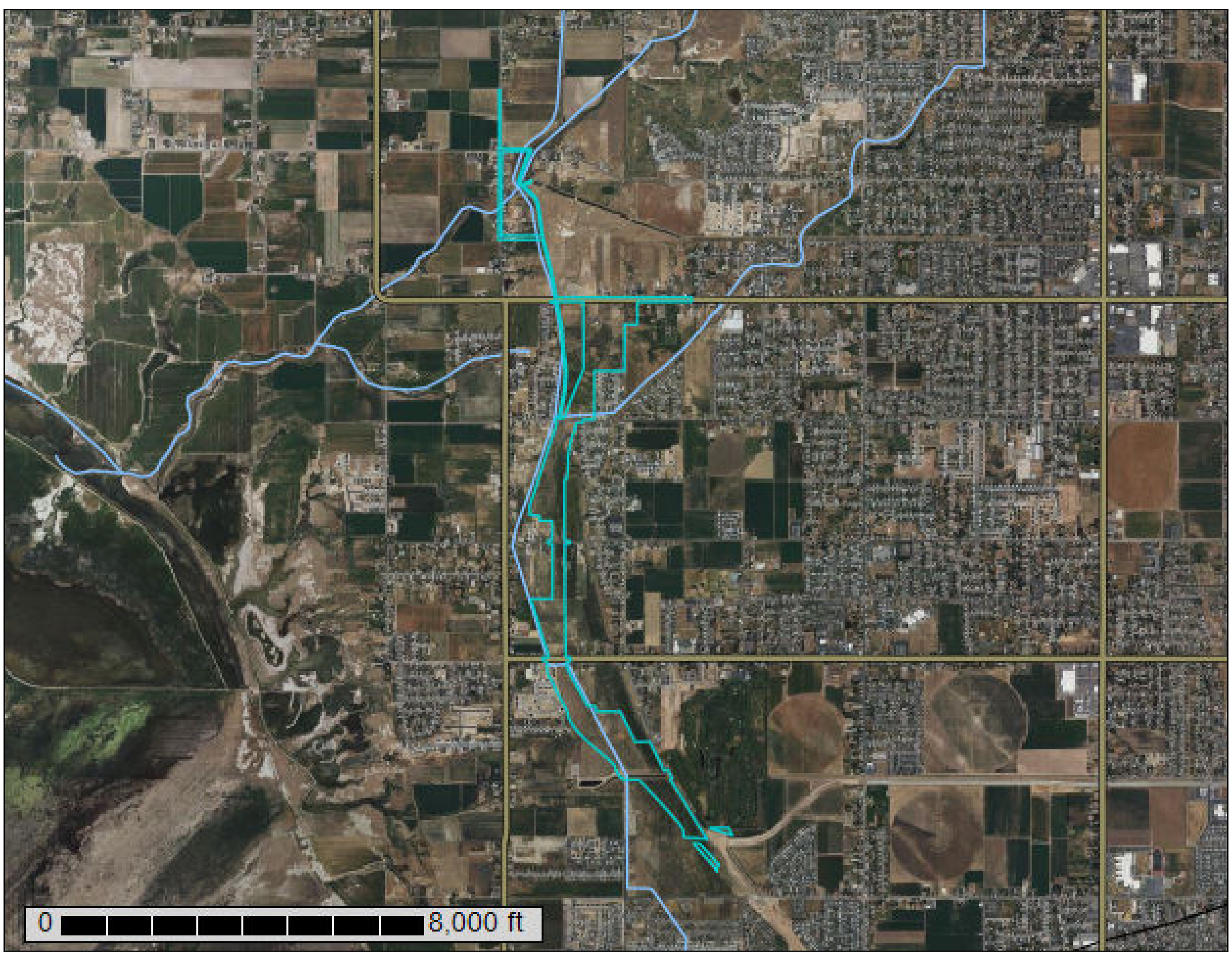
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for
# Davis-Weber Area, Utah

## WDC SR-177 Phase II (Phase 20927): SR-193 to 1800 North




November 25, 2024

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

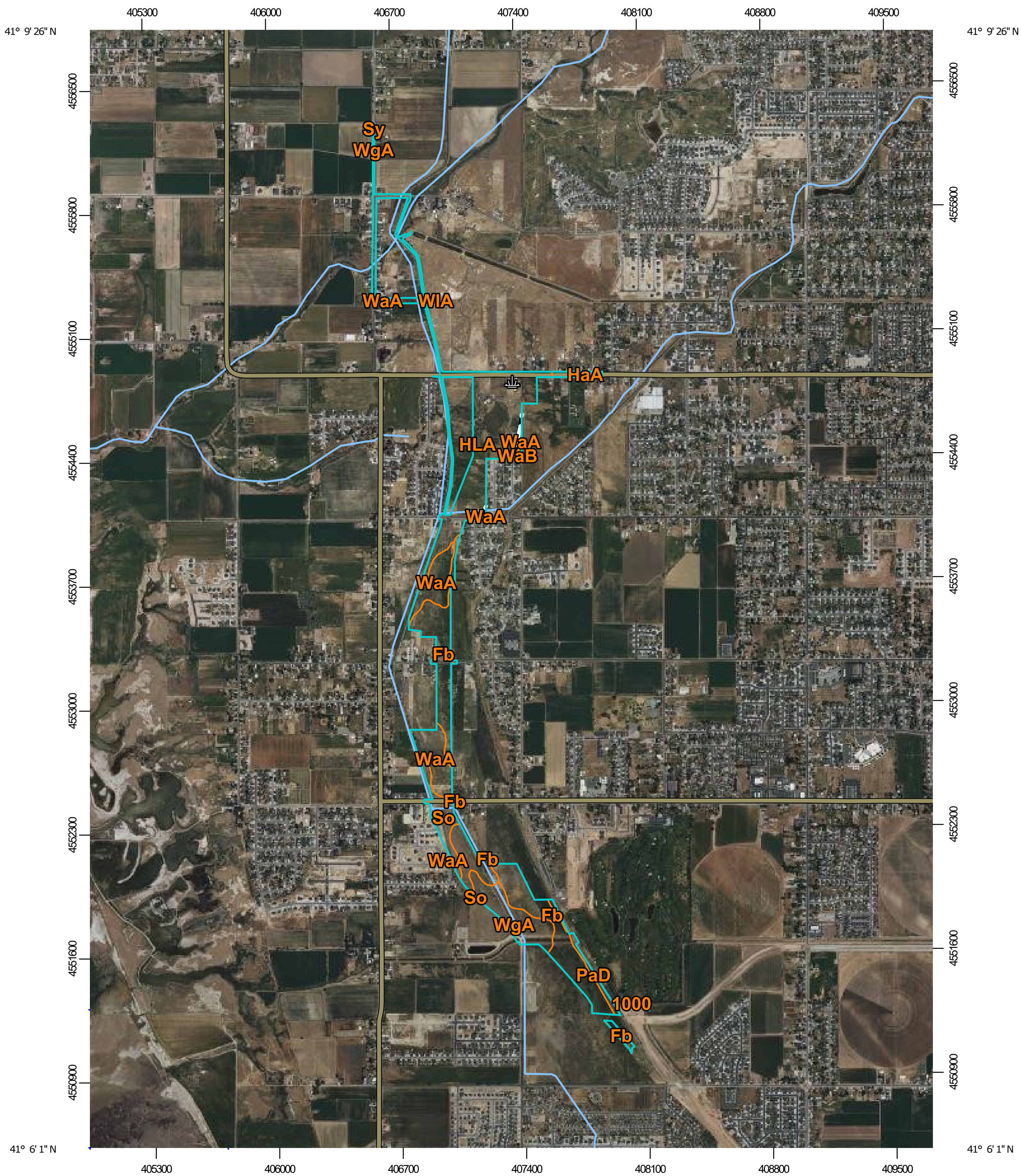
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map




Map Scale: 1:30,800 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 450, 900, 1800, 2700

Feet: 0, 1000, 2000, 4000, 6000

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Davis-Weber Area, Utah
Survey Area Data: Version 18, Aug 26, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 14, 2022—Jul 20, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 1000 | Parleys loam, 0 to 4 percent slopes | 0.7 | 0.3% |
| Fb | Ford loam, shallow water table, 0 to 1 percent slopes | 53.7 | 27.5% |
| HaA | Harrisville silt loam, 0 to 1 percent slopes | 2.1 | 1.1% |
| HLA | Harrisville-Leland complex, 0 to 1 percent slopes | 60.8 | 31.1% |
| KaA | Kidman fine sandy loam, 0 to 1 percent slopes | 0.3 | 0.2% |
| KaE2 | Kidman fine sandy loam, 10 to 20 percent slopes, eroded | 0.7 | 0.4% |
| PaD | Parleys loam, 6 to 10 percent slopes | 2.7 | 1.4% |
| So | Syracuse loamy fine sand, 0 to 2 percent slopes | 10.7 | 5.5% |
| Sy | Syracuse loamy fine sand, moderately saline, sodic, 0 to 2 percent slopes | 0.1 | 0.0% |
| WaA | Warm Springs fine sandy loam, 0 to 1 percent slopes | 42.5 | 21.8% |
| WaB | Warm Springs fine sandy loam, 1 to 3 percent slopes | 0.4 | 0.2% |
| WgA | Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes | 18.4 | 9.4% |
| WlA | Warm Springs fine sandy loam, shallow water table, 0 to 1 percent slopes | 2.3 | 1.2% |
| **Totals for Area of Interest** | | **195.4** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class.

Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Davis-Weber Area, Utah

## 1000—Parleys loam, 0 to 4 percent slopes

**Map Unit Setting**

*National map unit symbol:* 2tjtg
*Elevation:* 4,210 to 5,400 feet
*Mean annual precipitation:* 12 to 18 inches
*Mean annual air temperature:* 49 to 51 degrees F
*Frost-free period:* 130 to 180 days
*Farmland classification:* Prime farmland if irrigated

**Map Unit Composition**

*Parleys and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Parleys**

**Setting**

*Landform:* Lake terraces, stream terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits and/or alluvium derived from igneous and sedimentary rock

**Typical profile**

*Ap - 0 to 6 inches:* loam
*A - 6 to 15 inches:* loam
*Bt - 15 to 26 inches:* clay loam
*Bk - 26 to 33 inches:* silty clay loam
*CBk - 33 to 48 inches:* silt loam
*C - 48 to 60 inches:* stratified fine sand to silty clay loam

**Properties and qualities**

*Slope:* 0 to 4 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 35 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 5.0
*Available water supply, 0 to 60 inches:* High (about 10.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 4e
*Hydrologic Soil Group:* C
*Ecological site:* R028AY310UT - Upland Loam (Bonneville Big Sagebrush) North

*Other vegetative classification:* Upland Loam (Mountain Big Sagebrush) (028AY310UT)
*Hydric soil rating:* No

### Minor Components

#### Unnamed soils

*Percent of map unit:* 15 percent
*Hydric soil rating:* No

## Fb—Ford loam, shallow water table, 0 to 1 percent slopes

### Map Unit Setting

*National map unit symbol:* j533
*Elevation:* 4,200 to 4,300 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Ford, shallow water table, and similar soils:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Ford, Shallow Water Table

#### Setting

*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits

#### Typical profile

*A1 - 0 to 9 inches:* loam
*C1ca - 9 to 16 inches:* loam
*C2ca - 16 to 34 inches:* fine sandy loam
*C3cam - 34 to 44 inches:* indurated
*C4ca - 44 to 52 inches:* fine sandy loam
*C5cam - 52 to 60 inches:* indurated

#### Properties and qualities

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* 20 to 40 inches to petrocalcic
*Drainage class:* Poorly drained
*Runoff class:* Negligible
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.07 in/hr)
*Depth to water table:* About 0 to 6 inches
*Frequency of flooding:* Occasional
*Frequency of ponding:* Rare

*Calcium carbonate, maximum content:* 25 percent
*Maximum salinity:* Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 30.0
*Available water supply, 0 to 60 inches:* Low (about 3.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 4w
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* D
*Ecological site:* R028AY024UT - Wet Saline Meadow (Saltgrass)
*Hydric soil rating:* Yes

## HaA—Harrisville silt loam, 0 to 1 percent slopes

**Map Unit Setting**

*National map unit symbol:* j53h
*Elevation:* 4,250 to 4,500 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Farmland of statewide importance

**Map Unit Composition**

*Harrisville and similar soils:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Harrisville**

**Setting**

*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium and/or lacustrine deposits

**Typical profile**

*Ap - 0 to 8 inches:* silt loam
*B21t - 8 to 14 inches:* silty clay loam
*B22tca - 14 to 22 inches:* silty clay loam
*B3ca - 22 to 33 inches:* silty clay loam
*C1 - 33 to 45 inches:* silty clay loam
*C2 - 45 to 60 inches:* silty clay loam

**Properties and qualities**

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)
*Depth to water table:* About 30 to 48 inches
*Frequency of flooding:* None

*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 50.0
*Available water supply, 0 to 60 inches:* High (about 10.2 inches)

**Interpretive groups**
*Land capability classification (irrigated):* 4w
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* D
*Ecological site:* R028AY012UT - Semiwet Fresh Meadow
*Hydric soil rating:* No

## HLA—Harrisville-Leland complex, 0 to 1 percent slopes

**Map Unit Setting**
*National map unit symbol:* j53c
*Elevation:* 4,250 to 4,500 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**
*Harrisville and similar soils:* 60 percent
*Leland and similar soils:* 40 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Harrisville**

**Setting**
*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium and/or lacustrine deposits

**Typical profile**
*Ap - 0 to 8 inches:* silt loam
*B21t - 8 to 14 inches:* silty clay loam
*B22tca - 14 to 22 inches:* silty clay loam
*B3ca - 22 to 33 inches:* silty clay loam
*C1 - 33 to 45 inches:* silty clay loam
*C2 - 45 to 60 inches:* silty clay loam

**Properties and qualities**
*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)

*Depth to water table:* About 30 to 48 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 50.0
*Available water supply, 0 to 60 inches:* High (about 10.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 4w
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* D
*Ecological site:* R028AY012UT - Semiwet Fresh Meadow
*Hydric soil rating:* No

### Description of Leland

**Setting**

*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits

**Typical profile**

*A2 - 0 to 8 inches:* silt loam
*B2tca - 8 to 14 inches:* clay loam
*Bca - 14 to 19 inches:* fine sandy loam
*C1 - 19 to 31 inches:* loamy very fine sand
*C2 - 31 to 38 inches:* silt loam
*C3 - 38 to 60 inches:* very fine sandy loam

**Properties and qualities**

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Medium
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)
*Depth to water table:* About 30 to 48 inches
*Frequency of flooding:* Rare
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 25 percent
*Maximum salinity:* Strongly saline (16.0 to 32.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 80.0
*Available water supply, 0 to 60 inches:* Moderate (about 6.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* D
*Ecological site:* R028AY001UT - Alkali Bottom (Alkali Sacaton)
*Hydric soil rating:* No

## KaA—Kidman fine sandy loam, 0 to 1 percent slopes

### Map Unit Setting

*National map unit symbol:* j53y
*Elevation:* 4,200 to 5,100 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Prime farmland if irrigated

### Map Unit Composition

*Kidman and similar soils:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Kidman

#### Setting

*Landform:* Lake plains
*Landform position (three-dimensional):* Rise, talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits

#### Typical profile

*H1 - 0 to 11 inches:* fine sandy loam
*H2 - 11 to 17 inches:* fine sandy loam
*H3 - 17 to 27 inches:* fine sandy loam
*H4 - 27 to 37 inches:* fine sandy loam
*H5 - 37 to 49 inches:* very fine sandy loam
*H6 - 49 to 60 inches:* very fine sandy loam

#### Properties and qualities

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 7.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 1
*Land capability classification (nonirrigated):* 3c
*Hydrologic Soil Group:* A
*Ecological site:* R028AY310UT - Upland Loam (Bonneville Big Sagebrush) North

*Other vegetative classification:* Upland Loam (Mountain Big Sagebrush) (028AY310UT)
*Hydric soil rating:* No

## KaE2—Kidman fine sandy loam, 10 to 20 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* j542
*Elevation:* 4,200 to 4,300 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Kidman and similar soils:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Kidman

#### Setting

*Landform:* Lake terraces
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits

#### Typical profile

*H1 - 0 to 11 inches:* fine sandy loam
*H2 - 11 to 17 inches:* fine sandy loam
*H3 - 17 to 27 inches:* fine sandy loam
*H4 - 27 to 37 inches:* fine sandy loam
*H5 - 37 to 49 inches:* very fine sandy loam
*H6 - 49 to 60 inches:* very fine sandy loam

#### Properties and qualities

*Slope:* 10 to 20 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 7.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 4e
*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* A
*Ecological site:* R028AY310UT - Upland Loam (Bonneville Big Sagebrush) North
*Other vegetative classification:* Upland Loam (Mountain Big Sagebrush) (028AY310UT)
*Hydric soil rating:* No

## PaD—Parleys loam, 6 to 10 percent slopes

### Map Unit Setting

*National map unit symbol:* j55c
*Elevation:* 4,300 to 5,050 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Parleys and similar soils:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Parleys

#### Setting

*Landform:* Escarpments, lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits

#### Typical profile

*Ap - 0 to 6 inches:* loam
*A12 - 6 to 15 inches:* loam
*B2t - 15 to 26 inches:* clay loam
*B3ca - 26 to 33 inches:* silty clay loam
*C1ca - 33 to 48 inches:* silt loam
*C2 - 48 to 60 inches:* stratified fine sand to silty clay loam

#### Properties and qualities

*Slope:* 6 to 10 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 40 percent
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 9.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 2e
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C
*Ecological site:* R028AY310UT - Upland Loam (Bonneville Big Sagebrush) North
*Other vegetative classification:* Upland Loam (Mountain Big Sagebrush) (028AY310UT)
*Hydric soil rating:* No

## So—Syracuse loamy fine sand, 0 to 2 percent slopes

**Map Unit Setting**

*National map unit symbol:* j56d
*Elevation:* 4,200 to 4,600 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Syracuse and similar soils:* 95 percent
*Minor components:* 5 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Syracuse**

**Setting**

*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium and/or lacustrine deposits

**Typical profile**

*A1 - 0 to 11 inches:* loamy fine sand
*AC - 11 to 21 inches:* sandy loam
*C1ca - 21 to 30 inches:* sandy loam
*C2ca - 30 to 60 inches:* sandy loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)
*Depth to water table:* About 36 to 48 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 30.0
*Available water supply, 0 to 60 inches:* Low (about 5.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 3w
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* C
*Ecological site:* R028AY012UT - Semiwet Fresh Meadow
*Hydric soil rating:* No

### Minor Components

#### Alkaline soils

*Percent of map unit:* 5 percent
*Landform:* Depressions
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave
*Across-slope shape:* Concave
*Hydric soil rating:* Yes

## Sy—Syracuse loamy fine sand, moderately saline, sodic, 0 to 2 percent slopes

### Map Unit Setting

*National map unit symbol:* j56f
*Elevation:* 4,200 to 4,600 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Syracuse and similar soils:* 95 percent
*Minor components:* 5 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Syracuse

#### Setting

*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Alluvium and/or lacustrine deposits

#### Typical profile

*A1 - 0 to 11 inches:* loamy fine sand
*Ac - 11 to 21 inches:* sandy loam
*C1ca - 21 to 30 inches:* sandy loam
*C2ca - 30 to 60 inches:* sandy loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)
*Depth to water table:* About 24 to 36 inches
*Frequency of flooding:* Rare
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 30.0
*Available water supply, 0 to 60 inches:* Low (about 4.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* 3w
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* C
*Ecological site:* R028AY001UT - Alkali Bottom (Alkali Sacaton)
*Hydric soil rating:* No

### Minor Components

**Alkaline soils, fine sandy loam**

*Percent of map unit:* 5 percent
*Landform:* Depressions
*Landform position (three-dimensional):* Dip
*Down-slope shape:* Concave
*Across-slope shape:* Concave
*Hydric soil rating:* Yes

## WaA—Warm Springs fine sandy loam, 0 to 1 percent slopes

### Map Unit Setting

*National map unit symbol:* j56w
*Elevation:* 4,200 to 4,400 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Prime farmland if irrigated and drained

### Map Unit Composition

*Warm springs and similar soils:* 95 percent
*Minor components:* 5 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Warm Springs

#### Setting

*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits

#### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam
*H2 - 8 to 15 inches:* fine sandy loam
*H3 - 15 to 24 inches:* fine sandy loam
*H4 - 24 to 37 inches:* fine sandy loam
*H5 - 37 to 60 inches:* loamy fine sand

#### Properties and qualities

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 36 to 48 inches
*Frequency of flooding:* Rare
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 30.0
*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2w
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* C
*Ecological site:* R028AY001UT - Alkali Bottom (Alkali Sacaton)
*Hydric soil rating:* No

### Minor Components

#### Warm springs, shallow water table, uncorrelated

*Percent of map unit:* 5 percent
*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R028AY024UT - Wet Saline Meadow (Saltgrass)
*Hydric soil rating:* Yes

## WaB—Warm Springs fine sandy loam, 1 to 3 percent slopes

### Map Unit Setting

*National map unit symbol:* j56x
*Elevation:* 4,200 to 4,400 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Prime farmland if irrigated and drained

### Map Unit Composition

*Warm springs and similar soils:* 95 percent
*Minor components:* 5 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Warm Springs

#### Setting

*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits

#### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam
*H2 - 8 to 15 inches:* fine sandy loam
*H3 - 15 to 24 inches:* fine sandy loam
*H4 - 24 to 37 inches:* fine sandy loam
*H5 - 37 to 60 inches:* loamy fine sand

#### Properties and qualities

*Slope:* 1 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 36 to 48 inches
*Frequency of flooding:* Rare
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 30.0
*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 2w
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* C

*Ecological site:* R028AY001UT - Alkali Bottom (Alkali Sacaton)
*Hydric soil rating:* No

#### Minor Components

##### Warm springs, shallow water table, uncorrelated

*Percent of map unit:* 5 percent
*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R028AY024UT - Wet Saline Meadow (Saltgrass)
*Hydric soil rating:* Yes

### WgA—Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes

#### Map Unit Setting

*National map unit symbol:* j56z
*Elevation:* 4,200 to 4,400 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Warm springs, strongly alkali, and similar soils:* 95 percent
*Minor components:* 5 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Warm Springs, Strongly Alkali

##### Setting

*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Lacustrine deposits

##### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam
*H2 - 8 to 15 inches:* fine sandy loam
*H3 - 15 to 24 inches:* fine sandy loam
*H4 - 24 to 37 inches:* fine sandy loam
*H5 - 37 to 60 inches:* loamy fine sand

##### Properties and qualities

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 24 to 42 inches
*Frequency of flooding:* Occasional
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Strongly saline (16.0 to 32.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 60.0
*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 4w
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* D
*Ecological site:* R028AY001UT - Alkali Bottom (Alkali Sacaton)
*Hydric soil rating:* No

### Minor Components

#### Warm springs, shallow water table, uncorrelated

*Percent of map unit:* 5 percent
*Landform:* Lake terraces
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Ecological site:* R028AY024UT - Wet Saline Meadow (Saltgrass)
*Hydric soil rating:* Yes

## WIA—Warm Springs fine sandy loam, shallow water table, 0 to 1 percent slopes

### Map Unit Setting

*National map unit symbol:* j571
*Elevation:* 4,200 to 4,400 feet
*Mean annual precipitation:* 14 to 18 inches
*Mean annual air temperature:* 48 to 52 degrees F
*Frost-free period:* 160 to 180 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Warm springs, shallow water table, and similar soils:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Warm Springs, Shallow Water Table

#### Setting

*Landform:* Lake plains
*Landform position (three-dimensional):* Dip, talf
*Down-slope shape:* Linear
*Across-slope shape:* Linear

*Parent material:* Lacustrine deposits

**Typical profile**

*H1 - 0 to 8 inches:* fine sandy loam
*H2 - 8 to 15 inches:* fine sandy loam
*H3 - 15 to 24 inches:* fine sandy loam
*H4 - 24 to 37 inches:* fine sandy loam
*H5 - 37 to 60 inches:* loamy fine sand

**Properties and qualities**

*Slope:* 0 to 1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 0 to 24 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 30 percent
*Maximum salinity:* Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)
*Sodium adsorption ratio, maximum:* 30.0
*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7w
*Hydrologic Soil Group:* C/D
*Ecological site:* R028AY024UT - Wet Saline Meadow (Saltgrass)
*Hydric soil rating:* Yes

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# APPENDIX G

# Additional Photos


**Photo Point 1**


**Photo Point 1**

**Photo Point 2 (316°-NW)**

**Photo Point 3 (60°-NE)**

**Photo Point 4 (317°-NW)**

**Photo Point 4 (125°-SE)**

**Photo Point 5 (90°-E)**

**Photo Point 5 (202°-S)**

**Photo Point 6 (284°-W)**

**Photo Point 7 (303°-NW)**


**Photo Point 8**


**Photo Point 9**


**Photo Point 10**


**Photo Point 11**


**Photo Point 12**


**Photo Point 13**


**Photo Point 14**


**Photo Point 14**


**Photo Point 15**

**Photo Point 16 (61°-NE)**

**Photo Point 17 (254°-W)**

**Photo Point 18 (143°-SE)**

**Photo Point 19 (146°-SE)**

**Photo Point 20 (342°-N)**

**Photo Point 21 (335°-NW)**

**Photo Point 21 (81°-E)**

**Photo Point 22 (137°-SE)**

**Photo Point 23 (325°-NW)**

**Photo Point 23 (158°-S)**

**Photo Point 24 (325°-NW)**

**Photo Point 24 (156°-SE)**

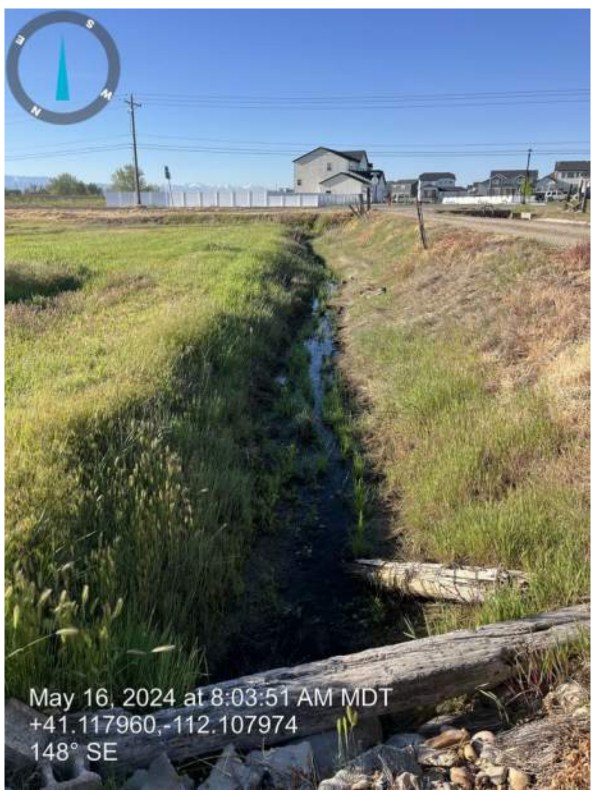


**Photo Point 25**


**Photo Point 26**


**Photo Point 27**


**Photo Point 27**


**Photo Point 28**


**Photo Point 29**


**Photo Point 30**


**Photo Point 30**


**Photo Point 31**


**Photo Point 32**


**Photo Point 33**


**Photo Point 34**


**Photo Point 35**


**Photo Point 35**


**Photo Point 36**


**Photo Point 36**


**Photo Point 37**


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**Photo Point 38**


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**Photo Point 40**


**Photo Point 41**


**Photo Point 41**


**Photo Point 42**


**Photo Point 42**


**Photo Point 43**


**Photo Point 43**


**Photo Point 44**


**Photo Point 45**


**Photo Point 45**


**Photo Point 45**


**Photo Point 46**


**Photo Point 46**


**Photo Point 47**


**Photo Point 47**


**Photo Point 47**


**Photo Point 48 – Flooded Conditions in May**


**Photo Point 48 – Flooded Conditions in Mid-May**


**Photo Point 48 – Dry Conditions in Late-July**


**Photo Point 49**


**Photo Point 50**


**Photo Point 51**


**Photo Point 52**


**Photo Point 52**


**Photo Point 53**


**Photo Point 53**


**Photo Point 54**


**Photo Point 54**


**Photo Point 55**


**Photo Point 55**


**Photo Point 55**


**Photo Point 56**


**Photo Point 56**


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**Photo Point 66**


**Photo Point 67**


**Photo Point 68**


**Photo Point 68**

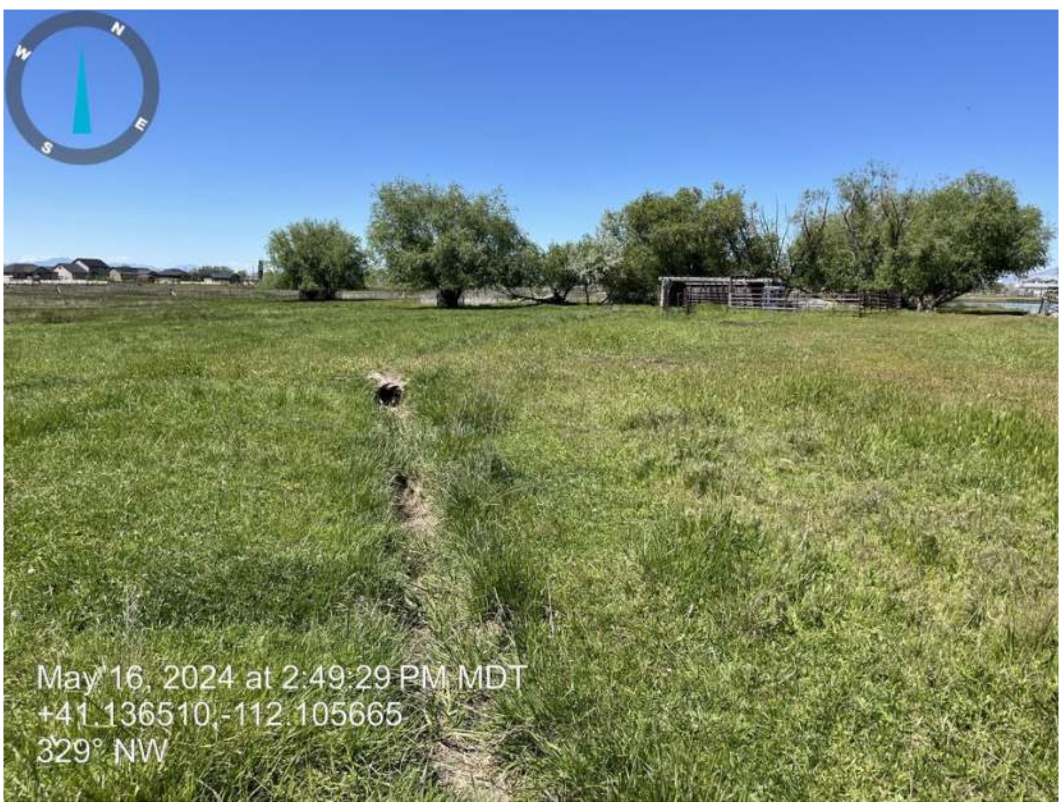


**Photo Point 69**


**Photo Point 70**


**Photo Point 70**


**Photo Point 70**


**Photo Point 71**


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**Photo Point 72**


**Photo Point 73**


**Photo Point 73**


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**Photo Point 76**


**Photo Point 76**


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**Photo Point 79**


**Photo Point 80**


**Photo Point 81**


**Photo Point 81**


**Photo Point 81**

**WDC SR-177, SR-193 to 1800 North**
UDOT


**Photo Point 82**


**Photo Point 82**


**Photo Point 83**


**Photo Point 83**


**Photo Point 83**

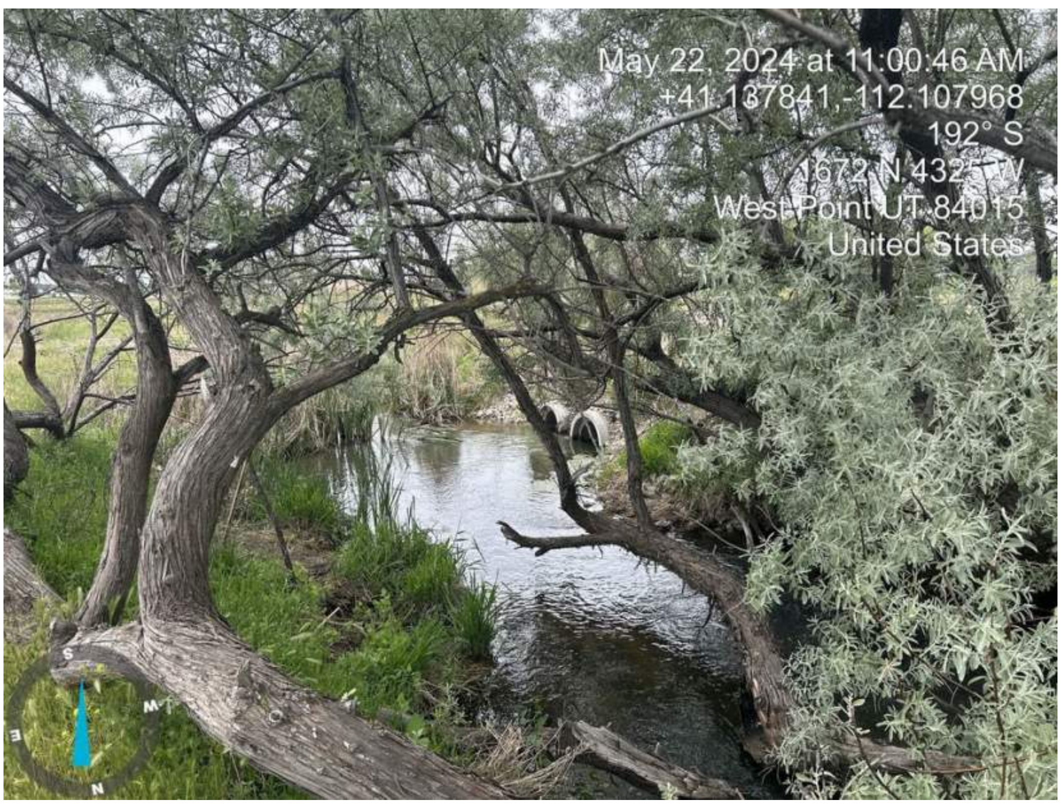


**Photo Point 83**


**Photo Point 83**


**Photo Point 84**


**Photo Point 85**


**Photo Point 86**


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**Photo Point 87**


**Photo Point 88**


**Photo Point 89**


**Photo Point 89**


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**Photo Point 105**


**Photo Point 105**


**Photo Point 106**


**Photo Point 107**


**Photo Point 108**


**Photo Point 109**


**Photo Point 110**


**Photo Point 111**


**Photo Point 112**

**WDC SR-177, SR-193 to 1800 North**
UDOT


**Photo Point 113**


**Photo Point 114**


**Photo Point 114**


**Photo Point 114**


**Photo Point 115**


**Photo Point 116**


**Photo Point 117**


**Photo Point 117**


**Photo Point 118**


**Photo Point 118**


**Photo Point 119**


**Photo Point 119**


**Photo Point 120**


**Photo Point 121**

**WDC SR-177, SR-193 to 1800 North**
UDOT


**Photo Point 122**


**Photo Point 122**


**Photo Point 122**


**Photo Point 122**


**Photo Point 123**


**Photo Point 123**


**Photo Point 124**


**Photo Point 124**

**WDC SR-177, SR-193 to 1800 North**
UDOT


**Photo Point 125**

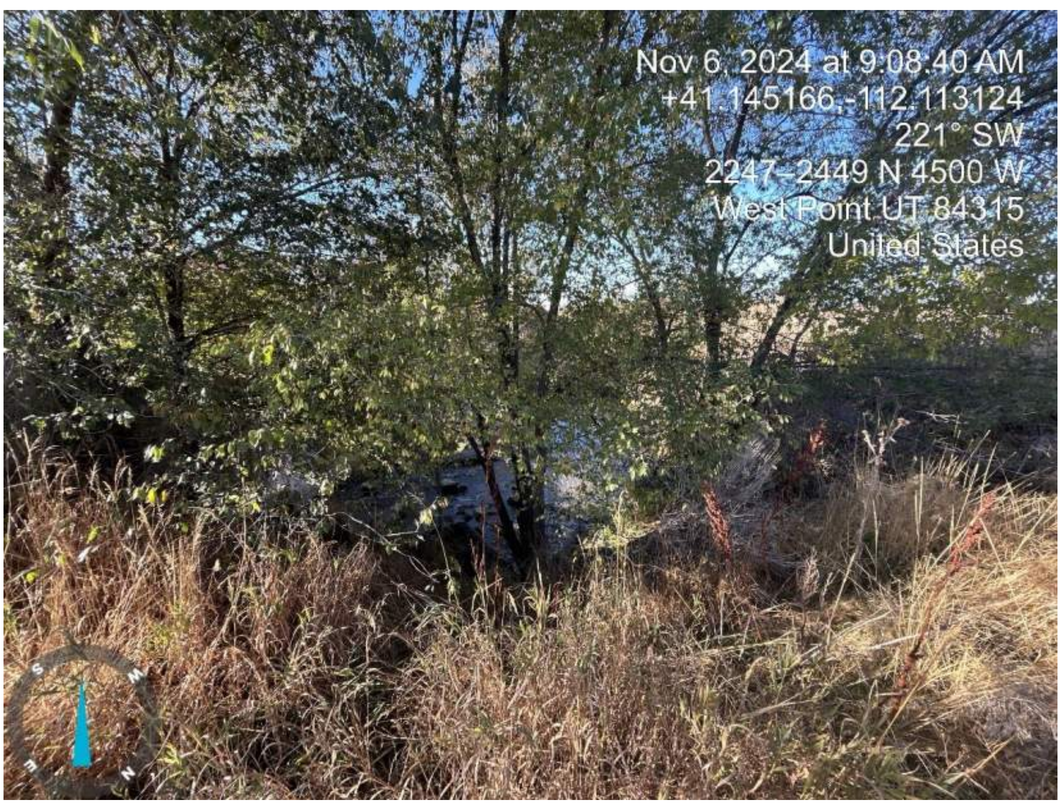


**Photo Point 125**


**Photo Point 125**


**Photo Point 125**


**Photo Point 126**

**Photo Point 127 – November 22, 2024 Facing Northwest**

**Photo Point 128 – November 22, 2024 Facing Northwest**

**Photo Point 128 – November 22, 2024 Facing West**

# APPENDIX H

## Ordinary High Water Mark Data Forms

U.S. Army Corps of Engineers (USACE)

**INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**

The proponent agency is Headquarters USACE CECW-CO-R.

***Form Approved - OMB No. 0710-0025 Expires: 01-31-2025***

**AGENCY DISCLOSURE NOTICE**



| | | |
|---|---|---|
| Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: D1 | Date and Time: May 14, 2024 @ 2:15pm |
| Location (lat/long): 41.110441, -112.100607 | Investigator(s): Elena Capson | |

**Step 1** Site overview from remote and online resources

**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ____

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?

This ditch has been used to water the surrounding agricultural lands. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of delineation and no major flood events had occurred recently.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Flow direction is from east to west, and water levels appear to be moderate. This ditch was excavated and is not a natural flow channel.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**

**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [x] **Break in slope:** X
  - [x] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* X
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ____ to ____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [x] **Change in vegetation type and/or density:** X

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* graminoids
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

OHWM is indicated by the clear change in absent vegetation to thick grasses. The banks are steep.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See D1 in Photo Points 9, 10, and 12.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)

**INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**

The proponent agency is Headquarters USACE CECW-CO-R.

*Form Approved - OMB No. 0710-0025*

*Expires: 01-31-2025*

**AGENCY DISCLOSURE NOTICE**



| | | |
|---|---|---|
| Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: D2 | Date and Time: May 14, 2024 @ 1:45pm |
| Location (lat/long): 41.111089, -112.101418 | Investigator(s): Elena Capson | |

**Step 1** Site overview from remote and online resources

**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ______

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?

Google Imagery shows that the canal was constructed between 1997 and 2003. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of delineation and no major flood events had occurred recently.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Flow appears to be moderate. Channel widens where clogged by phrag and other vegetation. Some depositional vegetation is present along bank. Flows from east to west and enters canal through RCP culverts. Canal is likely excavated and is lined by two-track roads.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**

**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [x] **Break in slope:** x
  - [x] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ______
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ______
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* x
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [x] **Change in vegetation type and/or density:** x

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***
  - [x] *vegetation absent to:* graminoids
  - [ ] *moss to:*
  - [ ] *forbs to:*
  - [ ] *graminoids to:*
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [x] **Vegetation matted down and/or bent:** b
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [x] **Wracking/presence of organic litter:** b
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Vegetation not entirely absent just below OHWM. It is predominantly detritus and decadent plant material.

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

Bent and dead vegetation transitions to grasses at the break in slope. Water pools downstream before leaving the site. Where vegetation is absent, OHWM is indicated by exposed rocks along a scour line.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See D2 in Photo Points 13, 100, and 101

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)

# INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

*Form Approved -*
*OMB No. 0710-0025*
*Expires: 01-31-2025*

**AGENCY DISCLOSURE NOTICE**



Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: OW1 | Date and Time: May 16, 2024 @ 10:30pm & July 25, 2024 @ 8:20am

Location (lat/long): 41.129074, -112.109433 | Investigator(s): Elena Capson

**Step 1** Site overview from remote and online resources
**Check boxes for online resources used to evaluate site:**

- ☐ gage data
- ☑ LiDAR
- ☐ geologic maps
- ☑ climatic data
- ☑ satellite imagery
- ☐ land use maps
- ☑ aerial photos
- ☑ topographic maps
- ☐ Other: ______

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?

This pond is surrounded by agricultural lands. Fill material has been placed in this section of land since 2009. There is no evidence of ponding to this extent in any of the Google Earth imagery for the area. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Water follows the irregular shape of current fill material. Water exits the pond to the north, and a culvert appears to drain storm water into the pond from the west. Excessive amounts of tannins from inundated upland vegetation suggests that water does not normally exists here.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**
**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- ☐ **Break in slope:**
  - ☐ *on the bank:*
  - ☐ *undercut bank:*
  - ☐ *valley bottom:*
  - ☐ Other: ______
- ☐ **Shelving:**
  - ☐ *shelf at top of bank:*
  - ☐ *natural levee:*
  - ☐ *man-made berms or levees:*
  - ☐ *other berms:* ______
- ☐ **Channel bar:**
  - ☐ *shelving (berms) on bar:*
  - ☐ *unvegetated:*
  - ☐ *vegetation transition (go to veg. indicators)*
  - ☐ *sediment transition (go to sed. indicators)*
  - ☐ *upper limit of deposition on bar:*
- ☐ **Instream bedforms and other bedload transport evidence:**
  - ☐ *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - ☐ *bedforms (e.g., pools, riffles, steps, etc.):*
  - ☐ *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- ☐ **Secondary channels:**

**Sediment indicators**

- ☐ **Soil development:**
- ☐ **Changes in character of soil:**
- ☐ **Mudcracks:**
- ☐ **Changes in particle-sized distribution:**
  - ☐ *transition from* ______ to ______
  - ☐ *upper limit of sand-sized particles*
  - ☐ *silt deposits:*

**Vegetation Indicators**

- ☐ **Change in vegetation type and/or density:**
  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***
  - ☐ *vegetation absent to:*
  - ☐ *moss to:*
  - ☐ *forbs to:*
  - ☐ *graminoids to:*
  - ☐ *woody shrubs to:*
  - ☐ *deciduous trees to:*
  - ☐ *coniferous trees to:*
- ☐ **Vegetation matted down and/or bent:**
- ☐ **Exposed roots below intact soil layer:**

**Ancillary indicators**

- ☐ **Wracking/presence of organic litter:**
- ☐ **Presence of large wood:**
- ☐ **Leaf litter disturbed or washed away:**
- ☐ **Water staining:**
- ☐ **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

There is no break or transition in vegetation. Upland vegetation present above the water line is consistent with vegetation below the water line. Brown color in water results from tannins leaching out of inundated upland vegetation.

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

No OHWM indicators are present, and ponding is not present on aerial imagery available in Google Earth. This suggests that this area is not generally inundated and has not had time to develop OHWM indicators.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See OW1 in photos at Photo Points 51, 52, 53, 58, 59, 61, and 107

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)
**INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**
The proponent agency is Headquarters USACE CECW-CO-R.

***Form Approved -***
***OMB No. 0710-0025***
***Expires: 01-31-2025***

**AGENCY DISCLOSURE NOTICE**

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: OW2 | Date and Time: May 16, 2024 @ 11:30pm

Location (lat/long): 41.130983, -112.107666 | Investigator(s): Elena Capson

**Step 1** Site overview from remote and online resources
**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ____________

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?

This pond is located in a residential backyard with agricultural lands to the west. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of delineation, but no major flood events had occurred recently.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Due to the regular shape of the pond, it appears to be excavated. Some rushes exist below the OHWM, but vegetation above the OHWM is predominantly upland turf grasses likely managed by the homeowner.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**
**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [ ] **Break in slope:**
  - [ ] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ____________
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ____________
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* X
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [x] **Change in vegetation type and/or density:** X

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* graminoids
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

OHWM is indicated by the clear change in absent vegetation to upland grasses.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See OW2 in Photo Point 102

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)

**INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**

The proponent agency is Headquarters USACE CECW-CO-R.

***Form Approved - OMB No. 0710-0025 Expires: 01-31-2025***

**AGENCY DISCLOSURE NOTICE**

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

| | | |
|---|---|---|
| Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: D4 | Date and Time: May 22, 2024 @ 11:00pm |
| Location (lat/long): 41.137677, -112.107994 | Investigator(s): Elena Capson | |

**Step 1** Site overview from remote and online resources
**Check boxes for online resources used to evaluate site:**

- ☐ gage data
- ☑ LiDAR
- ☐ geologic maps
- ☑ climatic data
- ☑ satellite imagery
- ☐ land use maps
- ☑ aerial photos
- ☑ topographic maps
- ☐ Other: ______

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?

This ponded ditch is part of an irrigation system used to water the surrounding agricultural lands. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of delineation and no major flood events had occurred recently.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Water enters this ponded portion of irrigation ditch from culverts to both the north and the south. Water then flows to the middle and out through a culvert to the west. This ditch was excavated and is not a natural flow channel.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**
**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- ☑ **Break in slope:** X
  - ☑ *on the bank:*
  - ☐ *undercut bank:*
  - ☐ *valley bottom:*
  - ☐ Other: ______
- ☐ **Shelving:**
  - ☐ *shelf at top of bank:*
  - ☐ *natural levee:*
  - ☐ *man-made berms or levees:*
  - ☐ *other berms:* ______
- ☐ **Channel bar:**
  - ☐ *shelving (berms) on bar:*
  - ☐ *unvegetated:*
  - ☑ *vegetation transition (go to veg. indicators)* X
  - ☐ *sediment transition (go to sed. indicators)*
  - ☐ *upper limit of deposition on bar:*
- ☐ **Instream bedforms and other bedload transport evidence:**
  - ☐ *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - ☐ *bedforms (e.g., pools, riffles, steps, etc.):*
  - ☐ *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- ☐ **Secondary channels:**

**Sediment indicators**

- ☐ **Soil development:**
- ☐ **Changes in character of soil:**
- ☐ **Mudcracks:**
- ☐ **Changes in particle-sized distribution:**
  - ☐ *transition from* ______ to ______
  - ☐ *upper limit of sand-sized particles*
  - ☐ *silt deposits:*

**Vegetation Indicators**

- ☑ **Change in vegetation type and/or density:** X

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- ☑ *vegetation absent to:* graminoids
- ☐ *moss to:*
- ☐ *forbs to:*
- ☐ *graminoids to:*
- ☐ *woody shrubs to:*
- ☐ *deciduous trees to:*
- ☐ *coniferous trees to:*
- ☐ **Vegetation matted down and/or bent:**
- ☐ **Exposed roots below intact soil layer:**

**Ancillary indicators**

- ☐ **Wracking/presence of organic litter:**
- ☐ **Presence of large wood:**
- ☐ **Leaf litter disturbed or washed away:**
- ☐ **Water staining:**
- ☐ **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

OHWM is indicated by the clear change in absent/sparse vegetation to thick upland grasses.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See D4 in photos facing south at Photo Point 83.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)

**INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**

The proponent agency is Headquarters USACE CECW-CO-R.

***Form Approved - OMB No. 0710-0025 Expires: 01-31-2025***

**AGENCY DISCLOSURE NOTICE**



Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: OW3 | Date and Time: May 16, 2024 @ 4:30pm

Location (lat/long): 41.137306, -112.105634 | Investigator(s): Elena Capson

**Step 1** Site overview from remote and online resources
**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ____

**Describe land use and flow conditions from online resources.** Were there any recent extreme events (floods or drought)?

This pond is located near residences surrounded by agricultural lands. The pond is used for regulating an irrigation system. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of delineation, but no major flood events had occurred recently.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

This pond is very shallow and the levels appear to be controlled. Vegetation above the OHWM is predominantly upland turf grasses likely managed by the landowner.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**
**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [x] **Break in slope:** X
  - [x] *on the bank:* X
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ____
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* X
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ____ to ____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [x] **Change in vegetation type and/or density:** X

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* graminoids
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

OHWM is indicated by the clear change from absent vegetation to upland grasses. Little visible water staining suggests that the water level at the time of the delineation is the OHWM.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See OW3 in Photo Point 71.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)

**INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**

The proponent agency is Headquarters USACE CECW-CO-R.

***Form Approved -***

***OMB No. 0710-0025***

***Expires: 01-31-2025***

**AGENCY DISCLOSURE NOTICE**



| Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: OW4 | Date and Time: May 16, 2024 @ 4:00pm |
|---|---|---|
| Location (lat/long): 41.137557, -112.104833 | Investigator(s): Elena Capson | |

**Step 1** Site overview from remote and online resources

**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ______

**Describe land use and flow conditions from online resources.** Were there any recent extreme events (floods or drought)?

This pond is located near residences surrounded by agricultural lands. The pond is used for recreation and regulating an irrigation system. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of delineation, but no major flood events had occurred recently.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

This pond appears to be managed for fish and native bird species. Artificial goose nests are present in the middle of the lake. Water enters and exits the pond through various culverts. The mixed upland and wetland vegetation above the OHWM is likely managed by the landowner.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**

**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [x] **Break in slope:** X
  - [x] *on the bank:* X
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ______
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ______
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* X
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [x] **Change in vegetation type and/or density:** X

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* graminoids
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

OHWM is indicated by the clear change from absent vegetation to upland grasses. Little visible water staining suggests that the water level at the time of the delineation is the OHWM.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See OW4 in Photo Points 70, 71, 72, and 74.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

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U.S. Army Corps of Engineers (USACE)
**INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**
The proponent agency is Headquarters USACE CECW-CO-R.

*Form Approved - OMB No. 0710-0025 Expires: 01-31-2025*

**AGENCY DISCLOSURE NOTICE**

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

| | | |
|---|---|---|
| Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: S1 | Date and Time: May 22, 2024 @ 1:00pm |
| Location (lat/long): 41.146842, -112.111292 | Investigator(s): Elena Capson | |

**Step 1** Site overview from remote and online resources
**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ______

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?

This section of the Howard Slough has been used to water the surrounding agricultural lands. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of delineation and no major flood events had occurred recently.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Flow direction is from north to south, and water levels appear to be moderate. At this point, the slough flows into a culvert under a road and a canal.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**
**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [x] **Break in slope:**
  - [x] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ______
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ______
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* X
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [x] **Change in vegetation type and/or density:** X

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs). **Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* graminoids
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Vegetation transition is dominated by grasses, but forbs and trees are also present.

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

OHWM is indicated by the clear change from absent vegetation to distinctly present vegetation. Upstream banks are trampled by livestock, so no clear break in bank is visible.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See S1 in Photo Point 91.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)

**INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**

The proponent agency is Headquarters USACE CECW-CO-R.

*Form Approved - OMB No. 0710-0025*

*Expires: 01-31-2025*

**AGENCY DISCLOSURE NOTICE**

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

| | | |
|---|---|---|
| Project ID #: UDOT PIN: 20927; SR-177, SR-193 to 1800 North; WDC Phase II | Site Name: D6 | Date and Time: Varies: May 13, 14, 16, 11 & July 25, 2024 |
| Location (lat/long): 41.140173, -112.110693 | Investigator(s): Elena Capson | |

**Step 1** Site overview from remote and online resources

**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ______

**Describe land use and flow conditions from online resources.** Were there any recent extreme events (floods or drought)?

This canal is used to water the surrounding agricultural lands. The USACE Antecedent Precipitation tool shows that conditions were wetter than normal at the time of delineation and no major flood events had occurred recently.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Flow direction is from north to south, and water levels appear to be high. This canal is concrete lined and is an artificial channel.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**

**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [ ] **Break in slope:**
  - [ ] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ______
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ______
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [ ] **Change in vegetation type and/or density:**

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [ ] *vegetation absent to:*
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [x] **Water staining:** x
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #: UDOT PIN: 20927; SR-177,

**Step 4** Is additional information needed to support this determination? ☐ Yes ☑ No If yes, describe and attach information to datasheet:

**Step 5** Describe rationale for location of OHWM

OHWM is indicated by the water staining on the concrete canal lining and the bleached leaves of overhanging vegetation.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☑ No If no, explain why not: See D6 in Photo Points 27, 59, 84, 85, 87, 95, and 96.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)

**RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**

The proponent agency is Headquarters USACE CECW-CO-R.

***From Approved - OMB No. 0710-0025***

***Expires: 01-31-2025***

**AGENCY DISCLOSURE NOTICE**



| | | |
|---|---|---|
| Project ID #: UDOT PIN: 20927; SR-117, SR-193 to 1800 North; WDC Phase II | Site Name: D8 | Date and Time: July 25, 2024 @ 9am |
| Location (lat/long): 41.137747, -112.103391 | Investigator(s): Cara Glabau | |

**Step 1** Site overview from remote and online resources

**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ______

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?
This drainage channel conveys water from agricultural lands to the west to the pond to the east. No major flood event had occurred recently. The USACE Antecedent Precipitation tool shows that conditions were drier than normal at the time of the delineation.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Flow direction is from east to west, and water levels appear to be moderate, even with the dry conditions. This appears to be a natural drainage that drains upstream springs. It has sections that have been culverted outside the delineation area.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**

**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [x] **Break in slope:** x
  - [x] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ______
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ______
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* x
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [x] **Change in vegetation type and/or density:** x

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs)*. ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***
  - [ ] *vegetation absent to:*
  - [ ] *moss to:*
  - [x] *forbs to:* graminoids
  - [ ] *graminoids to:*
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [x] **Water staining:** x
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #:

**Step 4** Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

Vegetation change at the ordinary high water mark. This transitions from cattails to upland grasses.

**Step 5** Describe rationale for location of OHWM

This is a slow moving channel with pooling. Distinct change between upland grasses and cattails at the ordinary high water mark, as well as water staining on those cattails is visible. The occurs at the break in slope.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☒ No If no, explain why not: See D8 in Photo Point 109 and 110.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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| U.S. Army Corps of Engineers (USACE)<br>**RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET**<br>The proponent agency is Headquarters USACE CECW-CO-R. | ***From Approved -***<br>***OMB No. 0710-0025***<br>***Expires: 01-31-2025*** |
|---|---|

**AGENCY DISCLOSURE NOTICE**

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

| Project ID #: UDOT PIN: 20927; SR-117, SR-193 to 1800 North; WDC Phase II | Site Name: D9 | Date and Time: July 25, 2024 @ 10am |
|---|---|---|
| Location (lat/long): 41.138009, -112.105852 | Investigator(s): Cara Glabau | |

**Step 1** Site overview from remote and online resources
**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ______

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?
This drainage channel conveys water from a pond through a meadow, before being culverted into a larger drainage channel. No major flood event had occurred recently. The USACE Antecedent Precipitation tool shows that conditions were drier than normal at the time of the delineation.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Flow direction is primarily from south to north, and then west. Water levels appear to be moderate, even with the dry conditions. This channel drains overflow form the nearby pond, and appears to have perennial flows.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**
**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

**Geomorphic indicators**

- [x] **Break in slope:** x
  - [x] *on the bank:*
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: ______
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ______
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* x
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

**Sediment indicators**

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

**Vegetation Indicators**

- [x] **Change in vegetation type and/or density:** x
  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs)*. ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***
  - [x] *vegetation absent to:* forbs
  - [ ] *moss to:*
  - [ ] *forbs to:*
  - [ ] *graminoids to:*
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

**Ancillary indicators**

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #: ______________________

**Step 4** Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

No vegetation below ordinary high water mark. A mix of bulrush and grasses growing directly above ordinary high water mark.

**Step 5** Describe rationale for location of OHWM

Distinct change in vegetation occurs at the break in the slope, forbs and grasses transition to an absence of vegetation below the ordinary high water mark.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☒ No If no, explain why not: See D9 in Photo Point 117, 118, and 119.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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U.S. Army Corps of Engineers (USACE)

# RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

*From Approved - OMB No. 0710-0025*
*Expires: 01-31-2025*



Project ID #: UDOT PIN: 20927; SR-117, SR-193 to 1800 North; WDC Phase II | Site Name: D10 | Date and Time: July 25, 2024 @ 11am

Location (lat/long): 41.136714, -112.106109 | Investigator(s): Cara Glabau

**Step 1** Site overview from remote and online resources
**Check boxes for online resources used to evaluate site:**

- [ ] gage data
- [x] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: ________

**Describe land use and flow conditions from online resources.**
Were there any recent extreme events (floods or drought)?
This drainage channel conveys water from a pond through a meadow, before being culverted into a larger drainage channel. No major flood event had occurred recently. The USACE Antecedent Precipitation tool shows that conditions were drier than normal at the time of the delineation.

**Step 2** Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Flow direction is primarily from north to south and then west. Water levels appear to be moderate, even with the dry conditions. This channel drains overflow form the nearby pond, and appears to have perennial flows.

**Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.**
**OHWM is at a transition point,** therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

### Geomorphic indicators

- [x] **Break in slope:** x
  - [x] *on the bank:*
  - [x] *undercut bank:* x
  - [ ] *valley bottom:*
  - [ ] Other: ________
- [ ] **Shelving:**
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:*
  - [ ] *other berms:* ________
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [x] *vegetation transition (go to veg. indicators)* x
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

### Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* ______ to ______
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

### Vegetation Indicators

- [x] **Change in vegetation type and/or density:** x

Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs)*. ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

- [x] *vegetation absent to:* graminoids
- [ ] *moss to:*
- [ ] *forbs to:*
- [ ] *graminoids to:*
- [ ] *woody shrubs to:*
- [ ] *deciduous trees to:*
- [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

### Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [ ] **Presence of large wood:**
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

**Other observed indicators? Describe:**

Project ID #: ____________

**Step 4** Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

No vegetation below ordinary high water mark with grasses growing directly above ordinary high water mark.

**Step 5** Describe rationale for location of OHWM

Distinct change in vegetation occurs at the break in the slope, grasses transition to an absence of vegetation below the ordinary high water mark. Extensive undercutting is present at some locations along the channel from high flows.

**Additional observations or notes**

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☒ No If no, explain why not: See D10 in Photo Point 122 and 123.

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

| Photo Number | Photograph description |
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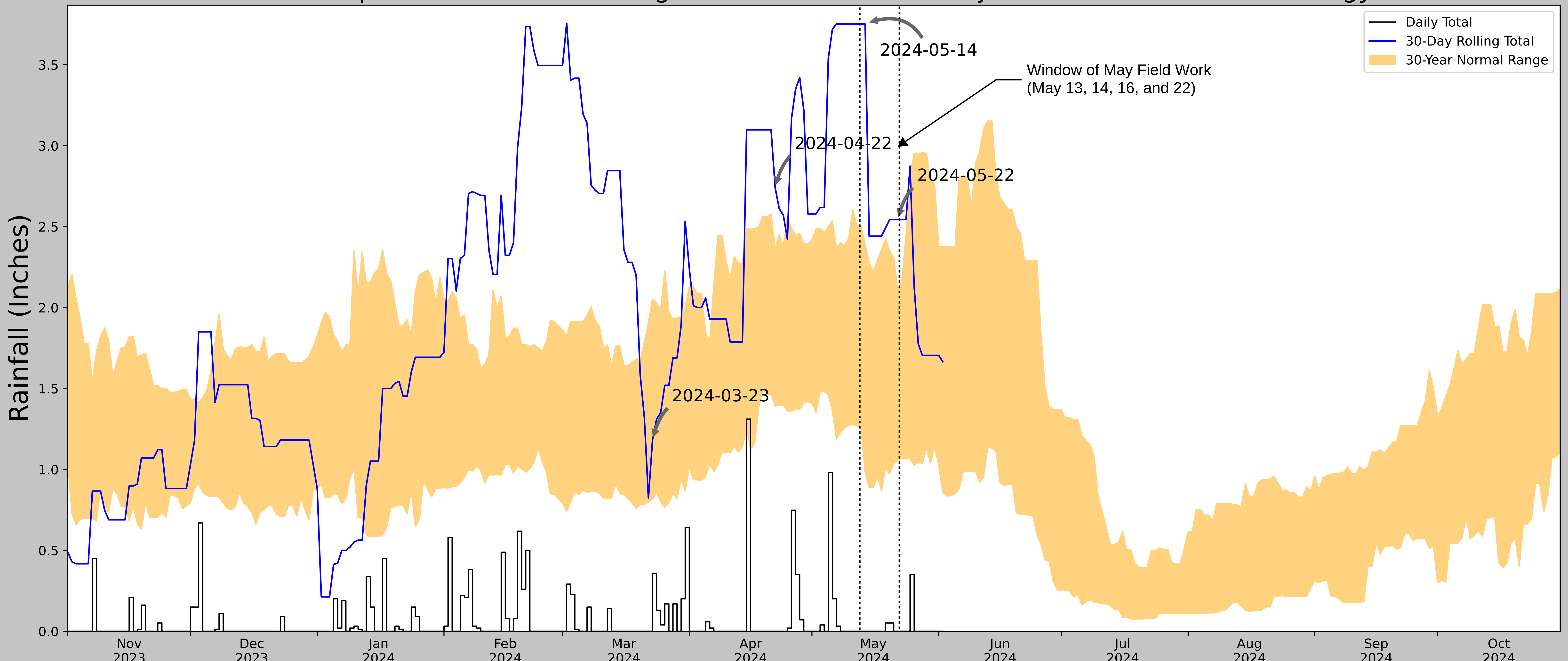
# APPENDIX I

## Antecedent Precipitation Figure

## Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network




| | |
|---|---|
| Coordinates | 41.1111814, -112.1010244 |
| Observation Date | 2024-05-22 |
| Elevation (ft) | 4243.63 |
| Drought Index (PDSI) | Mild wetness (2024-04) |
| WebWIMP $H_2O$ Balance | Dry Season |

| 30 Days Ending | $30^{th}$ %ile (in) | $70^{th}$ %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
|---|---|---|---|---|---|---|---|
| 2024-05-22 | 1.059449 | 2.102756 | 2.543307 | Wet | 3 | 3 | 9 |
| 2024-04-22 | 1.391732 | 2.361811 | 2.740158 | Wet | 3 | 2 | 6 |
| 2024-03-23 | 0.816929 | 2.054724 | 1.181102 | Normal | 2 | 1 | 2 |
| Result | | | | | | | Wetter than Normal - 17 |

| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days Normal | Days Antecedent |
|---|---|---|---|---|---|---|---|
| OGDEN HINKLEY AP | 41.1942, -112.0169 | 4449.147 | 7.215 | 205.517 | 4.73 | 9256 | 90 |
| ROY 1.7 NNE | 41.1937, -112.0266 | 4457.021 | 0.506 | 7.874 | 0.232 | 2 | 0 |
| SOUTH OGDEN 1.3 N | 41.1935, -111.9623 | 4499.016 | 2.839 | 49.869 | 1.419 | 6 | 0 |
| OGDEN SUGAR FACTORY | 41.2319, -112.0283 | 4279.856 | 2.671 | 169.291 | 1.654 | 1973 | 0 |
| SUNSET 0.4 SW | 41.1341, -112.0327 | 4514.108 | 4.233 | 64.961 | 2.18 | 1 | 0 |
| WEST HAVEN 2.0 SW | 41.1848, -112.0901 | 4238.845 | 3.861 | 210.302 | 2.549 | 14 | 0 |
| OGDEN PIONEER PH | 41.2439, -111.9467 | 4350.066 | 5.01 | 99.081 | 2.751 | 94 | 0 |
| FARMINGTON 3 NW | 41.0203, -111.9328 | 4379.921 | 12.788 | 69.226 | 6.64 | 6 | 0 |

Figure and tables made by the
**Antecedent Precipitation Tool**
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

# Appendix E - CULTURAL RESOURCES

***Determination of Eligibility Finding of Effect (DOEFOE)***

Spencer J. Cox
*Governor*

Deidre M. Henderson
*Lieutenant Governor*

Donna Law
*Interim Executive Director*

Utah SHPO

Christopher Merritt
*State Historic Preservation Officer*
*Utah State Historic Preservation Office*

January 23, 2025

Liz Robinson
Cultural Resources Program Manager
Utah Dept of Transportation (UDOT)
4501 Constitution Blvd
Salt Lake City, Utah 84119

RE: PIN 20927_ West Davis Corridor SR-177, SR-193 to 1800 North

For future correspondence, please reference Case No. 25-0084

Dear Ms Robinson,

The Utah State Historic Preservation Office received your submission and request for our comment on the above-referenced undertaking on January 22, 2025.

We concur with your determinations of eligibility and effect for this undertaking.

This letter serves as our comment on the determinations you have made within the consultation process specified in §36CFR800.4. If you have questions, please contact me at (801) 535-2502 or by email at rmcgrath@utah.gov.

Sincerely,

Ryan P McGrath

Ryan McGrath
Compliance Archaeologist

State of Utah

SPENCER J. COX
*Governor*

DEIDRE M. HENDERSON
*Lieutenant Governor*

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
*Executive Director*

LISA J. WILSON, P.E.
*Deputy Director of Engineering and Operations*

BENJAMIN G. HUOT, P.E.
*Deputy Director of Planning and Investment*

January 22, 2024

Mr. Ryan McGrath
Compliance Archaeologist
Utah Division of State History
3760 Highland Dr.
Millcreek, UT 84106

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Determination of Eligibility and Finding of No Adverse Effect.**

Dear Mr. McGrath:

The Utah Department of Transportation (UDOT) is preparing to undertake the subject federal-aid project. In accordance with Parts 3.1.1 and 3.2 of the *Memorandum of Understanding Between the Federal Highway Administration and the Utah Department of Transportation Concerning State of Utah's Participation in the Surface Transportation Project Delivery Program Pursuant to 23 USC §327* (renewed May 26, 2022), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. Also in accordance with the *Third Amended Programmatic Agreement among the FHWA, the Utah State Historic Preservation Officer, the Advisory Council on Historic Preservation, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah* (executed August 23, 2017), Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq.), and U.C.A.9-8-404, the UDOT has taken into account the effects of this undertaking on historic properties, and is affording the Utah State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking. Additionally, this submission is in compliance with Section 4(f) of the Department of Transportation Act of 1966, 23 U.S.C. § 138 (as amended) and 49 U.S.C. § 303 (as amended).

**PROJECT DESCRIPTION**

The Utah Department of Transportation (UDOT) is preparing to undertake a re-evaluation of the West Davis Corridor Environmental Impact Statement (EIS). A Final EIS and Section 4(f) Evaluation for the West Davis Corridor (WDC) was completed in June 2017 and approved through the issuance of a Record of Decision (ROD) on September 29, 2017, from the Federal Highway Administration (FHWA). This re-evaluation is evaluating the design refinements proposed to address the change of conditions in the project area between State Route 193 (SR-193) and 1800 North in Davis County, Utah since approval of the EIS Selected Alternative (ESA) in the ROD. The design refinements include the need for a four-lane freeway (increased from a two-lane freeway in the ESA), improved alignment curvature, trail alignment, updated detention ponds and utility relocations.

The original determination of eligibility, finding of effect and Section 4(f) determinations were submitted to the Utah SHPO in 2012 with a determination of Adverse Effect, which was resolved with a Programmatic Agreement (Case No. 13-0029) The area of potential affects (APE) for this re-evaluation includes the polygon of the roadway footprint as well as linear corridors to accommodate trail, drainage and utility placement.

The APE has been surveyed for archaeology by Certus Environmental Solutions, under State Antiquities Project Number U24HY0375, and the results are reported in *An Archaeological Resource Assessment for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah* (see enclosed report). An intensive level pedestrian survey was conducted using 15 meter transects to identify archaeological resources. A reconnaissance selective level survey was conducted to record architectural properties, and the results are reported in *Selective Reconnaissance-Level Historic Structures Inventory for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah* (see enclosed report).

The surveys have resulted in the identification of 3 archaeological sites and 5 architectural properties. Of these, only one archaeological site is eligible to the National Register of Historic Places (NRHP). No known traditional cultural properties are located in the APE. The Determinations of Eligibility and Findings of Effects (for both Section 106 and Section 4(f)) are provided in Table 1 for archaeological resources and in Table 2 for architectural properties. Please see attached notification letter regarding Section 4(f) *de minimis* impacts.

## ARCHAEOLOGICAL RESOURCES

Table 1. Determinations of Eligibility and Findings of Effect for Archaeological Resources.

| Site | Name or Description | NRHP Eligibility | Finding of Effect | Section 4(f) Use | Section 4(f) Impact |
|---|---|---|---|---|---|
| 42DV138 | Unnamed land drain | Not Eligible | No Historic Properties Affected | N/A | N/A |
| 42DV158/ 42DV223 | Hooper Canal | Eligible (Criterion A) | No Adverse Effect | Yes | *De minimis* |
| 42DV182 | Layton Canal | Not Eligible | No Historic Properties Affected | N/A | N/A |

***Description of Effect to Site 42DV158/42DV223:*** The project will impact portions of the site that are piped and some that are open channel. Approximately 2800 feet of buried pipe will be relocated to the west side of SR-177 at the request of the canal company and to increase maintenance accessibility. This portion has been recommended as non-contributing to the eligibility of the site as a whole as it is no longer visible on the landscape. Of the open channel section of the site, the project will impact 64 feet of the canal in 3 locations of sidewalk or trail crossings. The sidewalk location is at 1300 North and will expand the existing culvert to accommodate the sidewalk. The other two crossings are new trail crossings that will be carried with 24-foot-wide culverts. The project will affect a relatively small portion of the contributing components of the site and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect. This site qualifies as a historic property under Section 4(f) and the proposed impacts will constitute a use and *de minimis* impact.

## ARCHITECTURAL PROPERTIES

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties.

| Address | Date | Style | NRHP Eligibility/ SHPO Rating | Finding of Effect | Section 4(f) Use | Section 4(f) Impact |
|---|---|---|---|---|---|---|
| 4133 West 1800 North West Point | 1971 | Ranch/Rambler | Not Eligible/NC | No Historic Properties Affected | N/A | N/A |
| 4182 West 1300 North, West Point | 1974 | Ranch/Rambler | Not Eligible/NC | No Historic Properties Affected | N/A | N/A |
| 4233 West 300 North, West Point | 1977 | Agricultural Outbuilding | Not Eligible/NC | No Historic Properties Affected | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4300 West 300 North, West Point | 1968 | Agricultural Outbuilding | Not Eligible/NC | No Historic Properties Affected | N/A | N/A |
| 4320 West 300 North, West Point | 1960 | Agricultural Outbuilding | Not Eligible/NC | No Historic Properties Affected | N/A | N/A |

**CONSULTATION EFFORTS**

Native American consultation was initiated through letters sent to the Confederated Tribes of the Goshute Reservation, Skull Valley Band of Goshute, Uintah and Ouray Ute Tribes, Shoshone-Bannock Tribes, and Northwestern Band of Shoshone Nation, Eastern Shoshone Tribe of the Wind River Reservation (sent August 22, 2024). No responses or comments were received.

**SUMMARY**

To summarize, the project will result in a finding of No Adverse Effect and Section 4(f) use for 1 archaeological site, and a finding of No Historic Properties Affected for all remaining architectural properties and archaeological sites. Therefore, the Finding of Effect for the proposed re-evaluation of UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah, is **No Adverse Effect**. However, the West Davis Corridor project as a whole retains the status of Adverse Effect.

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by UDOT pursuant to 23 *USC §327* and a Memorandum of Understanding dated May 26, 2022, and executed by FHWA and UDOT.

Please review this document and, providing you agree with the findings contained herein, provide written concurrence. Should you have any questions or need additional information, please feel free to contact Liz Robinson at 801-910-2035 or lizrobinson@utah.gov; or David Amott at 801-971-4808 or damott@utah.gov.

Sincerely,

Liz Robinson, M.A., RPA
Cultural Resources Program Manager
UDOT Environmental Services

David Amott, AICP
Architectural Historian
UDOT Environmental Services

Enclosures

cc: Brandon Weston, Project Manager
Corey Nelson, Environmental Manager

Figure 1 – Hooper Canal impact areas

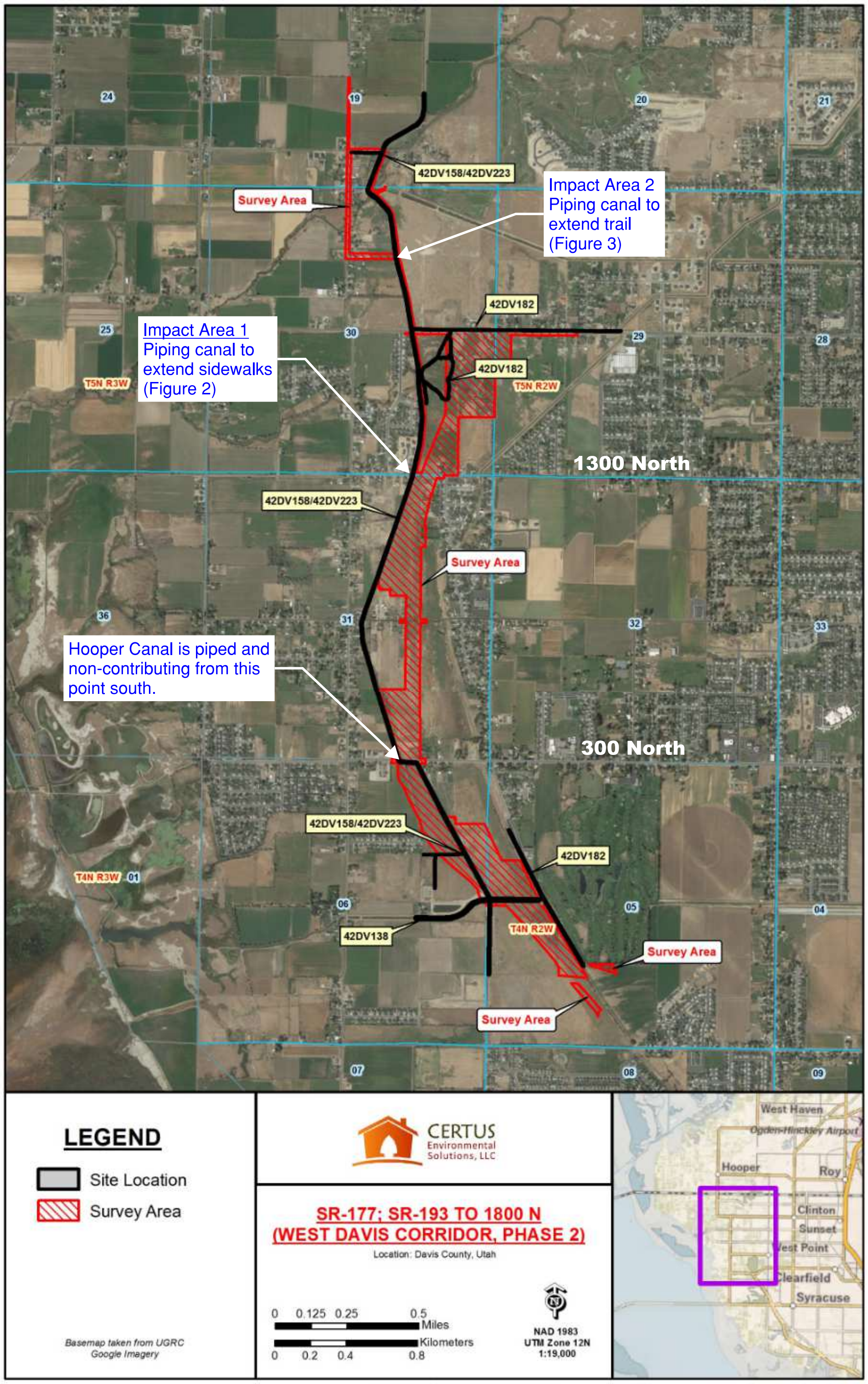


Figure 2 – Impact Area 1. Hooper Canal at 1300 North

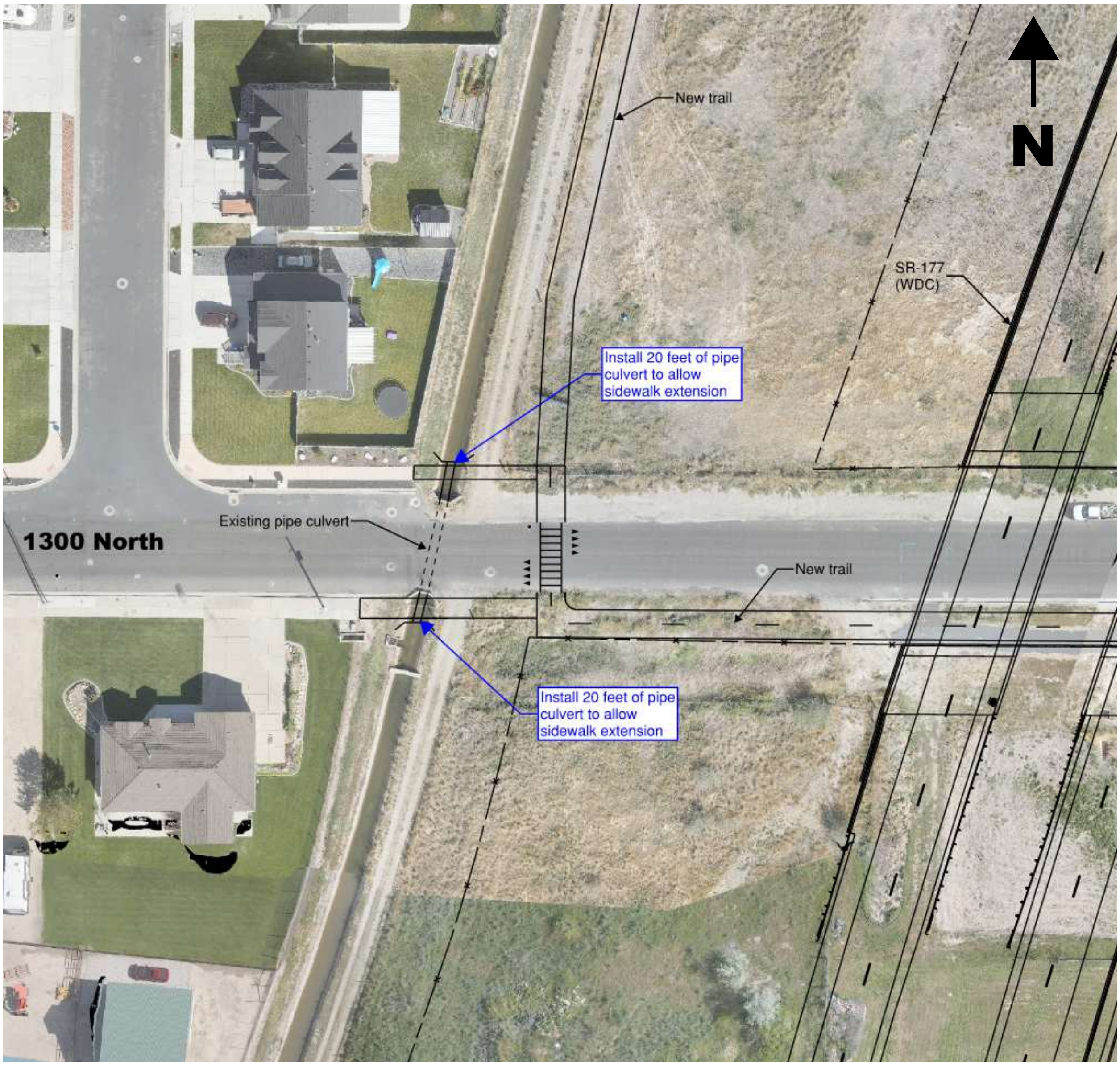
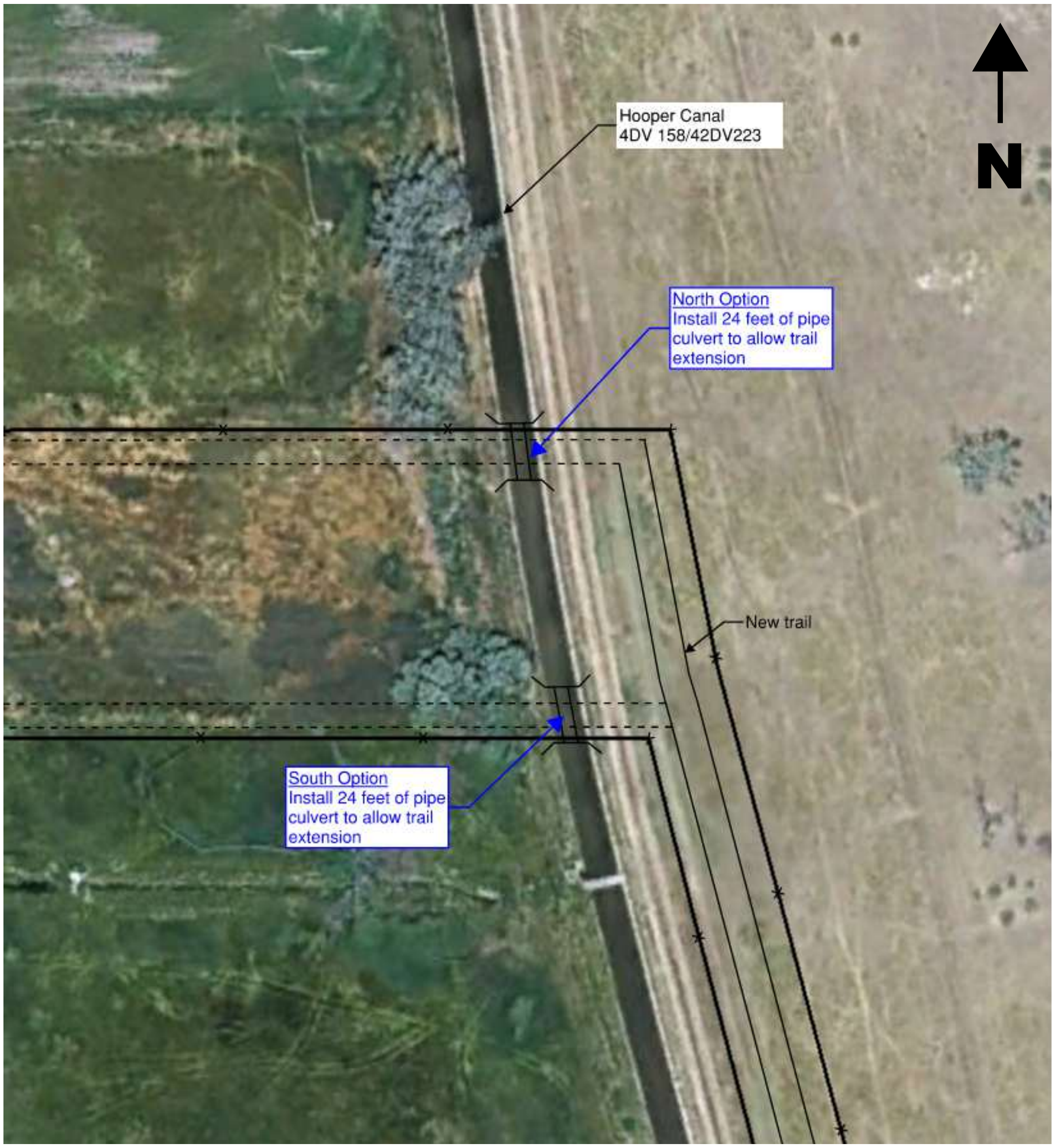


Figure 3 – Impact Area 2. Hooper Canal at about 2050 North



***Historic Architecture***

# A Selective Reconnaissance-Level Historic Structures Inventory for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah

## UDOT Project No. S-R-199(381); PIN 20927

Prepared for

Bowen Collins & Associates

Prepared by

Sheri Murray Ellis, MS, RPA
Owner /Consultant

CERTUS Environmental Solutions, LLC

Certus Environmental Solutions, LLC
Salt Lake City, Utah
801.230.7260

**Utah Antiquities Report No. U24HY0375**
**PLPCO Permit No. 176**

**Certus Project Number BCA77**

December 5, 2024

# Project Abstract Sheet

**Report Title:** *A Selective Reconnaissance-Level Historic Structures Inventory for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah*

**UDOT Project Number and PIN:** S-R-199(381); PIN 20927

**Utah State Report Number:** U24HY0375

**Agencies:** Utah Department of Transportation (UDOT), U.S. Army Corps of Engineers (USACE)

**Project Description:** UDOT proposes to construct the next phase of the West Davis Corridor (SR-177) between SR-193 and 1800 North in West Point and Clinton, Davis County. The project would entail construction of a new roadway, utilities, drainage facilities, and a multi-use trail, etc. and will require acquisition of right-of-way beyond what UDOT currently owns in the area. The study is currently funded with state monies, but a permit may be required from the USACE to address impacts to wetlands or waters of the U.S. This federal agency involvement invokes the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR §800. The involvement of state funding and approvals by UDOT invokes UCA 9-8a-404, the state equivalent of 36 CFR §800. Certus Environmental Solutions (Certus), as a member of the consultant team, was contracted to carry out studies related to cultural resources that could be affected by the new construction or right-of-way acquisition. The results of a historical structures assessment are presented herein. UDOT and the USACE may use this information as part of their regulatory compliance. A report of archaeological resources located in the survey area is provided under separate cover.

**Survey Area:** The cultural resource assessment area comprises a series of irregular polygons and linear corridors surrounding the anticipated areas of ground disturbance, easements, and right-of-way acquisition. This area was defined in conjunction with UDOT and corresponds with the aquatic and biological resources assessment areas. The survey contains 195 acres.

**Location:** West Point; T. 4N, R. 2W, Sec. 5 & 6; T. 5N, R. 2W, Sec. 19, 29–32

**Land Ownership:** Private, Municipal, UDOT (right-of-way)

**Date(s) of Fieldwork:** June 4–6, August 2–3, October 11, and November 22, 2024

**Methods:** Selective reconnaissance-level structures inventory

**Acres Surveyed for Historic Buildings:** 195 acres

**Properties with Historic Structures Recorded:** 5 (4182 W 1300 N, 4233 W 300 N, ~4300 W 300 N, ~4310 W 300 N, and 4133 W 1800 N)

**NRHP Eligible Structures:** 0

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# Introduction

UDOT proposes to construct the next phase of the West Davis Corridor (SR-177) between SR-193 and 1800 North in West Point and Clinton, Davis Count (see **Figure 1**, for the general project location). The project would entail construction of a new roadway, utilities, drainage facilities, and a multi-use trail, etc. and will require acquisition of right-of-way beyond what UDOT currently owns in the area. The study is currently funded with state monies, but a permit may be required from the USACE to address impacts to wetlands or waters of the U.S. This federal agency involvement invokes the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR §800. The involvement of state funding and approvals by UDOT invokes UCA 9-8a-404, the state equivalent of 36 CFR §800.

Certus Environmental Solutions (Certus), as a member of the consultant team, was contracted to carry out studies related to cultural resources that could be affected by the new construction or right-of-way acquisition. The results of a historical structures inventory in support of compliance with 36 CFR § 800 and UCA 9-8a-404 are presented herein. UDOT and the USACE may use this information as part of their regulatory compliance. A report of archaeological resources located in the survey area is provided under separate cover.

The cultural resource assessment area comprises a series of irregular polygons and linear corridors surrounding the anticipated areas of ground disturbance, easements, and right-of-way acquisition (see **Figures 2 & 3**). This area was defined in conjunction with UDOT and corresponds with the aquatic and biological resources assessment areas. The survey contains 195 acres and includes all lands on which ground disturbance, temporary construction easements, and permanent right-of-way acquisition, as they were understood at the time of fieldwork, would occur.

The general project area is located in the suburban communities of West Point and Clinton, which are found between the Great Salt Lake and the Wasatch Mountains along the north-central part of the Wasatch Front. Most land in the survey area is unoccupied in terms of building but not undeveloped or undisturbed. The majority of the area was used historically for agricultural purposes—primarily livestock grazing—with large areas used more recently for disposal of construction debris and excavated soils. The built environment of the area follows the street grid with single-family dwellings generally set on larger (1-acre) lots. Much of the development in and immediately adjacent to the current survey area occurred after 1975, and it continues in earnest today. Occasional scattered historical farmsteads and dwellings are also found in the area.

# Previously Documented Properties

The Utah State Historic Preservation Office (SHPO) HUB database, which contains previously reported buildings and structures in Utah, indicates a single historical building has been reported in the area. This building is an agricultural outbuilding at 4133 West 1800 North. This building was documented in 2017 and was determined ineligible for the National Register. This property is discussed further in the **Findings** section of this report.

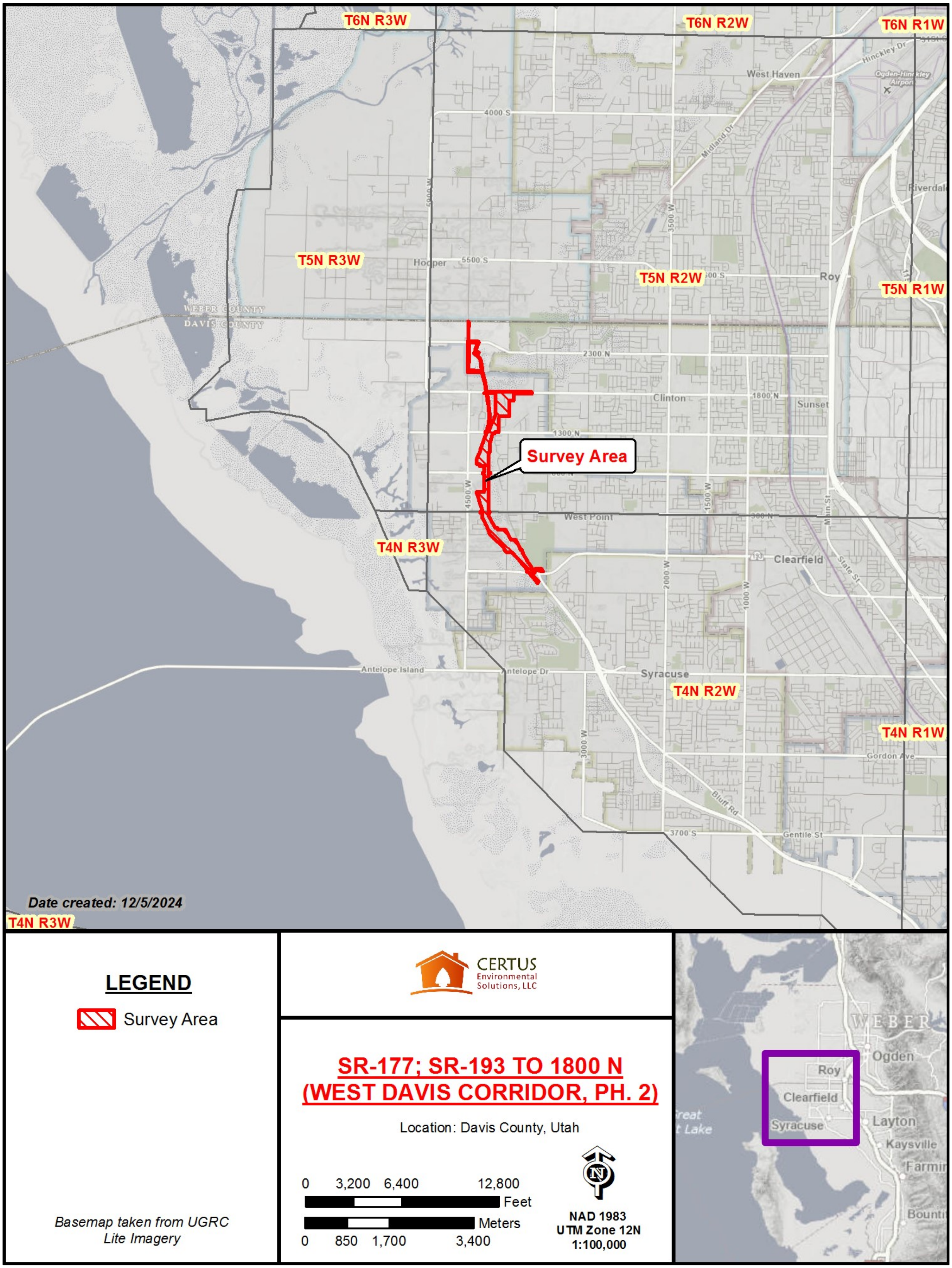


**Figure 1.** General location of survey area

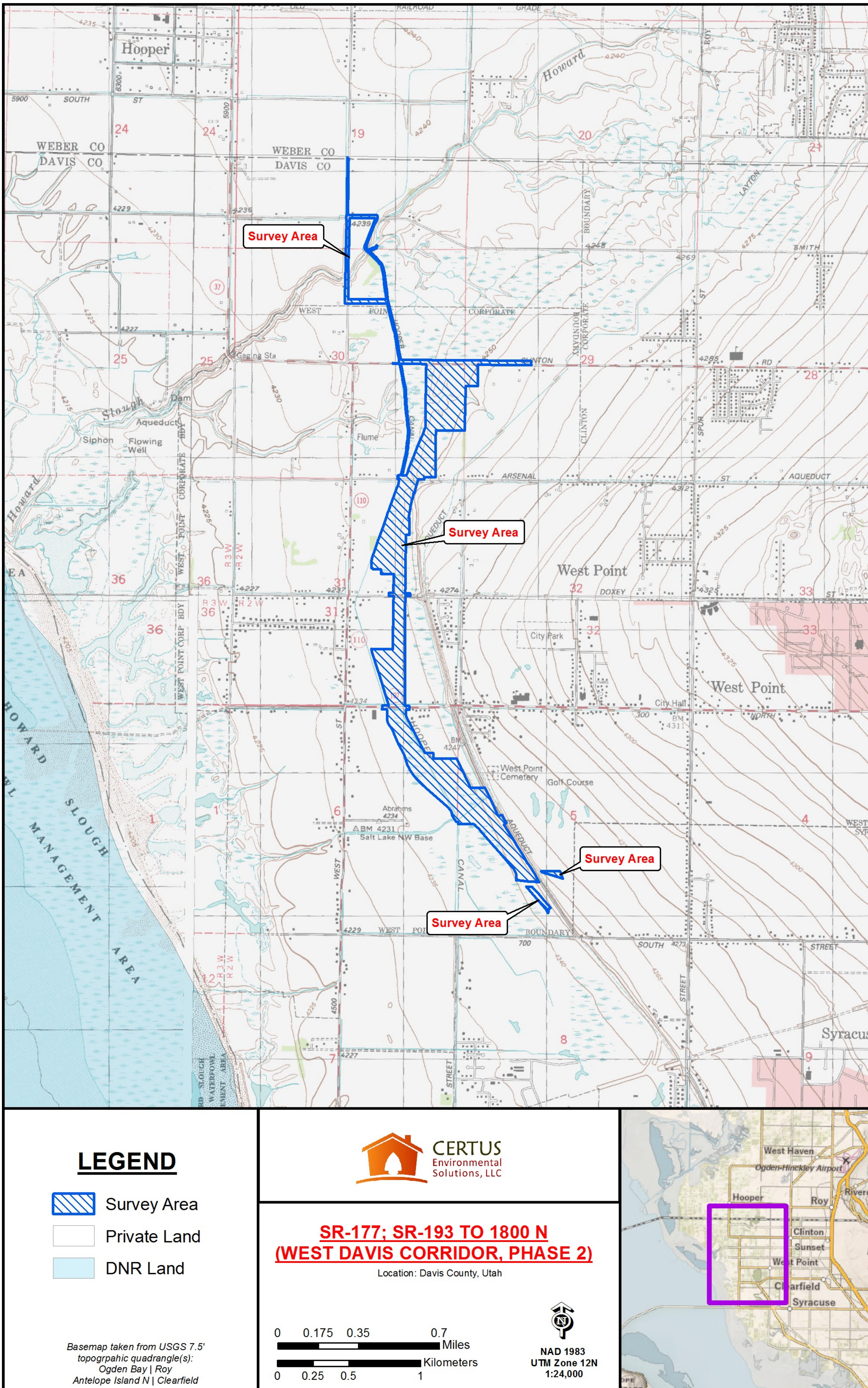


**Figure 2.** Survey Area; topographic map

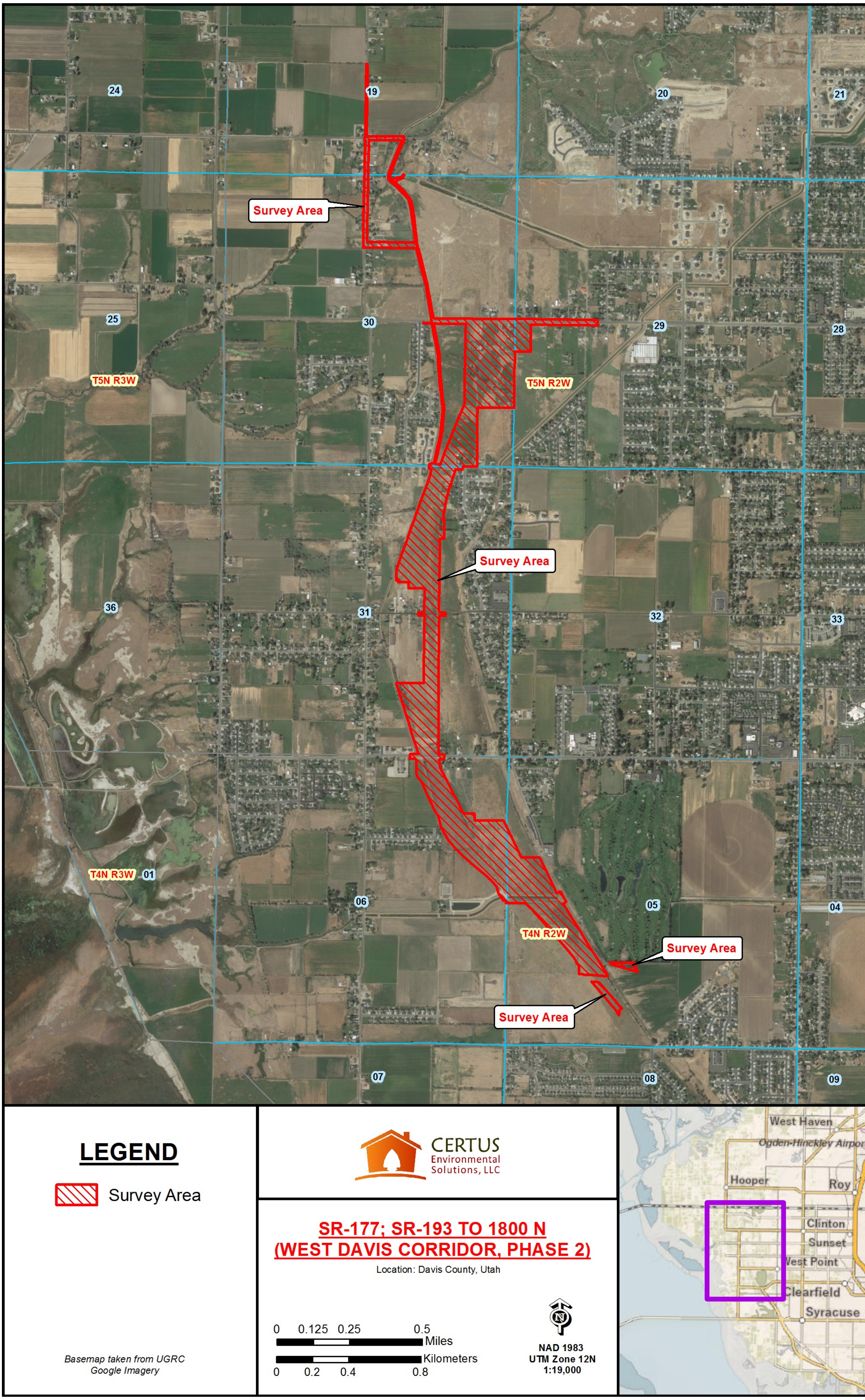


**Figure 3.** Survey Area; aerial map

## FINDINGS

Certus identified five historical buildings in the survey area for the West Davis Corridor Phase 2 Project. These structures include three isolated agricultural outbuildings and two historical dwellings. The dwellings are post post-World War II residential properties located outside of a subdivision. The locations of the documented structures are shown in **Figure 4**, and descriptions and National Register evaluations are provided below.

### *Post-War Individual Dwellings*

Certus identified two historical dwellings in the survey area. See **Table 1** for information about them. The dwellings were built in 1974 and 1977 and are located outside of any subdivisions. As such, they are subject to UDOT's protocols for individual (non-subdivision) post-World War II era properties.

### *Agricultural Outbuildings*

Three historical bridges are located in the survey area. See **Table 2** for information about them. All three are isolated from any associated dwellings, and all appear to have been constructed between 1960 and 1971.

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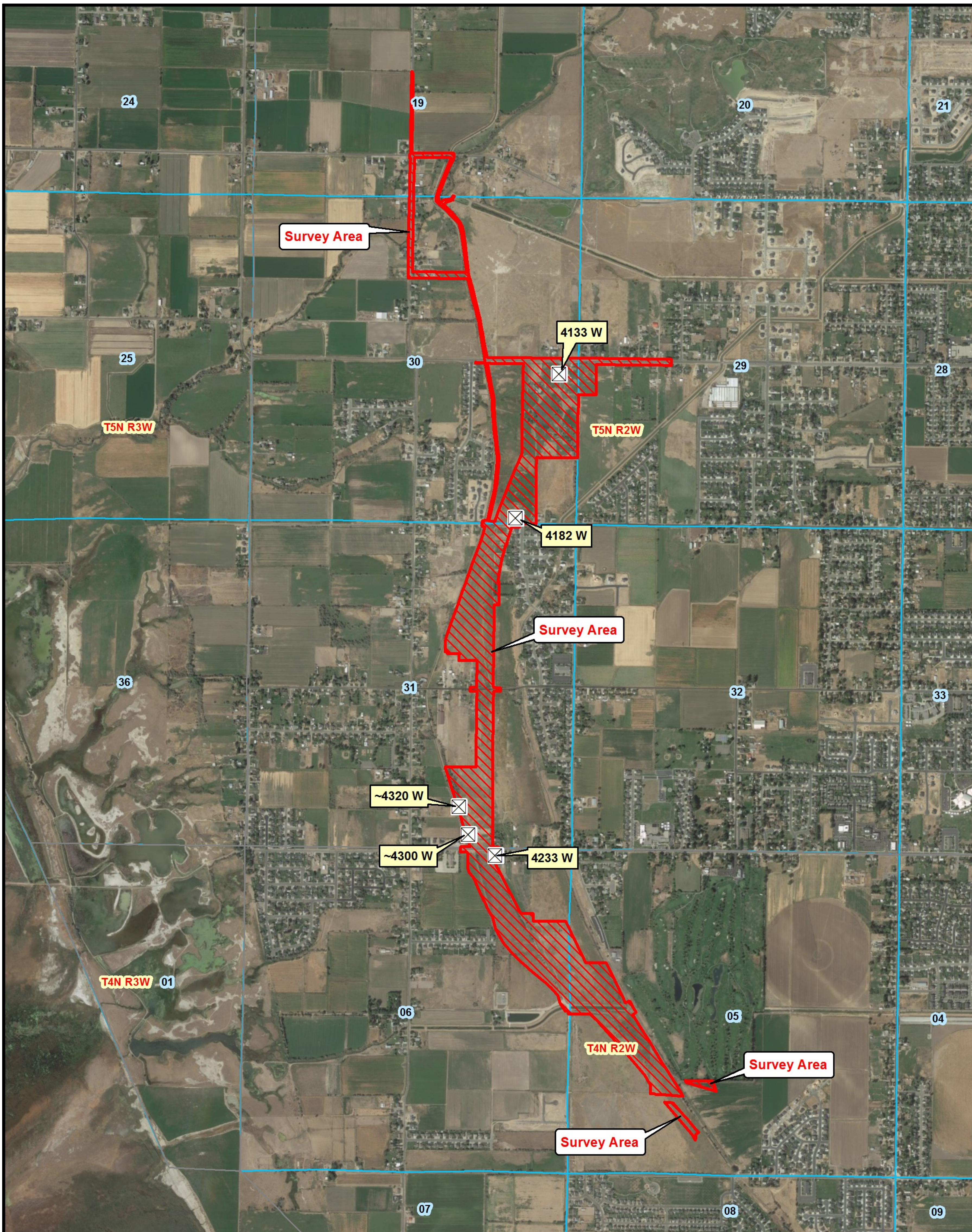


**LEGEND**

Ineligible Building

Survey Area

*Basemap taken from UGRC*
*Google Imagery*

CERTUS
Environmental
Solutions, LLC

**SR-177; SR-193 TO 1800 N**
**(WEST DAVIS CORRIDOR, PHASE 2)**

Location: Davis County, Utah

0 0.125 0.25 0.5 Miles

0 0.2 0.4 0.8 Kilometers

**NAD 1983**
**UTM Zone 12N**
**1:19,000**

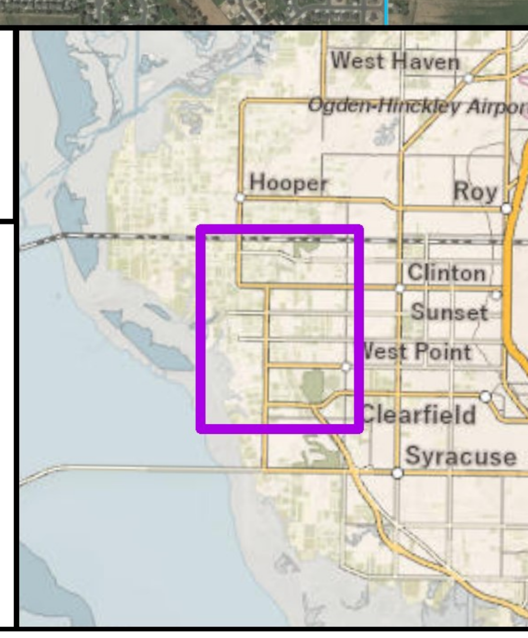


**Figure 4.** Survey results

**Table 1. Historical dwellings**

| Address | Year Built | Description | Eligibility Evaluation* | Photo |
|---|---|---|---|---|
| 4233 W. 300 N. | c. 1977 | 1.5-story Split Entry (with garage) single-family dwelling exhibiting Split Entry and Ranch/Rambler style. Clad in regular brick and narrow vinyl siding. Notable exterior alterations include modern windows throughout in original openings and extensive use of the modern vinyl cladding. One non-contributing outbuilding was visible. | Not eligible |  |
| 4182 W. 1300 N. | c. 1974 | 1.5-story Split Entry single-family dwelling exhibiting Split Entry and Ranch/Rambler style. Clad in regular brick and stone veneer. Notable exterior alterations appear to be limited to modern windows throughout in original openings. One contriubting and one non-contributing outbuilding were visible. | Not eligible |  |

* See individual property forms for detailed evaluations

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**Table 2. Agricultural outbuildings**

| Address | Year Built | Description | Eligibility Evaluation | Photo |
|---|---|---|---|---|
| ~4300 W 300 N | c. 1968 | Two agricultural outbuildings, including a small barn/animal shelter and a hay hold. The barn/shelter is constructed of concrete block, wood framing, and corrugated metal. The hay hold is constructed of timber framing and corrugated metal cladding and roofing. Alterations appear limited to patching and repairs of construction materials in the modern era. No obvious historical dwellings are located near these buildings. | Not eligible |   |
| ~4320 W 300 N | c. 1960 | One agricultural outbuilding—a loafing shed/animal shelter. The building is constructed of wood framing and raw lumber vertical planks. Alterations appear limited to structural deterioration, especially loss of roofing materials. No obvious historical dwellings are located near this outbuilding. | Not eligible |  |

**Table 2. Agricultural outbuildings**

| Address | Year Built | Description | Eligibility Evaluation | Photo |
|---|---|---|---|---|
| 4133 W 1800 N | c. 1971 | Agricultural outbuilding complex including a short, corrugated metal silo, a small barn, a small shed, and ruins of another unidentifiable structure. The buildings are constructed of wood framing with raw lumber vertical plank and corrugated metal siding and roofing. All of the structures except for the silo exhibit extensive deterioration, loss of cladding and roofing, and partial collapse. No historical dwellings are located near these buildings. The only dwellings in the area date well into the modern era. | Not eligible |    |

# HISTORIC SITE SHORT FORM

(11/17)

UTAH OFFICE OF HISTORIC PRESERVATION
For Section 106 Review Only
(Do not use this form to record archeological sites)

## 1 IDENTIFICATION

*Historic Property Name* (if known): *106 Project Title:* U24HY0375; UDOT PIN 20927
*Address:* ~4300 W. 300 N. *Lat/Long (Optional):*
*City, County:* West Point, UT Geographical Data (Optional):

## 2 EVALUATION

*Evaluation* (select one)

☐ *The property is considered* **Eligible** *at this time because it is already listed in the National Register* **or**
- is at least 50 years old **and** retains its historic integrity (minimal alterations to key features), and has potential significance.

☑ *The property is considered* **Not Eligible** *at this time because it:*
- is less than 50 years old, **or** is 50 years or older but there have been major alterations to key features.

## 3 DOCUMENTATION

*Required*
☑ *Upload two photos*
☐ *site sketch map (optional)*
☐ *other:*

*Research Sources (optional, check all sources consulted, whether useful or not)*
☑ *abstract of title*
☐ *tax card & photo*
☐ *building permit*
☐ *Sanborn Maps*
☑ *other:*

## 4 ARCHITECTURAL DESCRIPTION AND HISTORY

*Date of Construction:* 1968
*No. of Stories:* 1
*Building Type:* Agricultural- Barn
*Building Style:* Other
*Foundation Material:* None
*Wall Material(s):* Concrete

*Use*
*Original Use:* Agricultural
*Current Use:* Agricultural

*Additions:* ☑ *none* ☐ *minor* ☐ *major (describe below)*
*Alterations:* ☐ *none* ☑ *minor* ☐ *major (describe below)*
*No. of contributing outbuildings and/or structures:* 0
*No. of non-contributing outbuildings and/or structures:* 1

*Briefly describe the original building, any major additions or alterations and their dates, and associated outbuildings and structures. Also provide a brief history of the building's construction and use (if known). Use continuation sheets as necessary for additional photos and text.*

Two agricultural outbuildings, including a small barn/animal shelter and a hay hold. The barn/shelter is constructed of concrete block, wood framing, and corrugated metal. The hay hold is constructed of timber framing and corrugated metal cladding and roofing. Alterations appear limited to patching and repairs of construction materials in the modern era. No obvious historical dwellings are located near these buildings.

## 5 PROPOSED ACTION

*Describe the impending action (e.g., road widening, rehabilitation, alteration, demolition). Use continuation sheets as necessary for additional photos and text, submit as a pdf/a.*

UDOT proposes construction of a new roadway in the area of these buildings. The impacts are not currently known but could be as extensive as demolition.

*Form completed by:* Sheri Murray Ellis *Date (mo/yr):* 06/2024

**6 PHOTO UPLOAD**

*Upload your images. Please upload at least one current and clear image.*

*If you have additional documents, such as a site sketch map or project area map (a map for each individual property is not required if project features multiple properties; just submit one map highlighting all properties in project area), please submit those as a separate pdf/a or attach as part of the agency letter.*

# HISTORIC SITE SHORT FORM

(11/17)

UTAH OFFICE OF HISTORIC PRESERVATION
For Section 106 Review Only
(Do not use this form to record archeological sites)

## 1 IDENTIFICATION

*Historic Property Name* (if known): *106 Project Title:* U24HY0375; UDOT PIN 20927
*Address:* ~4320 W. 300 N. *Lat/Long (Optional):*
*City, County:* West Point, UT Geographical Data (Optional):

## 2 EVALUATION

*Evaluation* (select one)

☐ *The property is considered* **Eligible** *at this time because it is already listed in the National Register* **or**
- is at least 50 years old **and** retains its historic integrity (minimal alterations to key features), and has potential significance.

☑ *The property is considered* **Not Eligible** *at this time because it:*
- is less than 50 years old, **or** is 50 years or older but there have been major alterations to key features.

## 3 DOCUMENTATION

*Required*
☑ *Upload two photos*
☐ *site sketch map (optional)*
☐ *other:*

*Research Sources (optional, check all sources consulted, whether useful or not)*
☑ *abstract of title*
☐ *tax card & photo*
☐ *building permit*
☐ *Sanborn Maps*
☑ *other:*

## 4 ARCHITECTURAL DESCRIPTION AND HISTORY

*Date of Construction:* 1960
*Building Type:* Agricultural- Misc.
*Foundation Material:* None
*No. of Stories:* 1
*Building Style:* Other
*Wall Material(s):* Wood
*Use*
*Original Use:* Agricultural
*Current Use:* Agricultural
*Additions:* ☑ *none* ☐ *minor* ☐ *major (describe below)* *Alterations:* ☐ *none* ☑ *minor* ☐ *major (describe below)*
*No. of contributing outbuildings and/or structures:* 0 *No. of non-contributing outbuildings and/or structures:* 0

*Briefly describe the original building, any major additions or alterations and their dates, and associated outbuildings and structures. Also provide a brief history of the building's construction and use (if known). Use continuation sheets as necessary for additional photos and text.*

One agricultural outbuilding—a loafing shed/animal shelter. The building is constructed of wood framing and raw lumber vertical planks. Alterations appear limited to structural deterioration, especially loss of roofing materials. No obvious historical dwellings are located near this outbuilding.

## 5 PROPOSED ACTION

*Describe the impending action (e.g., road widening, rehabilitation, alteration, demolition). Use continuation sheets as necessary for additional photos and text, submit as a pdf/a.*

UDOT proposes construction of a new roadway in the area of this building. The impacts are not currently known but could include demolition.

*Form completed by:* Sheri Murray Ellis *Date (mo/yr):* 06/2024

**6 PHOTO UPLOAD**

*Upload your images. Please upload at least one current and clear image.*

*If you have additional documents, such as a site sketch map or project area map (a map for each individual property is not required if project features multiple properties; just submit one map highlighting all properties in project area), please submit those as a separate pdf/a or attach as part of the agency letter.*

# HISTORIC SITE SHORT FORM

(11/17)

UTAH OFFICE OF HISTORIC PRESERVATION
For Section 106 Review Only
(Do not use this form to record archeological sites)

## 1 IDENTIFICATION

*Historic Property Name* (if known): *106 Project Title:* U24HY0375; UDOT PIN 20927
*Address:* 4133 W. 1800 N. *Lat/Long (Optional):*
*City, County:* West Point, UT Geographical Data (Optional):

## 2 EVALUATION

*Evaluation* (select one)

☐ *The property is considered* **Eligible** *at this time because it is already listed in the National Register* **or**

- is at least 50 years old **and** retains its historic integrity (minimal alterations to key features), and has potential significance.

☑ *The property is considered* **Not Eligible** *at this time because it:*

- is less than 50 years old, **or** is 50 years or older but there have been major alterations to key features.

## 3 DOCUMENTATION

*Required*
☑ *Upload two photos*
☐ *site sketch map (optional)*
☐ *other:*

*Research Sources (optional, check all sources consulted, whether useful or not)*
☑ *abstract of title*
☐ *tax card & photo*
☑ *building permit*
☐ *Sanborn Maps*
☑ *other:*

## 4 ARCHITECTURAL DESCRIPTION AND HISTORY

*Date of Construction:* 1971
*No. of Stories:* 1
*Building Type:* Agricultural- Barn
*Building Style:* Other
*Foundation Material:* None
*Wall Material(s):* Wood

*Use*
*Original Use:* Agricultural
*Current Use:* Agricultural

*Additions:* ☑ *none* ☐ *minor* ☐ *major (describe below)* *Alterations:* ☐ *none* ☑ *minor* ☐ *major (describe below)*
*No. of contributing outbuildings and/or structures:* 0 *No. of non-contributing outbuildings and/or structures:* 3

*Briefly describe the original building, any major additions or alterations and their dates, and associated outbuildings and structures. Also provide a brief history of the building's construction and use (if known). Use continuation sheets as necessary for additional photos and text.*

Agricultural outbuilding complex including a short, corrugated metal silo, a small barn, a small shed, and ruins of another unidentifiable structure. The buildings are constructed of wood framing with raw lumber vertical plank and corrugated metal siding and roofing. All of the structures except for the silo exhibit extensive deterioration, loss of cladding and roofing, and partial collapse. No historical dwellings are located near these buildings. The only dwellings in the area date well into the modern era.

## 5 PROPOSED ACTION

*Describe the impending action (e.g., road widening, rehabilitation, alteration, demolition). Use continuation sheets as necessary for additional photos and text, submit as a pdf/a.*

UDOT proposes construction of a new roadway in the area of these buildings. The impacts are not currently known but could include demolition.

*Form completed by:* Sheri Murray Ellis *Date (mo/yr):* 06/2024

**6 PHOTO UPLOAD**

*Upload your images. Please upload at least one current and clear image.*

*If you have additional documents, such as a site sketch map or project area map (a map for each individual property is not required if project features multiple properties; just submit one map highlighting all properties in project area), please submit those as a separate pdf/a or attach as part of the agency letter.*

# Postwar Evaluation
# Individual Property Form

(Refer to the *Historic Residential Development of Utah's Wasatch Front, 1940-1980* when filling out this template)

## 1. Property Identification

| | |
|---|---|
| a. County | Davis |
| b. City | West Point |
| c. Street Address | 4182 West 1300 North |

## 2. Property Architectural History

| | |
|---|---|
| a. Date(s) of Construction / Development: | c. 1974 |
| b. Architect: | Unknown |
| c. Builder(s) / Contractor(s): | Unknown |
| d. Landscape Architect(s): | None |
| e. Plan / Style: | Split Entry with garage / Split Entry & Ranch/Rambler style |

### f. Architectural description

This building is a 1.5-story Split Entry (with garage) single-family dwelling exhibiting Split Entry and Ranch/Rambler style. It is clad in regular brick and stone veneer. Notable exterior alterations include modern windows throughout in original openings. Twoe non-contributing outbuildings were visible.

## 3. Property Historic Context:

The following architectural context utilizes the Split-level subtype Split-entry plan description from the *Illustrated Typology of Utah Post-World War II Residential Plans and Styles, and Associated Subtypes of Residential Subdivisions* (June 2023), prepared by Mead & Hunt, Inc. (Mead & Hunt).

> Beginning in the mid-1950s, the Split-level plan was one of the most common plans nationwide. The Split-level has two or more living levels that are each separated by a partial flight of stairs. The multi-floor plan had a more compact footprint than the Ranch plan and could fit on smaller lots, allowing developers to fit more lots into a subdivision development. The Split-level plan had other benefits that compared to or superseded Ranch predecessors. The plan expanded and refined the Ranch's segregation of public and private interior space into separate "zones" or wings. It produced a house with more square footage, allowing for additional bedrooms and bathrooms.

Like the Raised Ranch, the Split-level could be used on uneven and sloping building sites, which are common along the Wasatch Front, and often included an integrated garage. The Split-level plan eventually fell out of favor as the larger Split-entry and Two-story Massed plans eclipsed its popularity.

The Split-entry plan is a variation of the Split-level that has a mid-level entry/foyer with a split stair, with one staircase going to an upper level and one to a lower level. The Split-entry has three separate levels on the interior: the entry level that includes the foyer and two levels with living space. Split-foyer or Bilevel are other terms used for this plan.

**a. Demographics of Original Owner:** White, Married

This dwelling was built in 1974. At that time, the property appears to have been owned by Orson J. and Hazel H. Davis. The Davises sold the property to Dee W. Hendry in 1987, and around 2006, the property entered the Gail R. Yardley Family's ownership. The property is currently owned by the Yardley Family Trust.

Orson James Davis was born in June 1895 in West Point and grew up on the family farm. He married Alta "Fern" Stoddard around 1920 and had two daughters. Fern passed away in February 1928. Orson married Dora Miller Patterson in November 1929, and they had five children together. Dora died in November 1945. He married Hazel Thurgood Hamblin in 1953, and they remained married until their deaths in 1990 and 1988, respectively. Orson Davis appears to have worked as a farmer his entire adult life. Hazel, his wife during ownership of the dwelling discussed herein, does not appear to have worked outside the home but assisted on the family farm.

**b. Development Context**

West Point was settled in the 1860s as an offshoot of nearby Syracuse. James Hale was the first recorded permanent settler in the community, which was known as South Hooper at the time. The settlement was later renamed Muskrat Springs and then became officially known as West Point in 1910. The community was incorporated in 1935. Throughout most of its history, West Point was a suburban agricultural community. It had a typical Utah street grid with major north-south and east-west roadways spaced one mile apart. Most residences were built along the major corridors, and they tended to be somewhat widely spaced as each usually represented a farmstead with associated cultivated lands. Corn, alfalfa, and later sugar beets, were primary crops. Growth in the community was slow. By 190, the first years independent census data is available, the community only had 396 residents. This increased to 572 in 1930 and 586 in 1940 before contracting to 433 in 1950. Growth rebounded during the 1950s, in large measure due to job opportunities created by the establishment of military facilities (Hill Air Base, the Clearfield Supply Depot, etc.). by 1960, the population had grown to 814 residents, and by 1980, just beyond UDOT's 45-year survey period, the population had reached 1241 residents.

As the population grew, farmlands began to be abandoned and sold off for new residential development. Very little commercial development occurred in the area prior to the 1990s and early-2000s, and the community remained dependent on surrounding cities for most commercial services. The majority of development that occurred between 1945 and 1978 (the end of the 45-year period) consisted of residential in-fill along the existing major roadways. Very little subdivision development occurred until well into the modern era.

**c. Typical Modifications or Alterations to Building and Landscape:**

The visible alterations to the exterior of the dwelling include modern windows in unaltered original openings throughout the building. Replacement of original windows and siding are, perhaps, the most common alterations made to Split-level/Split-entry dwellings built during the 1960s and 1970s. The landscape of the property appears consistent with the time of construction for the dwelling.

## 4. Property Current Historic Designation

| | |
|---|---|
| a. National Register of Historic Places: | **N/A** |
| b. Local Landmark Designation: | **N/A** |

## 5. Property Eligibility for the National Register of Historic Places

(Refer to Chapter 4 of the *Historic Residential Development of Utah's Wasatch Front, 1940-1980* when filling out this part of the template)

***Criterion A***

This property is nominally associated with West Point's post-World War II development period and does not represent a historically significant property within that context. Rather, it was merely one of many properties constructed during this time as individuals or families purchased available land in the area. It is not part of any subdivision or organized development. Thus, this this property does not possess significance under Criterion A.

***Criterion B***

The property appears to be associated with Orson and Hazel Davis. No information could be found about the architect or construction contractor. Very little information was found about the Davises, but that which was located indicates they do not rise to the level of historical significance required by the National Register. As such, this property does not possess significance under Criterion B.

***Criterion C***

This Split-entry residence exhibits many of the basic character-defining features of this house style and of the "classic" architectural design of such buildings. These features include a single cross-gable roofline and an apparent interior foyer with split staircase. However, the building does not represent an important example of the Split-level (split-entry subtype) building type and is merely a common vernacular example built as a "one-off" dwelling outside of any subdivision of organized development. Thus, the property does not possess significance under Criterion C.

***Criterion D***

The resource is not likely to contain information important to history or prehistory beyond what is already documented and does not possess significance under Criterion D.

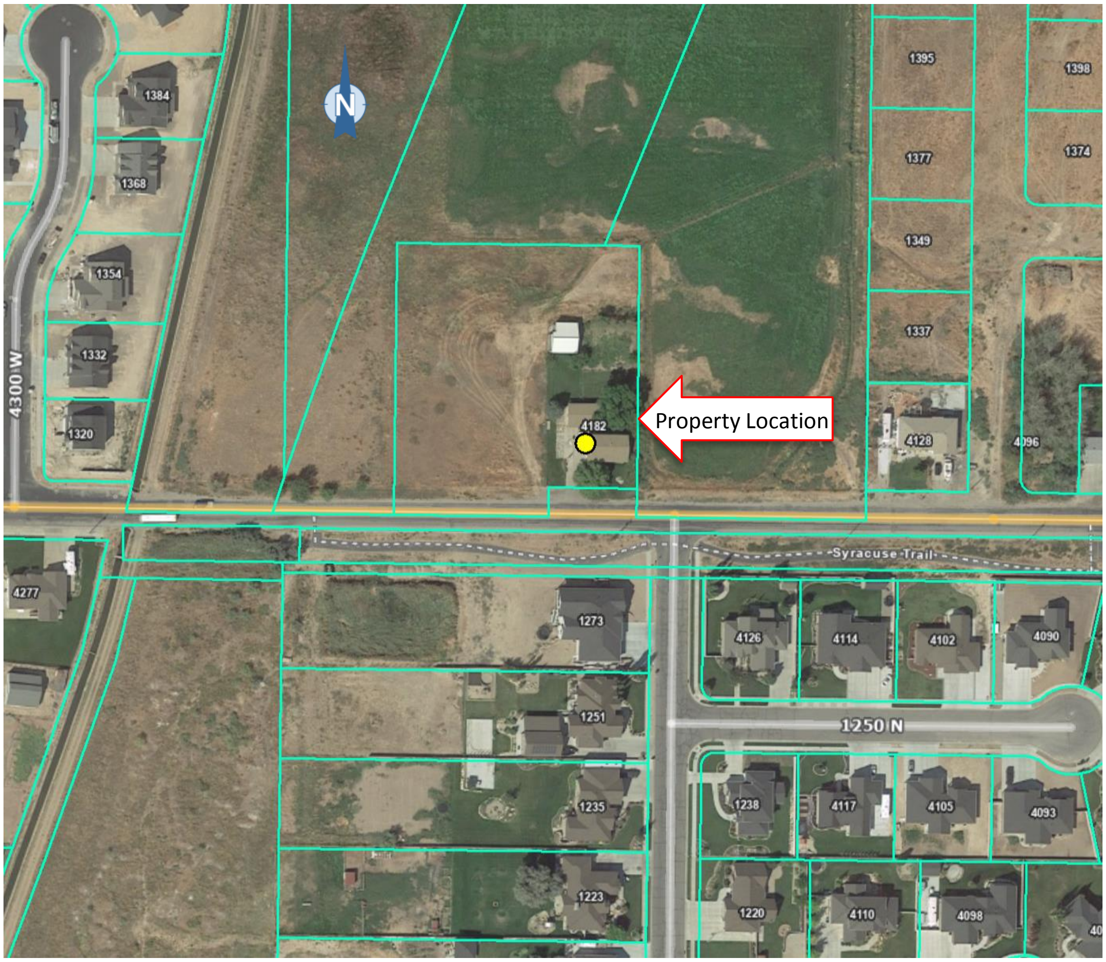
***Integrity***

The subject property is in its original location and continues to present its original design as a Split-level single-family residence of the 1970s. Nonetheless, the property's replaced windows reduce the property's level of integrity to "good".

The subject property is recommended **ineligible** for the National Register.

## 6. Property Maps and Photographs

### a. Property Maps and Historic Boundary



**b. Plot Photograph (include plot's buildings, structures, objects)**


**Overview of dwelling; looking northwest**

**Overview of dwelling; looking northeast**

**Visible outbuildings; looking north**

## 7. Sources

Mead & Hunt. 2023. *Illustrated Typology of Utah Post-World War II Residential Plans and Styles, and Associated Subtypes of Residential Subdivisions.* Utah Department of Transportation, Salt Lake City.

# Postwar Evaluation
# Individual Property Form

(Refer to the *Historic Residential Development of Utah's Wasatch Front, 1940-1980* when filling out this template)

**1. Property Identification**

| | |
|---|---|
| a. County | Davis |
| b. City | West Point |
| c. Street Address | 4233 West 300 North |

**2. Property Architectural History**

| | |
|---|---|
| a. Date(s) of Construction / Development: | c. 1977 |
| b. Architect: | Unknown |
| c. Builder(s) / Contractor(s): | Unknown |
| d. Landscape Architect(s): | None |
| e. Plan / Style: | Split Entry with garage / Split Entry & Ranch/Rambler style |

**f. Architectural description**

This building is a 1.5-story Split Entry (with garage) single-family dwelling exhibiting Split Entry and Ranch/Rambler style. It is clad in regular brick and narrow vinyl siding. Notable exterior alterations include modern windows throughout in original openings and extensive use of the modern vinyl cladding. One non-contributing outbuilding was visible.

**3. Property Historic Context:**

The following architectural context utilizes the Split Level plan description from the *Illustrated Typology of Utah Post-World War II Residential Plans and Styles, and Associated Subtypes of Residential Subdivisions* (June 2023), prepared by Mead & Hunt, Inc. (Mead & Hunt).

> Beginning in the mid-1950s, the Split-level plan was one of the most common plans nationwide. The Split-level has two or more living levels that are each separated by a partial flight of stairs. The multi-floor plan had a more compact footprint than the Ranch plan and could fit on smaller lots, allowing developers to fit more lots into a subdivision development. The Split-level plan had other benefits that compared to or superseded Ranch predecessors. The plan expanded and refined the Ranch's segregation of public and private interior space into separate "zones" or wings. It

produced a house with more square footage, allowing for additional bedrooms and bathrooms. Like the Raised Ranch, the Split-level could be used on uneven and sloping building sites, which are common along the Wasatch Front, and often included an integrated garage. The Split-level plan eventually fell out of favor as the larger Split-entry and Two-story Massed plans eclipsed its popularity.

The Split-entry plan is a variation of the Split-level that has a mid-level entry/foyer with a split stair, with one staircase going to an upper level and one to a lower level. The Split-entry has three separate levels on the interior: the entry level that includes the foyer and two levels with living space. Split-foyer or Bilevel are other terms used for this plan.

**a. Demographics of Original Owner:** White, Married

This dwelling was built in 1977 (outside the typical 50-year historic period and only one year before the end of UDOT's 45-year survey period). At that time, the property appears to have been occupied by Kent and LaRae Lewis. The Lewises are still alive, thus little biographical information about them is publicly available at the present time. The Lewises sold the property to their son, Darren, around 1998, and Darren sold it to the current owners, Kerry D. and Kirstine S. Lee in 2002.

**b. Development Context**

West Point was settled in the 1860s as an offshoot of nearby Syracuse. James Hale was the first recorded permanent settler in the community, which was known as South Hooper at the time. The settlement was later renamed Muskrat Springs and then became officially known as West Point in 1910. The community was incorporated in 1935. Throughout most of its history, West Point was a suburban agricultural community. It had a typical Utah street grid with major north-south and east-west roadways spaced one mile apart. Most residences were built along the major corridors, and they tended to be somewhat widely spaced as each usually represented a farmstead with associated cultivated lands. Corn, alfalfa, and later sugar beets, were primary crops. Growth in the community was slow. By 190, the first years independent census data is available, the community only had 396 residents. This increased to 572 in 1930 and 586 in 1940 before contracting to 433 in 1950. Growth rebounded during the 1950s, in large measure due to job opportunities created by the establishment of military facilities (Hill Air Base, the Clearfield Supply Depot, etc.). by 1960, the population had grown to 814 residents, and by 1980, just beyond UDOT's 45-year survey period, the population had reached 1241 residents.

As the population grew, farmlands began to be abandoned and sold off for new residential development. Very little commercial development occurred in the area prior to the 1990s and early-2000s, and the community remained dependent on surrounding cities for most commercial services. The majority of development that occurred between 1945 and 1978 (the end of the 45-year period) consisted of residential in-fill along the existing major roadways. Very little subdivision development occurred until well into the modern era.

**c. Typical Modifications or Alterations to Building and Landscape:**

The visible alterations to the exterior of the dwelling include modern windows in unaltered original openings throughout the building and extensive use of modern vinyl siding along with the original brick cladding. Replacement of original windows and siding are, perhaps, the most common alterations made to Split-level dwellings built during the 1960s and 1970s. The landscape of the property appears consistent with the time of construction for the dwelling.

**4. Property Current Historic Designation**

| | |
|---|---|
| a. National Register of Historic Places: | **N/A** |
| b. Local Landmark Designation: | **N/A** |

## 5. Property Eligibility for the National Register of Historic Places

(Refer to Chapter 4 of the *Historic Residential Development of Utah's Wasatch Front, 1940-1980* when filling out this part of the template)

### *Criterion A*

This property is nominally associated with West Point's post-World War II development period and does not represent a historically significant property within that context. Rather, it was merely one of many properties constructed during this time as individuals or families purchased available land in the area. It is not part of any subdivision or organized development. Thus, this this property does not possess significance under Criterion A.

### *Criterion B*

The property appears to be associated with Kent and LaRae Lewis. No information could be found about the architect or construction contractor. No information was found to indicate the Lewises rise to the level of historical significance required by the National Register. As such, this property does not possess significance under Criterion B.

### *Criterion C*

This Split-level residence exhibits many of the basic character-defining features of this house style and of the "classic" architectural design of such buildings. These features include a single cross-gable roofline and an apparent interior foyer with split staircase. However, the building does not represent an important example of the Split-level building type and is merely a common vernacular example built as a "one-off" dwelling outside of any subdivision of organized development. Thus, the property does not possess significance under Criterion C.

### *Criterion D*

The resource is not likely to contain information important to history or prehistory beyond what is already documented and does not possess significance under Criterion D.

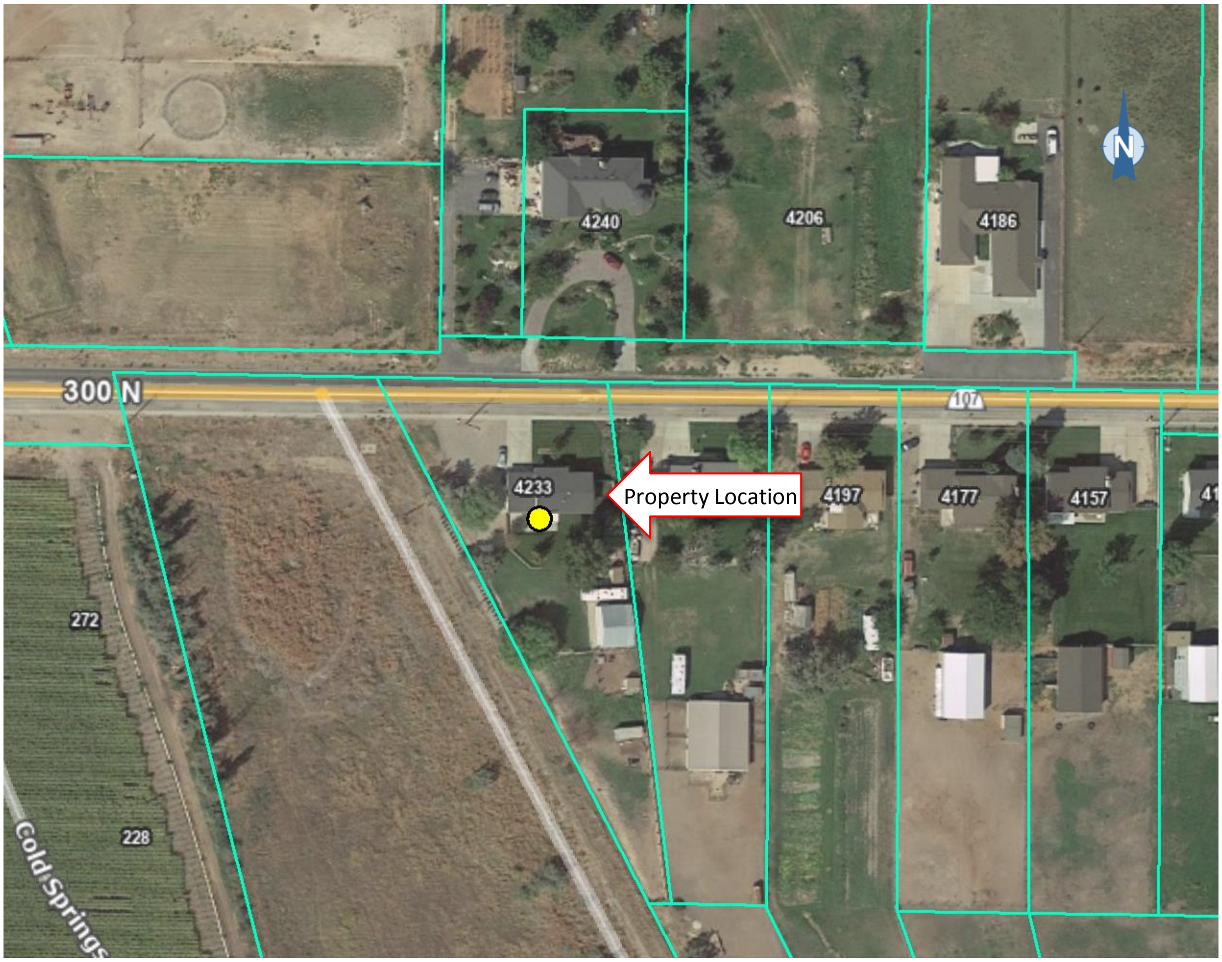
### *Integrity*

The subject property is in its original location and continues to present its original design as a Split-level single-family residence of the 1970s. Nonetheless, the property's replaced windows and vinyl siding reduce the property's level of integrity to "fair". Unaltered Split-level properties are present elsewhere in West Point, including on adjacent properties, and are better examples of vernacular Split-level forms.

The subject property is recommended **ineligible** for the National Register.

## 6. Property Maps and Photographs

### a. Property Maps and Historic Boundary



**b. Plot Photograph (include plot's buildings, structures, objects)**

**Overview of dwelling; looking southeast**

**Overview of dwelling; looking southwest**

## 7. Sources

Mead & Hunt. 2023. *Illustrated Typology of Utah Post-World War II Residential Plans and Styles, and Associated Subtypes of Residential Subdivisions.* Utah Department of Transportation, Salt Lake City.

## *Archaeologic Resources*

**COVER PAGE**

**Must Accompany All Project Reports Submitted to the Utah SHPO**

**Report Title:** *An Archaeological Resource Assessment for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah*

**UDSH Project Number:** U24HY0375
**Report Date:** December 5, 2024
**Report Author(s):** Sheri Murray Ellis
**Record Search Date(s):** June 1, 2024
**Intensive Acres Surveyed (<15m intervals):** 195 ac.
**Org. Project Number:** BCA77
**County(ies):** Davis
**Principal Investigator:** Sheri Murray Ellis
**Field Supervisor(s):** Sheri Murray Ellis
**Recon Acres Surveyed (<15m intervals):** 0 ac.
**USGS 7.5' Series Map Reference(s):** Roy, UT and Clearfield, UT

| Sites Reported | Count | Smithsonian Trinomials |
|---|---|---|
| Revisits (no updated site forms) | 0 | |
| Updates (updated site forms attached) | 3 | 42DV138, 42DV158/42DV223, 42DV182 |
| New recordings (site forms attached) | 0 | |
| Total Count of Archaeological Sites in APE | 3 | 42DV138, 42DV158/42DV223, 42DV182 |
| Historic Structures (structures forms Attached) | 5 | 4233 W 300 N, 4182 W 1300 N, ~4300 W 300 N, ~4320 W 300 N, 4133 W 1800 N |
| Total National Register Eligible Sites | 1 | 42DV158/42DV223 |

*Please list all site numbers per category. Number strings are acceptable (e.g. "42TO1-13; 42TO15"). Cells should expand to accommodate extensive lists.

**Checklist of Required Items for Submittal to SHPO**

- ☒ "Born Digital" Report in a PDF/A format
  - ☒ SHPO Cover Sheet
  - ☒ File Name is the UDSH Project Number with no hyphens or landowner suffixes
- ☒ "Born Digital" Site forms in PDF/A format
  - ☒ UASF with embedded maps and photos
  - ☒ File name is Smithsonian Trinomial without leading zeros (e.g. 42TO13 not 42TO00013)
  - ☒ Photo requirements (including size and quality)
- ☒ Archaeological Site Tabular Data
  - ☒ Single spreadsheet for each project
  - ☒ Follows UTSHPO template (info here: https://goo.gl/7SLMqj)
- ☒ GIS data
  - ☒ Zipped polygon shapefile or geodatabase of survey (if different from APE) or other activity area with required field names and variable intensity denoted
  - ☒ Zipped polygon shapefile or geodatabase of site boundaries with a the required field name

# An Archaeological Resource Assessment for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah

## UDOT Project No. S-R-199(381); PIN 20927

Prepared for

Bowen Collins & Associates

Prepared by

Sheri Murray Ellis, MS, RPA
Owner /Consultant

Certus Environmental Solutions, LLC
Salt Lake City, Utah
801.230.7260

**Utah Antiquities Report No. U24HY0375**
**PLPCO Permit No. 176**

**Certus Project Number BCA77**

December 5, 2024

# PROJECT ABSTRACT SHEET

**Report Title:** *An Archaeological Resource Assessment for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah*

**UDOT Project Number and PIN:** S-R-199(381); PIN 20927

**Utah State Report Number:** U24HY0375

**Agencies:** Utah Department of Transportation (UDOT), U.S. Army Corps of Engineers (USACE)

**Project Description:** UDOT proposes to construct the next phase of the West Davis Corridor (SR-177) between SR-193 and 1800 North in West Point and Clinton, Davis County. The project would entail construction of a new roadway, utilities, drainage facilities, and a multi-use trail, etc. and will require acquisition of right-of-way beyond what UDOT currently owns in the area. The study is currently funded with state monies, but a permit may be required from the USACE to address impacts to wetlands or waters of the U.S. This federal agency involvement invokes the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR §800. The involvement of state funding and approvals by UDOT invokes UCA 9-8-404, the state equivalent of 36 CFR §800. Certus Environmental Solutions (Certus), as a member of the consultant team, was contracted to carry out studies related to cultural resources that could be affected by the new construction or right-of-way acquisition. The results of an archaeological resources assessment are presented herein. UDOT and the USACE may use this information as part of their regulatory compliance. A report of historical buildings and structures located in the survey area is provided under separate cover.

**Survey Area:** The cultural resource assessment area comprises a series of irregular polygons and linear corridors surrounding the anticipated areas of ground disturbance, easements, and right-of-way acquisition. This area was defined in conjunction with UDOT and corresponds with the aquatic and biological resources assessment areas. The survey contains 195 acres.

**Location:** West Point; T. 4N, R. 2W, Sec. 5 & 6; T. 5N, R. 2W, Sec. 19, 29–32

**Land Ownership:** Private, Municipal, UDOT (right-of-way)

**Date(s) of Fieldwork:** June 4–6, August 2–3, October 11, and November 22, 2024

**Methods:** Intensive-level archaeological survey

**Acres Surveyed:** 195 acres

**Total Archaeological Sites in the Survey Area:** 3 (42DV138, 42DV158/42DV223, 42DV182)

**NRHP Eligible Sites in the Survey Area:** 1 (42DV158/42DV223)

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## Introduction

UDOT proposes to construct the next phase of the West Davis Corridor (SR-177) between SR-193 and 1800 North in West Point and Clinton, Davis Count (see **Figure** 1, for the general project location). The project would entail construction of a new roadway, utilities, drainage facilities, and a multi-use trail, etc. and will require acquisition of right-of-way beyond what UDOT currently owns in the area. The study is currently funded with state monies, but a permit may be required from the USACE to address impacts to wetlands or waters of the U.S. This federal agency involvement invokes the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR §800. The involvement of state funding and approvals by UDOT invokes UCA 9-8-404, the state equivalent of 36 CFR §800.

Certus Environmental Solutions (Certus), as a member of the consultant team, was contracted to carry out studies related to cultural resources that could be affected by the new construction or right-of-way acquisition. The results of an archaeological resources assessment are presented herein. UDOT and the USACE may use this information as part of their regulatory compliance. A report of historical buildings and structures located in the survey area is provided under separate cover.

Fieldwork was carried out by the author June 4–6, August 2–3, October 11, and November 22, 2024, and was conducted under Utah State Antiquities Report No. U24HY0375 and Utah Public Lands Policy Coordination Office (PLPCO) Permit No. 176.

## Cultural Resources Survey Area

The cultural resource assessment area comprises a series of irregular polygons and linear corridors surrounding the anticipated areas of ground disturbance, easements, and right-of-way acquisition (see **Figures 2 & 3**). This area was defined in conjunction with UDOT and corresponds with the aquatic and biological resources assessment areas. The survey contains 195 acres and includes all lands on which ground disturbance, temporary construction easements, and permanent right-of-way acquisition, as they were understood at the time of fieldwork, would occur. All lands in the survey area are under private and municipal ownership.

The survey areas are found in Township 4 North, Range 2 West, Sections 5 and 6 and Township 5 North, Range 2 West, Sections 19, 29–32 of the Salt Lake Base and Meridian. The area can be found on USGS 7.5 minute Utah topographic quadrangles Roy and Clearfield (see **Figure 2**).

## Environmental Setting

The general project area is located in the suburban communities of West Point and Clinton, which are found between the Great Salt Lake and the Wasatch Mountains along the north-central part of the Wasatch Front. Elevation of the project area ranges from approximately 4,230 to 4,260 feet above sea level. Terrain is generally flat with a gentle overall downward slope to the west toward the lake. Most land in the survey area is unoccupied in terms of building but not undeveloped or undisturbed. The majority of the area was used historically for agricultural purposes—primarily livestock grazing—with large areas used more recently for disposal of construction debris and excavated soils.

Vegetation throughout the survey area is dominated by invasive plants, non-native bunch grasses, and introduced landscaping associated with residential properties. Ground cover ranged from barren to 100-percent with an average of greater than 60-percent at the time of survey. Occasional pockets of riparian plants are present along irrigation canals and stormwater retention facilities. Surface soils are medium brown silty loam.

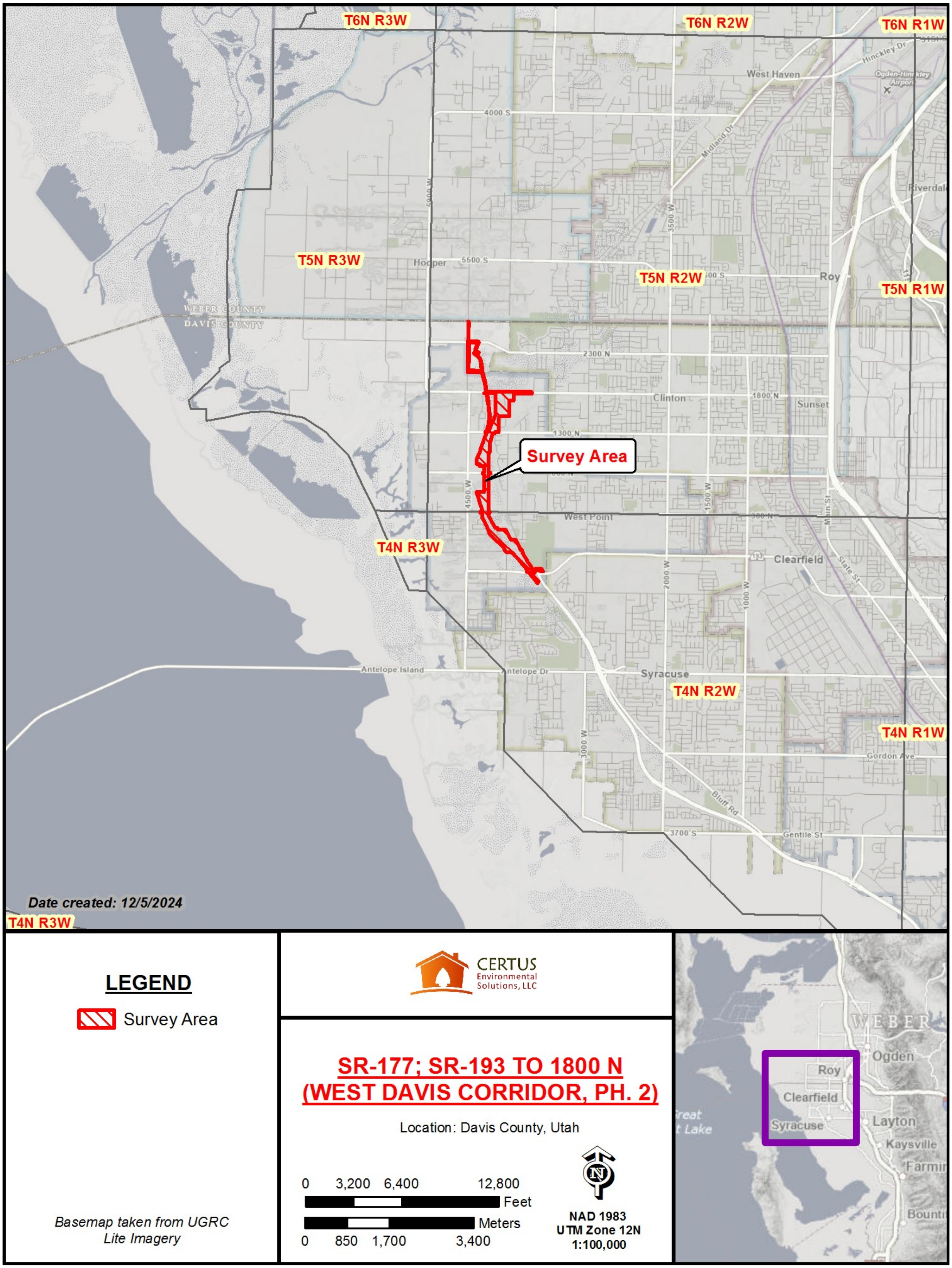



**Figure 1.** General location of the project

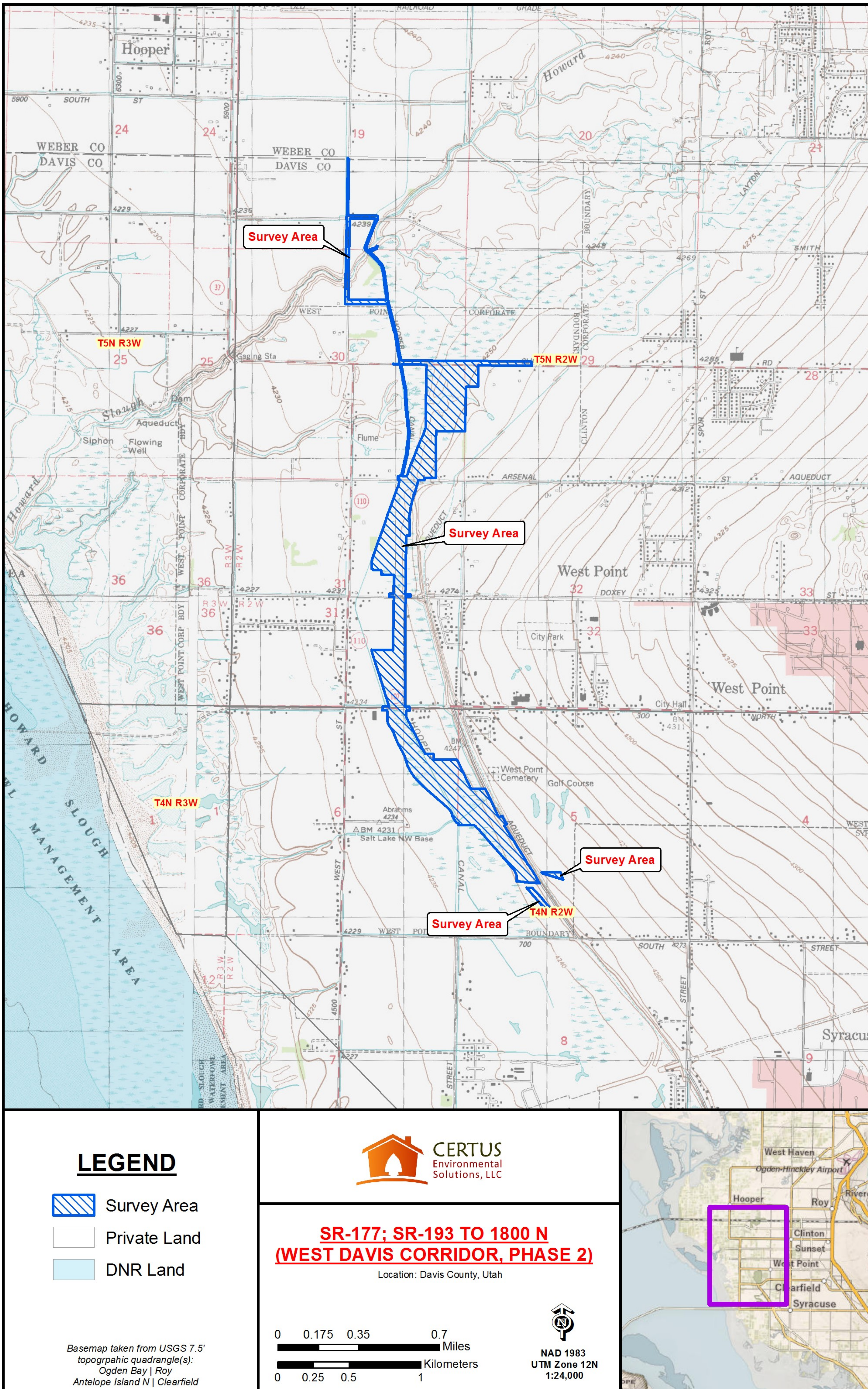



**Figure 2.** Location of cultural resources survey area; topographic map

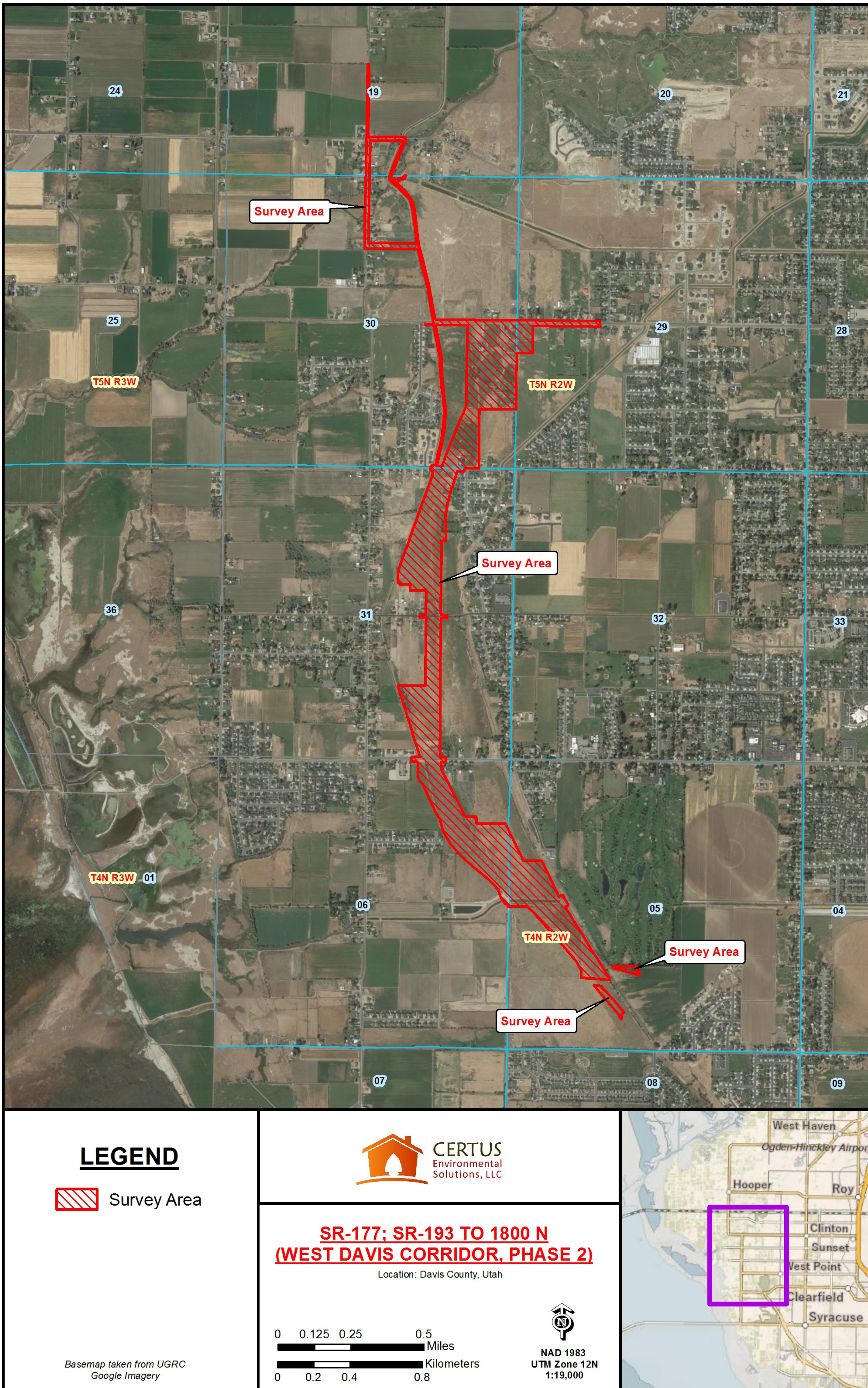



**Figure 3.** Location of cultural resources survey area; aerial map

## FIELD METHODS

Certus applied intensive-level archaeological survey methods accepted by the Utah State Historic Preservation Officer (SHPO), UDOT, and other agencies in Utah to identify cultural resources that could be affected by the undertaking. This survey consisted of the author walking parallel transects spaced no more than 15 meters (50 feet) apart across the survey corridor. Navigation within the survey area was accomplished using aerial photos, visual landmarks, and a GPS unit capable of decimeter accuracy. A cut-off age of 45 years old or older was used per UDOT guidelines to define the historic period.

Archaeological resources encountered during the field inventory were documented through digital photographs, written description, and mapping using the GPS unit. A Utah Archaeological Site Form was prepared for each newly identified site and for any previously identified sites that required updates to their existing record.

The National Park Service (NPS) defines five cultural resource types that can be listed on the National Register of Historic Places (the National Register): buildings, sites, districts, structures, and objects (NPS 2002). For the purpose of this project, the following criteria set forth by the Utah SHPO were used to define resources as archaeological sites:

- At least 10 artifacts of a single class (e.g., 10 sherds) within a 10-meter diameter area, except when all pieces appear to originate from a single source (e.g., one ceramic pot or one glass bottle)
- At least 15 artifacts that include at least 2 classes of artifact types (e.g., sherds, nails, glass) within a 10-meter area
- One or more archaeological features in temporal association with any number of artifacts
- Two or more temporally associated archaeological features without artifacts

## FILE SEARCH AND ARCHIVAL RECORDS REVIEW

Certus conducted a search of the online (Sego and HUB) sites and project files of the Utah SHPO on June 1, 2024. The file search encompassed an area extending 1/2 mile in all directions from the edge of the survey area. The file search was conducted to:

a) identify any areas of the survey area that may not require additional field inventory;

b) identify any previously documented sites in the survey area that should be considered relative to potential project impacts; and

c) assess the potential for encountering cultural resources during the field survey for the project and obtain information about the types of cultural resources likely to be present.

### *SHPO File Review*

According to SHPO records, 18 prior regulatory-based cultural resource assessments have taken place within 1/2 mile of the survey area. These surveys occurred between 1982 and 2023 with most occurring after 2010. Nine of the projects encompassed portions of the current survey area. This includes a prior reconnaissance-level survey for the West Davis Corridor EIS that encompassed a substantial portion of the current survey area. Certus reinventoried all previously inspected portions of the current survey area for the present undertaking.

SHPO records indicate that nine archaeological sites have been reported previously in the file search area. The sites are dominated by historical irrigation canals and distribution ditch systems. No prehistoric period sites have been reported in the area. Two of the previously reported sites extend into the current survey area. They are discussed in more detail in the Findings section of this report. These sites are as follows:

- **42DV158/42DV223/42WB425**: Hooper Canal system. The site has been assigned two Davis County site numbers with the later number (42DV223) appearing to have been erroneously assigned in 2021. The site has been determined both eligible and ineligible for the National Register. The majority of determinations related to documentation of segments of the system over time found it eligible under Criterion A. The sole determination that the site is ineligible was made in 2021 under site number 42DV233.

- **42DV182**: Layton Canal system. This site was determined ineligible for the National Register under all criteria in 2015 following documentation of the full main canal by the Bureau of Reclamation.

### *Historical Map Review*

As part of the file search, Certus reviewed online General Land Office (GLO) maps, topographic maps, and historical air photos for the relevant area. GLO maps providing illustration of lands in the survey area were available online for Township 4 North, Range 2 West for the year 1855 and for Township 5 North, Range 2 West for the years 1855, 1856, and 1941. These sources do not depict any man-made features that could still be present in the current survey area.

The only historical USGS topographic maps of reasonable scale available for the survey area date to 1955 (Roy and Clearfield quadrangles) and 1972 (Clearfield quadrangle). The maps depict the Hooper Canal as the only man-made feature in the survey area aside from the road network, which is actively used and maintained and not considered a historical resource for the purpose of regulatory compliance.

### *Paleontological Resources Consultation*

Per UDOT requirements for projects with notable ground disturbance, Certus consulted with the Utah Geological Survey (UGS) regarding known and potential paleontological resources that could be affected by the proposed undertaking. UGS indicated that no fossil localities are known to be present in the survey area and that the Quaternary and Recent alluvial and lacustrine deposits exposed in the area have low potential for yielding significant fossil localities. A copy of the consultation letter from the UGS is included in **Appendix A.**

## FINDINGS

Certus documented three archaeological sites in the survey area. See **Figure 4 in Appendix B** for the resource locations and the sections below for descriptions and National Register eligibility evaluations. These sites include an unnamed land drain (42DV138), the Hooper Canal system (42DV158/42DV223), and the Layton Canal (42DV182).

### *Site 42DV138, Unnamed Land Drain*

This site is an unnamed land drain (ditch) located near 200 South in West Point. The segment of the site documented here begins on the east at the edge of the Schneiter's Bluff Golf Course where the ditch channel daylights and extends to the west for 717 meters. Along this segment, the ditch is unlined and measures approximately 20 feet wide across the top by 14-15 feet wide at the bottom. It has a shallow U-shaped cross-section and is roughly 4 feet deep. No water control features were observed along the documented segment, but several modern concrete slab crossings and corrugated metal pipe culverts were noted.

Little is known about the history of the drainage ditch. Portions of the system near 4500 West appear in aerial images from 1937 (the earliest for the area), but the full system as it appears today did not take shape until after at least 1971. The portion of the ditch east of 4500 West appears to have been enlarged after 1971 while the segment west of 4500 West remained unchanged until it was partially piped sometime between 1971 and 1985. Documentation of other segments of the ditch located further east suggests it was constructed sometime around 1913 and served as a combination irrigation ditch and storm drain/land drain (Meess 2008). It does not appear the ditch is used for irrigation purposes at this time. The ditch has been expanded along many segments to serve as a storm drain/land drain for municipal systems in the area.

The portion of the ditch documented here retains integrity of location but has seen diminishment of its integrity of materials, design, workmanship, setting, feeling, and association through a combination of piping segments to the east, expanding the system during the modern era, enlarging portions of the ditch, and developing surrounding lands, which has eliminated many of the agricultural fields that may have been irrigated by the system in the early period of its history.

**National Register Evaluation**

The overall ditch site was ***determined ineligible*** for the National Register under all criteria as a result of multiple past evaluations of segments outside the current survey area. Certus supports these prior determinations and recommends the site continue to be addressed as an ineligible resource. The portion of the site documented and evaluated here does not contain any features worthy of preservation, and no new archival information was found to identify any historical associations not previously known.

### *Site 42DV158/42DV223, Hooper Canal System*

Site 42DV158 is the Hooper Canal system. It was assigned a duplicate site number (42DV223) in 2021. The canal flows from the Weber River in Wilson to the Syracuse area, where it eventually empties into the Great Salt Lake. Originally used to convey irrigation water, the canal now carries both irrigation and storm water. The system includes the main canal and a series of laterals and sub-laterals that branch out throughout the Syracuse area.

One 5,247-meter-long (3.3-mile-long) segment of the main canal is discussed herein as are several segments of lateral distribution ditches extending off of the canal. The documented portion of the main canal begins near 550 South in West Point and extends north to a point north of 2425 North. Near the southern end of the canal, the channel includes a combination of active open channel north of 300 North and abandoned channel south of 300 North. The abandoned channel segment appears to have been piped underground, but the exact path of the piping is unclear, as it does not appear to follow the original alignment in its entirety. The portions of the abandoned channel that remain intact measure little more than 2 meters wide and less than 1 meter deep, but they are sporadic and discontinuous due to backfilling to accommodate land use. They are unlined. A pair of interconnected lateral distribution ditches extending off of the abandoned channel was also documented. These ditches measure approximately 1 meter wide by 50 centimeters deep. The only water control features observed along these ditches were two modern concrete turnouts. The actively used open channel of the main canal measures approximately 3-4 meters wide and up to 1 meter deep. The channel is lined with concrete. Several modern concrete slab crossings and several modern turnouts, trash racks, and other related features were observed along this portion of the canal.

Near the center of the documented segment, the canal comprises an open, concrete-lined channel with the same dimensions and feature types as the southern section. The northern section of the documented segment of the canal comprises an open, concrete-lined channel with the same dimensions and feature types as the southern section. One lateral distribution ditch extending off of this section of the main canal was also documented. This lateral ditch extends west from the main canal along the south side of 2425 North and measures approximately 1 meter wide by 50 centimeters deep.

Construction of the main canal began around 1869, and the system remains in use today. The canal was operated by the Hooper Irrigation Company, which was incorporated in 1903, well after the initial construction of the main canal, and was intended to provide irrigation water to as much as 8,440 acres. The canal was originally unlined. It is unclear exactly when the current concrete lining was installed, but it appears to have occurred during the historic period. Aerial imagery suggests that the majority of the remaining open and active channel of the 13.4-mile long main canal has been lined with concrete, and several segments have been realigned, likely to accommodate modern development in the area.

#### National Register Evaluation

The Hooper Canal, under site number 42DV158, was determined eligible for the National Register under Criterion A as a result of several regulatory compliance efforts during the 1990s, 2000s, and 2010s. In 2021, the site was assigned a second site number, 42DV223, and was determined ineligible under all criteria. Certus agrees with the prior determinations and recommends the site be considered ***eligible*** under Criterion A for the significant role it played in opening up lands in the Clinton, Syracuse, and West Point areas for agricultural development and, relatedly, settlement. The open portions of the canal (i.e., the concrete-lined segments and unpiped segments) would be considered contributing to the overall eligibility of the site. The piped segments are recommended non-contributing due to a lack of overall integrity.

### *Site 42DV182, Layton Canal System*

This site is the Layton Canal System. The entirety of the main canal was documented by the Bureau of Reclamation in 2015. This included both the open portions of the canal and the piped segment (i.e., the southernmost 6.4 miles of the 17-mile long canal. The portion of the site in the current survey area comprises a series of distribution ditches located near 1800 North. A 62-meter-long portion of the piped main canal near the Schneitter's Bluff Golf Course *may* also pass through the survey area; however, the exact location of the pipe relative to the survey area is unclear. SHPO database records map this portion of site as being intersected by the survey area.

The portions of the distribution ditch system addressed here include a mostly-piped segment extending west from the main canal along the north side of 1800 North and an interconnected series of open field-level ditches on the south side of 1800 North just east of the Hooper Canal. These latter features are unlined ditches measuring little more than 1 meter wide and less than 50 centimeters deep. No historical water control features were observed along these ditches. Aerial images suggest these ditches were constructed between 1965 and 1985. In large measure, they follow the paths of natural sloughs.

The Layton Canal was constructed between 1962 and 1964 as part of the federal Weber River Basin Project. It was intended for irrigation uses and was originally an unlined channel. The main canal was constructed by the Syblon-Reid Construction Company under contract to the Bureau of Reclamation.

### National Register Evaluation

The Layton Canal site was ***determined ineligible*** for the National Register under all criteria as a result of multiple past evaluations of segments, including by Reclamation in 2015, which included the entire main canal. Certus supports these prior determinations and recommends the site continue to be addressed as an ineligible resource.

## SUMMARY

Certus conducted an intensive-level cultural resource inventory for the proposed Phase 2 construction of the West Davis Corridor (SR-177) in Davis County, Utah. The inventory identified three archaeological sites—42DV138 (an unnamed land drain), 42DV158/42DV223 (the Hooper Canal System), and 42DV182 (the Layton Canal System). Certus has recommended sites 42DV138 and 42DV182 ineligible for the National Register under all criteria. Site 42DV158/42DV223 is recommended eligible under Criterion A.

UDOT, in consultation with the Utah SHPO and other appropriate parties, will make the final determinations of eligibility and findings of effect for the undertaking. These determinations and findings will be issued under separate cover.

## References Cited

Meess, Sara. 2008. Intermountain Antiquities Computer System site form for site 42DV138. On file at the Utah State Historic Preservation Office, Salt Lake City.

National Park Service (NPS). 2002. *How to Apply the National Register Criteria for Evaluation.* National Register Bulletin 15. Utah Centennial County History Series. Accessed online on January 9, 2014 at: http://www.nps.gov/history/nr/publications/bulletins/nrb15/

# An Archaeological Resource Assessment for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah

UDOT Project No. S-R-199(381); PIN 20927

## APPENDIX A:

## PALEONTOLOGICAL RESOURCES CONSULTATION LETTER

State of Utah

SPENCER J. COX
*Governor*

DEIDRE M. HENDERSON
*Lieutenant Governor*

Department of Natural Resources

JOEL FERRY
*Executive Director*

Utah Geological Survey
R. WILLIAM KEACH, II
*State Geologist/Division Director*

June 7, 2024

Sheri Murray Ellis
CERTUS Environmental Solutions, LLC
655 7th Avenue
Salt Lake City UT 84103

RE: Paleontological File Search Request – UDOT Project S-R-199(381); PIN 20927
SR-177; SR-193 to 1800 North
U.C.A. 79-3-508 (Paleontological) Compliance; Request for Confirmation of Literature Search according to the UDOT/UGS Memorandum of Understanding.

Dear Sheri:

I have conducted a paleontological file search for the SR-177; SR-193 to 1800 North Project in response to your letter of June 3, 2024. This project qualifies for treatment under the UDOT/UGS executed Memorandum of Understanding.

There are no paleontological localities recorded in our files in or near this project area. Quaternary and Recent alluvial and lacustrine deposits that are exposed along this project right-of-way have a low potential for yielding significant fossil localities (PFYC 2). Unless fossils are discovered as a result of construction activities, this project should have no impact on paleontological resources.

If you have any questions, please call me at (801) 537-3311.

Sincerely,

Martha Hayden

Martha Hayden
Paleontological Assistant

1594 West North Temple, Suite 3110 • Salt Lake City, UT 84116 • Telephone (801) 537-3300 • *www.geology.utah.gov*

UTAH DNR GEOLOGICAL SURVEY

# An Archaeological Resource Assessment for the SR-177; SR-193 to 1800 North Project (West Davis Corridor Phase 2), Davis County, Utah

UDOT Project No. S-R-199(381); PIN 20927

## APPENDIX B:

## SURVEY RESULTS FIGURE

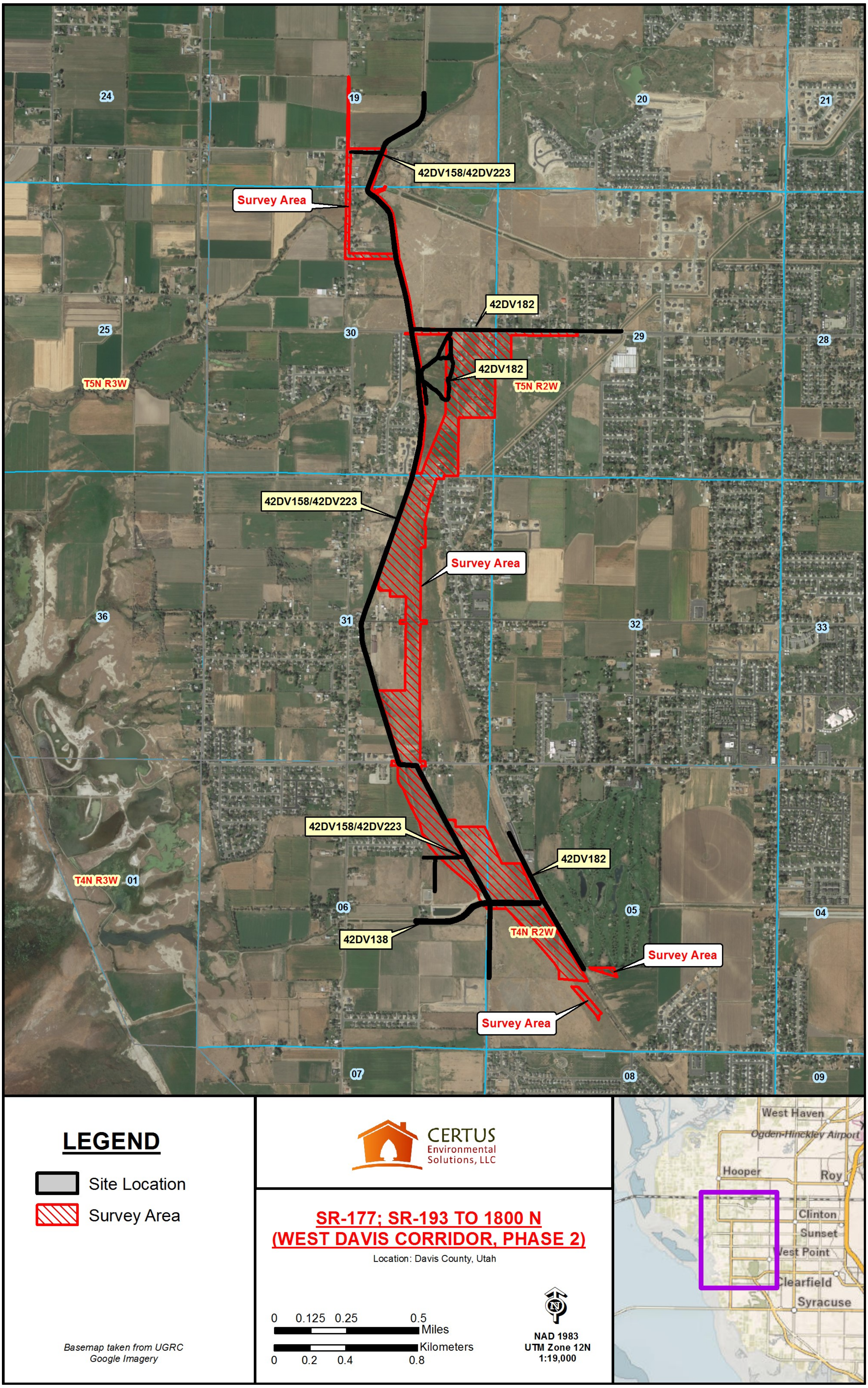



**Figure 4.** Survey results

**UTAH ARCHAEOLOGY SITE FORM** **PART A – Administrative Data**

1. **Smithsonian Trinomial**: 42DV138 – Segment
2. **Temporary Site No**. :
3. **Site Name:**
4. **Date Recorded:** 08/03/2024
5. **Type of Recording:** ☐First Recording ☐Full Re-record ☒Update
6. **Project Name**: SR-177; SR-193 to 1800 North (West Davis Corridor, Phase 2)
7. **State Project Number**: U24HY0375
8. **Land Status**: Private/Municipal
9. **USGS 7.5' Quad Map Name and Date**: Clearfield, UT
10. **Township:** 4 N **Range:** 2 W **Section:** 5 & 6 **(¼ ):** SW & SE **County:** Davis
11. **Meridian:** ☒**Salt Lake** ☐**Uintah**
12. **UTMs:** Zone 12 407400 E 4551674 N NAD83
13. **Site Dimensions:** Length: 717 m Width: 8 m Area: 11,670 $m^2$ ☒ GIS ☐ Estimate
14. **Site Class**[a]**:** ☐Prehistoric ☐Protohistoric ☒Historic
15. **Site Type:**
    - Prehistoric/Protohistoric: ☐Long-Term Residential ☐Task Specific ☐Temporary Camp ☐Specialty Site ☐Unknown ☐Other[b]
    - Historic: ☐Domestic ☐Transportation/Communication ☐Agriculture/Subsistence ☐Defense ☐Industry/Processing/Extraction ☐Unknown ☒Other[b] Stormwater management
16. **Site Characteristics**[a]**:** ☐ Artifact Scatter ☐ Rock Art/Inscription ☐ Lithic Source/Quarry ☐ Rock Shelter/Cave ☐ Architectural Feature(s) ☒ Non-Architectural Feature(s) ☒ Linear
17. **Impacting Agents:** ☐None ☐Erosion ☐Livestock Concentration ☐Recreation ☐Road/Trail ☐Vandalism/Looting ☒Other Intentional enlarging and piping of segments.
18. **Site Condition:** ☒Stable ☐Deteriorating ☐Imminently Threatened ☐Destroyed
19. **Description** (as needed)**:**
20. **Recorded By:** Sheri Murray Ellis
21. **Organization:** Certus Environmental Solutions
22. **Material Collected:** ☒No ☐Yes (describe in Site Description) **Repository:** N/A

**NRHP Evaluation**

23. **Is the Site Significant:** ☒No ☐Yes, under criterion[a]: ☐A (event) ☐B (person) ☐C (design/construction) ☐D (important information)
24. **Does it Retain Integrity:** ☐No ☒Yes, aspects present[a]: ☒Location ☐Design ☐Setting ☐Materials ☐Workmanship ☐Feeling ☐Association
25. **NRHP Status:** ☒ Not Eligible ☐ Eligible ☐ Listed
26. **Justification** (include discussion of historic context, significance, and integrity)**:**

The overall ditch site was determined ineligible for the National Register under all criteria as a result of multiple past evaluations of segments outside the current survey area. Certus supports these prior determinations and recommends the site continue to be addressed as an ineligible resource. The portion of the site documented and evaluated here does not contain any features worthy of preservation, and no new archival information was found to identify any historical associations not previously known.

[a] Check all that apply
[b] See manual for additional categories

**Smithsonian Trinomial:** 42DV138
**Temporary Site No.:** ______________________________

27. **Site Description** (interpretation, context, size, artifact and feature assemblage, dating, previous work and curation, etc.): ___

This site is an unnamed land drain (ditch) located near 200 South in West Point. The segment of the site documented here begins on the east at the edge of the Schneiter's Bluff Golf Course where the ditch channel daylights and extends to the west for 717 meters. Along this segment, the ditch is unlined and measures approximately 20 feet wide across the top by 14-15 feet wide at the bottom. It has a shallow U-shaped cross-section and is roughly 4 feet deep. No water control features were observed along the documented segment, but several modern concrete slab crossings and corrugated metal pipe culverts were noted.

Little is known about the history of the drainage ditch. Portions of the system near 4500 West appear in aerial images from 1937 (the earliest for the area), but the full system as it appears today did not take shape until after at least 1971. The portion of the ditch east of 4500 West appears to have been enlarged after 1971 while the segment west of 4500 West remained unchanged until it was partially piped sometime between 1971 and 1985. Documentation of other segments of the ditch located further east suggests it was constructed sometime around 1913 and served as a combination irrigation ditch and storm drain/land drain (Meess 2008). It does not appear the ditch is used for irrigation purposes at this time. The ditch has been expanded along many segments to serve as a storm drain/land drain for municipal systems in the area.

The portion of the ditch documented here retains integrity of location but has seen diminishment of its integrity of materials, design, workmanship, setting, feeling, and association through a combination of piping segments to the east, expanding the system during the modern era, enlarging portions of the ditch, and developing surrounding lands, which has eliminated many of the agricultural fields that may have been irrigated by the system in the early period of its history.

22. **Environmental Context** (topography, vegetation, ground visibility, depositional context): _________

This portion of the site is located near 200 South in West Point. The ditch passes through abandoned/fallow agricultural (grazing) land, and vegetation comprises remnants of introduced forage grasses and extensive invasive plants with minor amounts of riparian plants in the open ditch channel.

23. **Notes Regarding Access** (as needed): _____

Access to the site is generally unrestricted.

24. **Additional Part A Comments:** ________________

Meess, Sara. 2008. Intermountain Antiquities Computer System site form for site 42DV138. On file at the Utah State Historic Preservation Office, Salt Lake City.



[a] Check all that apply
[b] See manual for additional categories

**UTAH ARCHAEOLOGY SITE FORM** **PART C – Historic Component**

**Smithsonian Trinomial:** 42DV138
**Temporary Site No.:** ____________

1. **Primary dates of site use:** c. 1913 to Present
2. **Secondary dates of site use:** ________ to ________

3. **Architectural Features**

   Type Description

   None

4. **Non-Architectural Features**

| Type | Description |
|---|---|
| Ditch/Ditch | The segment of the site documented here begins on the east at the edge of the Schneiter's Bluff Golf Course where the ditch channel daylights and extends to the west for 717 meters. Along this segment, the ditch is unlined and measures approximately 20 feet wide across the top by 14-15 feet wide at the bottom. It has a shallow U-shaped cross-section and is roughly 4 feet deep. No water control features were observed along the documented segment, but several modern concrete slab crossings and corrugated metal pipe culverts were noted. . |

5. **Feature Comments:** ____________

6. **Cans** – Total Quantity: 0

| **Quantity** | **Type** | **Description** |
|---|---|---|
| | | |

7. **Can Comments:** No artifacts were observed in association with the documented ditch segment.

8. **Glass Bottles** – Total ENV: 0

| **ENV** | **Manufacturing Method** | **Description** |
|---|---|---|
| | | |

9. **Glass Bottle Comments:** No artifacts were observed in association with the documented ditch segment.

10. **Ceramics** – Total ENV: 0

| **ENV** | **Ware** | **Description** |
|---|---|---|
| | | |

11. **Ceramic Comments:** No artifacts were observed in association with the documented ditch segment.

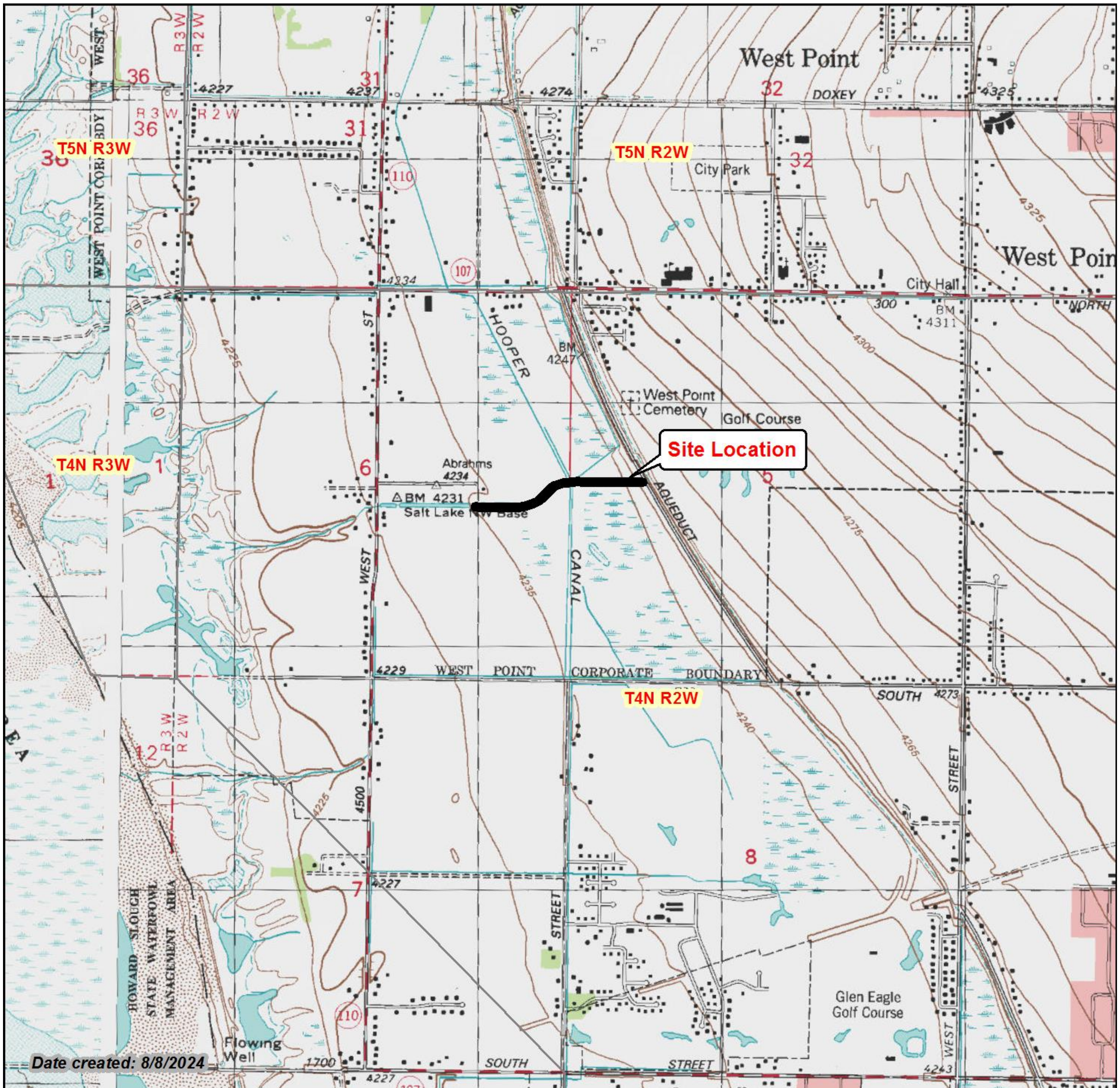
12. **Additional Artifacts/Debris:**

- ☐ Ammunition/Firearms
- ☐ Bone
- ☐ Building Materials
- ☐ Car/Car Parts
- ☐ Ceramics (non-tableware)
- ☐ Building Materials
- ☐ Glass (non-bottle)
- ☐ Hardware
- ☐ Nails (cut)
- ☐ Nails (wire)
- ☐ Plastic
- ☐ Stove Parts
- ☐ Toys
- ☐ Other

13. **Additional Artifact/Debris Description:** No artifacts were observed in association with the documented ditch segment.

14. **Additional Part C Comments:** ____________

[a] Check all that apply
[b] See manual for additional categories




## LEGEND

Site Location

*Basemap taken from USGS 7.5' topographic quadrangle(s):*
*Ogden Bay | Roy*
*Antelope Islands N | Clearfield*

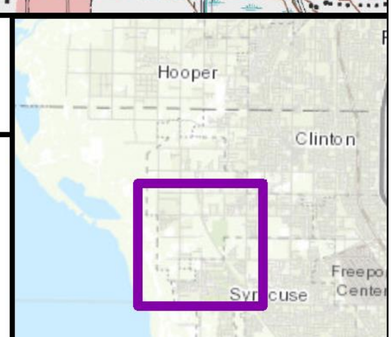
CERTUS Environmental Solutions, LLC

## SITE 42DV138

Location: Davis County, Utah

0 750 1,500 3,000 Feet
0 205 410 820 Meters

NAD 1983
UTM Zone 12N
1:24,000




Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance


## LEGEND

Site Boundary

Datum

*Basemap taken from UGRC Google Imagery*

CERTUS Environmental Solutions, LLC

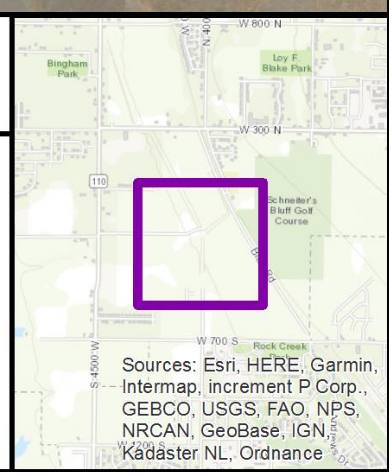
## SITE 42DV138

Location: Davis County, Utah

0 160 320 640 Feet

0 40 80 160 Meters

**NAD 1983**
**UTM Zone 12N**
**1:5,000**



**42DV138; Overview of open ditch segment; looking east**

**UTAH ARCHAEOLOGY SITE FORM** **PART A – Administrative Data**

1. **Smithsonian Trinomial**: 42DV158
2. **Temporary Site No.** :
3. **Site Name:** Hooper Canal System

4. **Date Recorded:** 06/03/2024 and 11/22/2024
5. **Type of Recording:** ☐First Recording ☐Full Re-record ☒Update
6. **Project Name**: SR-177; SR-193 to 1800 North (West Davis Corridor, Phase 2)
7. **State Project Number:** U24HY0375
8. **Land Status**: Private
9. **USGS 7.5' Quad Map Name and Date**: Roy, UT and Clearfield, UT
10. **Township:** 4 N **Range:** 2 W **Section:** 5 & 6 **(¼ ):** SW & E½ **County:** Davis
    **Township:** 5 N **Range:** 2 W **Section:** 19, 30 & 31 **(¼ ):** SE, SE & NE
11. **Meridian:** ☒**Salt Lake** ☐**Uintah**
12. **UTMs:** Zone 12 406882 E 4552470 N NAD83
13. **Site Dimensions:** Length: 5,247 m Width: 8 m Area: 56,279 $m^2$ ☒ GIS ☐ Estimate
14. **Site Class[a]:** ☐Prehistoric ☐Protohistoric ☒Historic
15. **Site Type:**
    Prehistoric/Protohistoric: ☐Long-Term Residential ☐Task Specific ☐Temporary Camp ☐Specialty Site ☐Unknown ☐Other[b]
    Historic: ☐Domestic ☐Transportation/Communication ☒Agriculture/Subsistence ☐Defense ☐Industry/Processing/Extraction ☐Unknown ☐Other[b]
16. **Site Characteristics[a]:** ☐ Artifact Scatter ☐ Rock Art/Inscription ☐ Lithic Source/Quarry ☐ Rock Shelter/Cave ☐ Architectural Feature(s) ☒ Non-Architectural Feature(s) ☒ Linear
17. **Impacting Agents:** ☐None ☐Erosion ☐Livestock Concentration ☐Recreation ☐Road/Trail ☐Vandalism/Looting
    ☒Other Piping of portions of the once open ditch network
18. **Site Condition:** ☒Stable ☐Deteriorating ☐Imminently Threatened ☐Destroyed
19. **Description** (as needed):
20. **Recorded By:** Sheri Murray Ellis 21. **Organization:** Certus Environmental Solutions
22. **Material Collected:** ☒No ☐Yes (describe in Site Description) **Repository:**

**NRHP Evaluation**

23. **Is the Site Significant:** ☐No ☒Yes, under criterion[a]:
    ☒A (event) ☐B (person) ☐C (design/construction) ☐D (important information)

24. **Does it Retain Integrity:** ☐No ☒Yes, aspects present[a]:
    ☒Location ☒Design ☒Setting ☒Materials ☐Workmanship ☒Feeling ☒Association
25. **NRHP Status:** ☐ Not Eligible ☒ Eligible ☐ Listed
26. **Justification** (include discussion of historic context, significance, and integrity)**:**

The Hooper Canal, under site number 42DV158, was determined eligible for the National Register under Criterion A as a result of several regulatory compliance efforts during the 1990s, 2000s, and 2010s. In 2021, the site was assigned a second site number, 42DV223, and was determined ineligible under all criteria. Certus agrees with the prior determinations and recommends the site be considered eligible under Criterion A for the significant role it played in opening up lands in the Clinton, Syracuse, and West Point areas for agricultural development and, relatedly, settlement. The open (unpiped) portions of the canal (i.e., the concrete-lined segments) would be considered contributing to the overall eligibility of the site. The piped segments are recommended non-contributing due to a lack of overall integrity.

[a] Check all that apply
[b] See manual for additional categories

27. **Site Description** (interpretation, context, size, artifact and feature assemblage, dating, previous work and curation, etc.): ___

Site 42DV158 is the Hooper Canal system. It was assigned a duplicate site number (42DV223) in 2021. The canal flows from the Weber River in Wilson to the Syracuse area, where it eventually empties into the Great Salt Lake. Originally used to convey irrigation water, the canal now carries both irrigation and storm water. The system includes the main canal and a series of laterals and sub-laterals that branch out throughout the Syracuse area.

Site 42DV158 is the Hooper Canal system. It was assigned a duplicate site number (42DV223) in 2021. The canal flows from the Weber River in Wilson to the Syracuse area, where it eventually empties into the Great Salt Lake. Originally used to convey irrigation water, the canal now carries both irrigation and storm water. The system includes the main canal and a series of laterals and sub-laterals that branch out throughout the Syracuse area.

One 5,247-meter-long (3.3-mile-long) segment of the main canal is discussed herein as are several segments of lateral distribution ditches extending off of the canal. The documented portion of the main canal begins near 550 South in West Point and extends north to a point north of 2425 North. Near the southern end of the canal, the channel includes a combination of active open channel north of 300 North and abandoned channel south of 300 North. The abandoned channel segment appears to have been piped underground, but the exact path of the piping is unclear, as it does not appear to follow the original alignment in its entirety. The portions of the abandoned channel that remain intact measure little more than 2 meters wide and less than 1 meter deep, but they are sporadic and discontinuous due to backfilling to accommodate land use. They are unlined. A pair of interconnected lateral distribution ditches extending off of the abandoned channel was also documented. These ditches measure approximately 1 meter wide by 50 centimeters deep. The only water control features observed along these ditches were two modern concrete turnouts. The actively used open channel of the main canal measures approximately 3-4 meters wide and up to 1 meter deep. The channel is lined with concrete. Several modern concrete slab crossings and several modern turnouts, trash racks, and other related features were observed along this portion of the canal.

Near the center of the documented segment, the canal comprises an open, concrete-lined channel with the same dimensions and feature types as the southern section. The northern section of the documented segment of the canal comprises an open, concrete-lined channel with the same dimensions and feature types as the southern section. One lateral distribution ditch extending off of this section of the main canal was also documented. This lateral ditch extends west from the main canal along the south side of 2425 North and measures approximately 1 meter wide by 50 centimeters deep.

Construction of the main canal began around 1869, and the system remains in use today. The canal was operated by the Hooper Irrigation Company, which was incorporated in 1903, well after the initial construction of the main canal, and was intended to provide irrigation water to as much as 8,440 acres. The canal was originally unlined. It is unclear exactly when the current concrete lining was installed, but it appears to have occurred during the historic period. Aerial imagery suggests that the majority of the remaining open and active channel of the 13.4-mile long main canal has been lined with concrete, and several segments have been realigned, likely to accommodate modern development in the area. Because this is a relatively minor update to the site record and no major historical features were observed, Certus has only completed Part A of this site form.

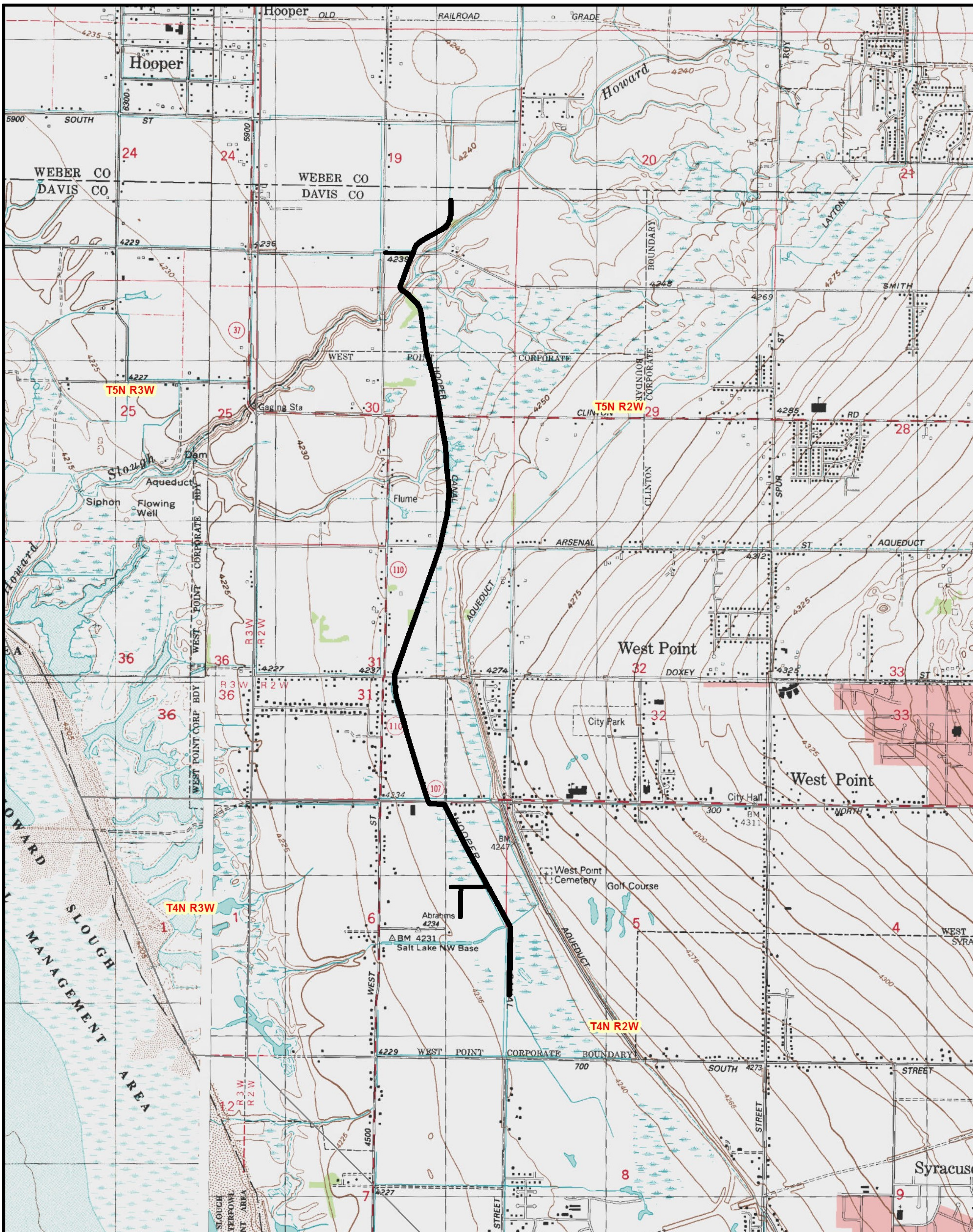
28. **Environmental Context** (topography, vegetation, ground visibility, depositional context): The portion of the ditch network documented here is located in the West Point area of Davis County. The terrain of the area is generally flat and sloping very gently to the west to the Great Salt Lake. Lands surrounding the ditches are a combination of active and fallow farm properties with introduced agricultural crops.

29. **Notes Regarding Access** (as needed): _Access to the documented segments is unrestricted.

30. **Additional Part A Comments:** ________________

[a] Check all that apply

[b] See manual for additional categories




## LEGEND

Site Location

Basemap taken from USGS 7.5' topogrpahic quadrangle(s):
Ogden Bay | Roy
Antelope Island N | Clearfield

CERTUS Environmental Solutions, LLC

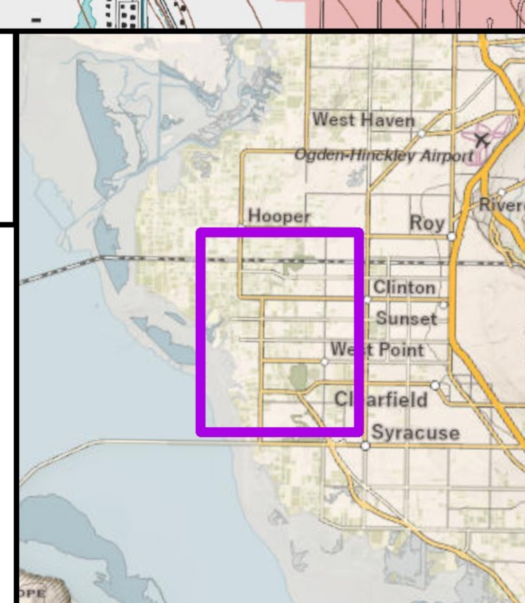
## SITE 42DV158: HOOPER CANAL SYSTEM

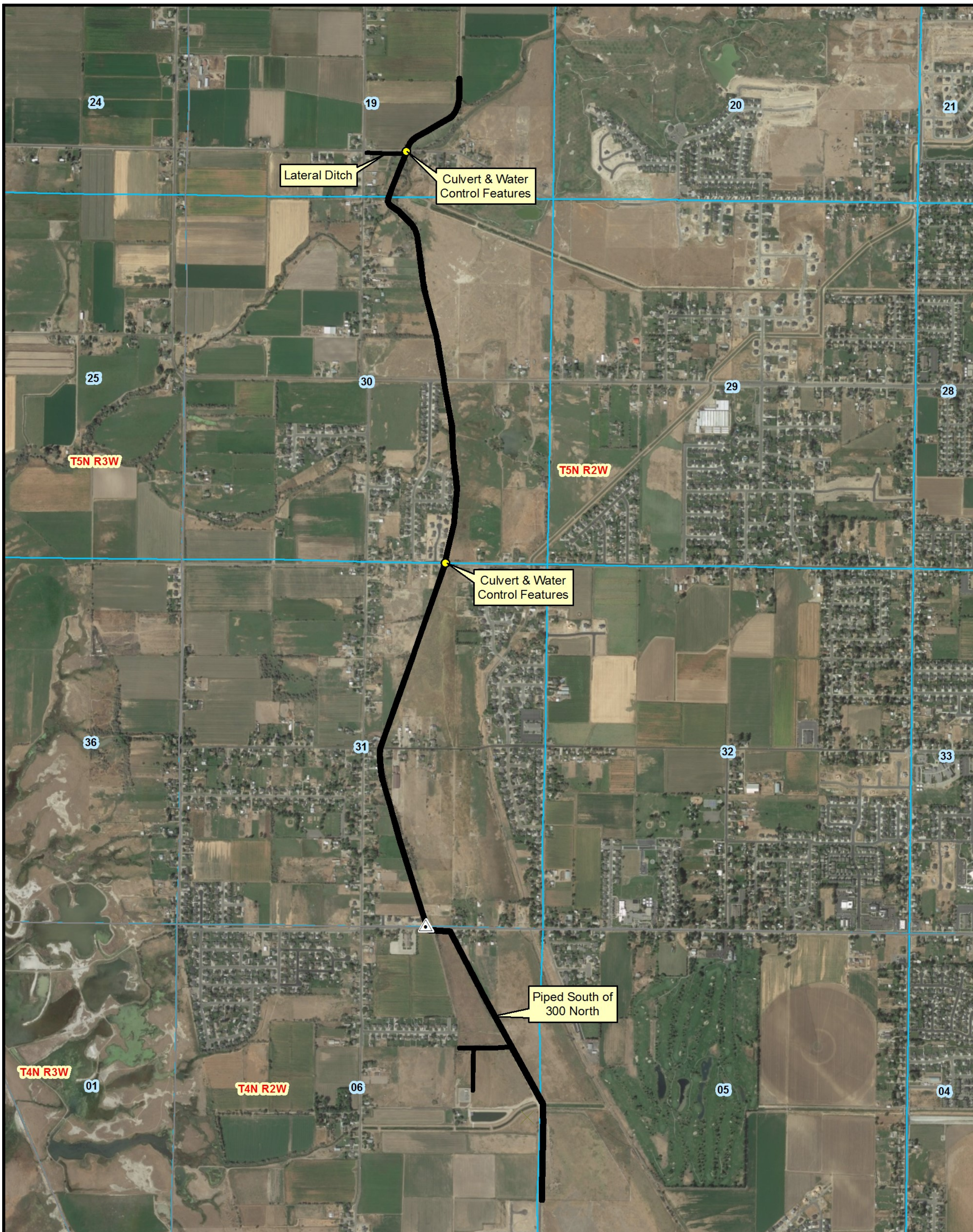
Location: Davis County, Utah

0 0.175 0.35 0.7 Miles

0 0.25 0.5 1 Kilometers

NAD 1983
UTM Zone 12N
1:24,000






## LEGEND

Site Location

Datum

Feature

*Basemap taken from UGRC Google Imagery*

CERTUS Environmental Solutions, LLC

## SITE 42DV158: HOOPER CANAL SYSTEM

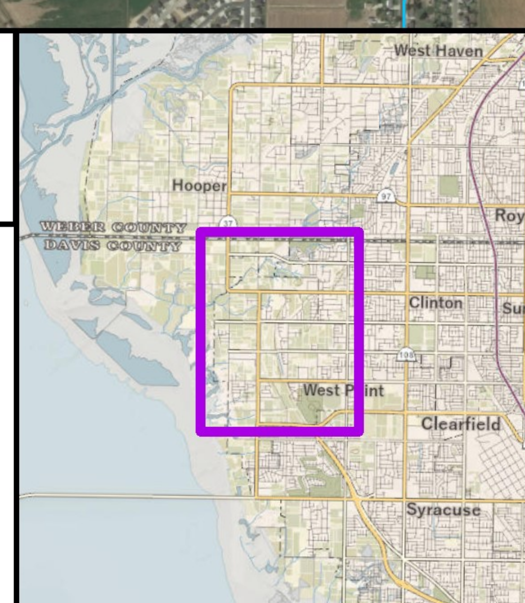
Location: Davis County, Utah

0 0.125 0.25 0.5 Miles

0 0.175 0.35 0.7 Kilometers

N

NAD 1983
UTM Zone 12N
1:17,000



**42DV158; Main canal at 300 North (southern section); looking north-northwest**

**42DV158; Main canal at 300 North showing trash racks, diversions, and culvert; looking south**

**42DV158; Central section; looking north**

**42DV158; Hooper Canal central section – water control features near 800 North; looking south**

42DV158; Hooper Canal central section – water control features at 800 North; looking northeast

42DV158; Hooper Canal northern section; looking north

**Photo Date(s): 06/03/2024**

**42DV158; Distribution ditch on southern section of main canal; looking west**

**UTAH ARCHAEOLOGY SITE FORM** **PART A – Administrative Data**

1. **Smithsonian Trinomial**: 42DV182
2. **Temporary Site No.** :
3. **Site Name:** Layton Canal System
4. **Date Recorded:** 06/05/2024
5. **Type of Recording:** ☐First Recording ☐Full Re-record ☒Update
6. **Project Name**: SR-177; SR-193 to 1800 North (West Davis Corridor, Phase 2)
7. **State Project Number:** U24HY0375
8. **Land Status**: Private
9. **USGS 7.5' Quad Map Name and Date**: Roy, UT
10. **Township:** 5 N **Range:** 2 W **Section:** 29 & 30 **(¼ ):** NW & SE **County:** Davis
11. **Meridian:** ☒**Salt Lake** ☐**Uintah**
12. **UTMs:** Zone 12 407160 E 4554843 N NAD83
13. **Site Dimensions:** Length: 2,325 m Width: 4 m Area: 16,233 $m^2$ ☒ GIS ☐ Estimate
14. **Site Class**[a]**:** ☐Prehistoric ☐Protohistoric ☒Historic
15. **Site Type:**

| Prehistoric/Protohistoric | | Historic | |
|---|---|---|---|
| ☐Long-Term Residential | ☐Task Specific | ☐Domestic | ☐Transportation/Communication |
| ☐Temporary Camp | ☐Specialty Site | ☒Agriculture/Subsistence | ☐Defense |
| ☐Unknown | | ☐Industry/Processing/Extraction | ☐Unknown |
| ☐Other[b] | | ☐Other[b] | |

16. **Site Characteristics**[a]**:** ☐ Artifact Scatter ☐ Rock Art/Inscription ☐ Lithic Source/Quarry ☐ Rock Shelter/Cave ☐ Architectural Feature(s) ☒ Non-Architectural Feature(s) ☒ Linear
17. **Impacting Agents:** ☐None ☐Erosion ☐Livestock Concentration ☐Recreation ☐Road/Trail ☐Vandalism/Looting ☒Other Piping of portions of the once open ditch network
18. **Site Condition:** ☒Stable ☐Deteriorating ☐Imminently Threatened ☐Destroyed
19. **Description** (as needed)**:**
20. **Recorded By:** Sheri Murray Ellis 21. **Organization:** Certus Environmental Solutions
22. **Material Collected:** ☒No ☐Yes (describe in Site Description) **Repository:**

**NRHP Evaluation**

23. **Is the Site Significant:** ☒No ☐Yes, under criterion[a]: ☐A (event) ☐B (person) ☐C (design/construction) ☐D (important information)
24. **Does it Retain Integrity:** ☐No ☒Yes, aspects present[a]: ☒Location ☐Design ☒Setting ☒Materials ☐Workmanship ☐Feeling ☒Association
25. **NRHP Status:** ☒ Not Eligible ☐ Eligible ☐ Listed
26. **Justification** (include discussion of historic context, significance, and integrity)**:**

The Layton Canal site was determined ineligible for the National Register under all criteria as a result of multiple past evaluations of segments, including by Reclamation in 2015, which included the entire main canal. Certus supports these prior determinations and recommends the site continue to be addressed as an ineligible resource.

[a] Check all that apply
[b] See manual for additional categories

**Smithsonian Trinomial:** 42DV158
**Temporary Site No.:** ______________________________

27. **Site Description** (interpretation, context, size, artifact and feature assemblage, dating, previous work and curation, etc.)**:** ___

This site is the Layton Canal System. The entirety of the main canal was documented by the Bureau of Reclamation in 2015. This included both the open portions of the canal and the piped segment (i.e., the southernmost 6.4 miles of the 17-mile long canal. The portion of the site addressed here comprises a series of distribution ditches located near 1800 North.

The portions of the distribution ditch system addressed here include a mostly-piped segment extending west from the main canal along the north side of 1800 North and an interconnected series of open field-level ditches on the south side of 1800 North just east of the Hooper Canal. These latter features are unlined ditches measuring little more than 1 meter wide and less than 50 centimeters deep. No historical water control features were observed along these ditches. Aerial images suggest these ditches were constructed between 1965 and 1985. In large measure, they follow the paths of natural sloughs.

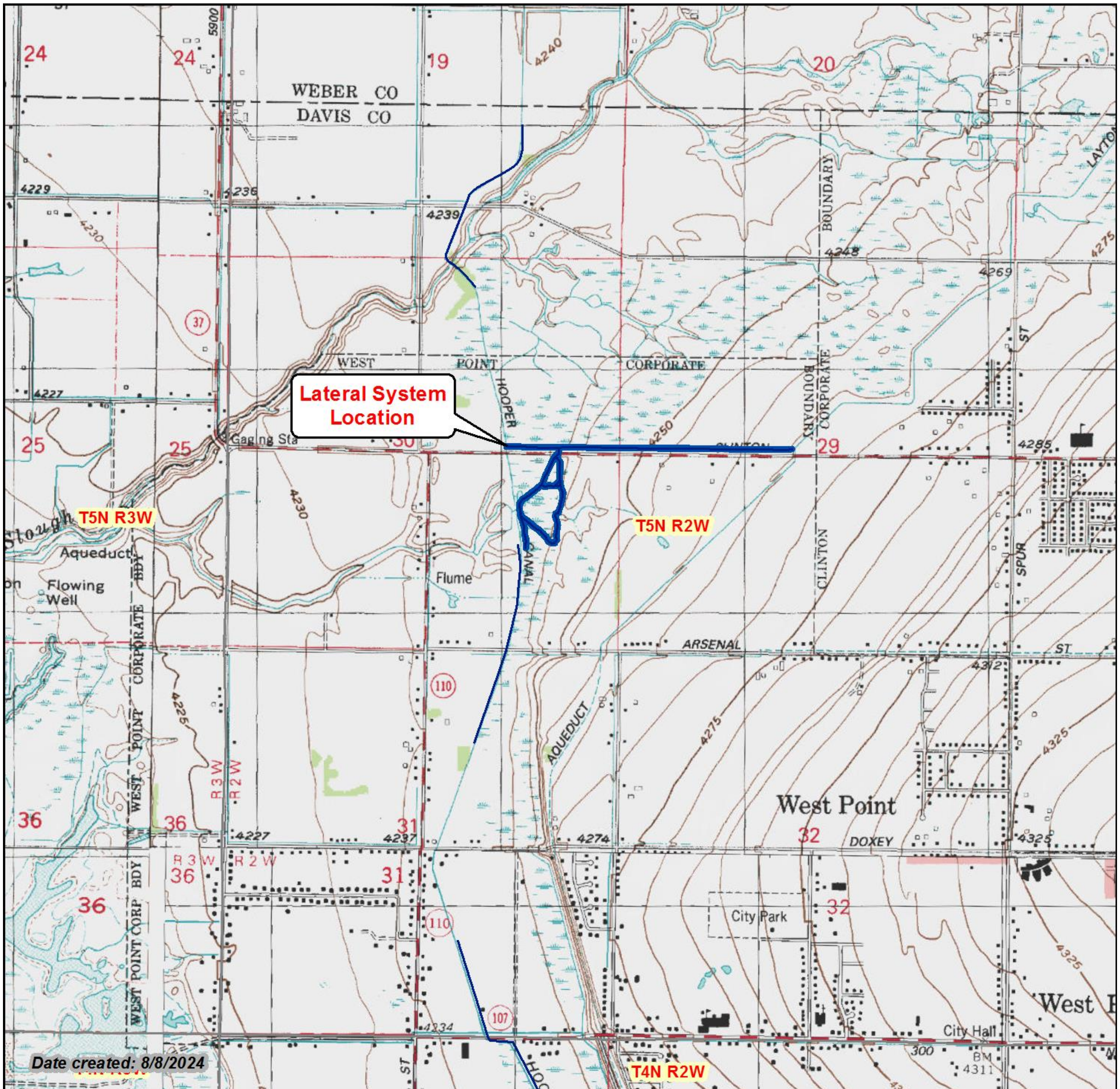
The Layton Canal was constructed between 1962 and 1964 as part of the federal Weber River Basin Project. It was intended for irrigation uses and was originally an unlined channel. The main canal was constructed by the Syblon-Reid Construction Company under contract to the Bureau of Reclamation. Because this is a relatively minor update to the site record and no major historical features were observed, Certus has only completed Part A of this site form.

28. **Environmental Context** (topography, vegetation, ground visibility, depositional context)**:** The portion of the ditch network documented here is located in the West Point area of Davis County. The terrain of the area is generally flat and sloping very gently to the west to the Great Salt Lake. Lands surrounding the ditches are a combination of active and fallow farm properties with introduced agricultural crops.

29. **Notes Regarding Access** (as needed)**:** Access to the documented segments is unrestricted.

30. **Additional Part A Comments:** ________________

[a] Check all that apply
[b] See manual for additional categories




## LEGEND

Site Location

*Basemap taken from USGS 7.5' topographic quadrangle(s):*
*Ogden Bay | Roy*
*Antelope Islands N | Clearfield*

CERTUS Environmental Solutions, LLC

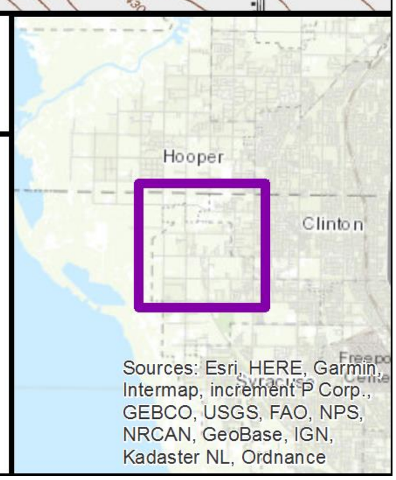
## SITE 42DV182: LAYTON CANAL SYSTEM

Location: Davis County, Utah

0 750 1,500 3,000 Feet

0 205 410 820 Meters

**NAD 1983**
**UTM Zone 12N**
**1:24,000**




Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance


## LEGEND

Site Boundary

Datum

*Basemap taken from UGRC Google Imagery*

CERTUS Environmental Solutions, LLC

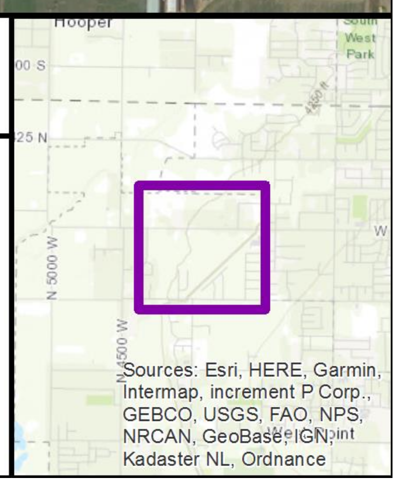
## SITE 42DV182: LAYTON CANAL SYSTEM

Location: Davis County, Utah

0 240 480 960 Feet

0 65 130 260 Meters

NAD 1983
UTM Zone 12N
1:7,600



42DV182; Main lateral along 1800 North; looking east


42DV182; Field ditches (reeds and darker grass); looking west-southwest

**Photo Date(s): 06/05/2024**

**42DV182; Field ditches (reeds and darker grass); looking southwest**

***Tribal Consultation***

State of Utah

SPENCER J. COX
*Governor*

DEIDRE M. HENDERSON
*Lieutenant Governor*

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
*Executive Director*

LISA J. WILSON, P.E.
*Deputy Director of Engineering and Operations*

BENJAMIN G. HUOT, P.E.
*Deputy Director of Planning and Investment*

August 22, 2024

Mr. Amos Murphy
Confederated Tribes of the Goshute Reservation
P.O. BOX 6104/195 Tribal Center Rd.
Ibapah, UT 84034

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

Dear Mr. Murphy,

The Utah Department of Transportation (UDOT) is preparing to undertake a re-evaluation of the West Davis Corridor EIS. In accordance with Parts 3.1.1 and 3.2 of the *Memorandum of Understanding Between the Federal Highway Administration and the Utah Department of Transportation Concerning State of Utah's Participation in the Surface Transportation Project Delivery Program Pursuant to 23 USC §327* (dated May 26, 2022), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. FHWA retains the responsibility for government-to-government consultation with Indian Tribes and this notification is sent on behalf of FHWA. Direct government-to-government consultation with FHWA is available upon request.

In compliance with Section 106 of the National Historic Preservation Act, we request that you review the information in this letter and enclosed project information to determine if there are any historic properties of traditional religious and/or cultural importance that may be affected by the proposed undertaking. If you feel that there are any historic properties that may be impacted, we request your notification as such and your participation as a consulting party during the development of the environmental document. Please be assured that, in accordance with confidentiality and disclosure stipulations in Section 304 of the NHPA, the UDOT will maintain strict confidentiality about certain types of information regarding traditional religious and/or cultural places that may be affected by this proposed undertaking.

A Final Environmental Impact Statement (EIS) and Section 4(f) Evaluation for the West Davis Corridor (WDC) was completed in June 2017 and approved through the issuance of a Record of Decision (ROD) on September 29, 2017, from the Federal Highway Administration (FHWA). This re-evaluation is evaluating the design refinements proposed to address the change of conditions in the project area between State Route 193 (SR-193) and 1800 North in Davis County, Utah since approval of the EIS Selected Alternative (ESA) in the 2017 ROD. The design refinements are identified as the Refined Selected Alternative (RSA) (see Figure 1, Site Map) include the need for a four-lane freeway (increased from a two-lane freeway in the ESA), improved alignment curvature, trail alignment, updated detention ponds and utility relocations.

Consultation with Native American tribal governments was conducted in 2012 during the original EIS. At that time the project team did not receive a response from your tribe. Given the time elapsed since the initial consultation effort, UDOT is extending an additional invitation to participate in this project.

The area of potential effects (APE) for this re-evaluation is best illustrated in the enclosed Project APE Map. The APE for direct effects is approximately 185.5 acres in one man block with extensions as necessary for utility and trail work. This APE will accommodate any grading, cutting, or filling needed to install project components and blend improvements with the existing residential and commercial landscaping.

Certus Environmental Consultants (Certus) conducted a cultural resources inventory for the project identifying one historic archaeological site and no historic buildings eligible for the National Register of Historic Places within the project APE. The UDOT Cultural Resources Program Manager and the UDOT Architectural Historian are currently working with Certus on determining how the archaeological site (Hooper Canal system) would be affected and will consult with the Utah State Historic Preservation Officer regarding those effects once they are determined. No other cultural resources or historic properties, previously-recorded or otherwise, were identified within the project APE. A copy of the cultural resources inventory results report will be available for your review upon request.

At your request, the FHWA and the UDOT staff will be available to meet with you to discuss any concerns you might have about the project. Should you have any questions or concerns about this project and/or wish to be a consulting party, feel free to contact me at lizrobinson@utah.gov or 801-910-2035.

To facilitate our consultation with you regarding this project, we would greatly appreciate a response to this letter within 30 days of receipt.

Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc: Ms. Mary Pete-Freeman, Tribal Transportation Planner

State of Utah

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*Deputy Director of Planning and Investment*

August 22, 2024

Ms. Mary Pete-Freeman
Confederated Tribes of the Goshute Reservation
P.O. BOX 6104/195 Tribal Center Rd.
Ibapah, UT 84034

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

Dear Ms. Pete-Freeman,

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The area of potential effects (APE) for this re-evaluation is best illustrated in the enclosed Project APE Map. The APE for direct effects is approximately 185.5 acres in one man block with extensions as necessary for utility and trail work. This APE will accommodate any grading, cutting, or filling needed to install project components and blend improvements with the existing residential and commercial landscaping.

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Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc: Mr. Amos Murphy, Chairman

State of Utah

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*Deputy Director of Planning and Investment*

August 22, 2024

Mr. Daniel Moon
Skull Valley Band of Goshute Indians
407 Skull Valley Rd.
Skull Valley, UT 84029

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

Dear Mr. Moon,

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Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc:

State of Utah

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*Deputy Director of Engineering and Operations*

BENJAMIN G. HUOT, P.E.
*Deputy Director of Planning and Investment*

August 22, 2024

Mr. Dennis Alex
Northwestern Band of Shoshone Nation
2575 Commerce Way
Ogden, UT 84401

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

Dear Mr. Alex,

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Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc: Ms. Patty Timbimboo-Madsen, Cultural and Natural Resource Manager

State of Utah

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DEPARTMENT OF TRANSPORTATION

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*Deputy Director of Planning and Investment*

August 22, 2024

Ms. Patty Timbimboo-Madsen
Northwestern Band of Shoshone Nation
2575 Commerce Way
Ogden, UT 84402

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

Dear Ms. Timbimboo-Madsen,

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Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Elizabeth Robinson

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc: Mr. Dennis Alex, Chairman

State of Utah

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*Governor*

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*Lieutenant Governor*

DEPARTMENT OF TRANSPORTATION

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*Deputy Director of Engineering and Operations*

BENJAMIN G. HUOT, P.E.
*Deputy Director of Planning and Investment*

August 22, 2024

Mr. LeeJuan Tyler
Shoshone-Bannock Tribes of the Fort Hall Reservation
P.O. Box 306 Pima Drive
Fort Hall, ID 83203

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

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Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Elizabeth Rn

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc: Ms. Carolyn Smith, Cultural Resources/Heritage Tribal Office (HeTO)

State of Utah

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*Deputy Director of Planning and Investment*

August 22, 2024

Ms. Carolyn Smith
Shoshone-Bannock Tribes of the Fort Hall Reservation
P.O. Box 306 Pima Drive
Fort Hall, ID 83203

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

Dear Ms. Smith,

The Utah Department of Transportation (UDOT) is preparing to undertake a re-evaluation of the West Davis Corridor EIS. In accordance with Parts 3.1.1 and 3.2 of the *Memorandum of Understanding Between the Federal Highway Administration and the Utah Department of Transportation Concerning State of Utah's Participation in the Surface Transportation Project Delivery Program Pursuant to 23 USC §327* (dated May 26, 2022), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. FHWA retains the responsibility for government-to-government consultation with Indian Tribes and this notification is sent on behalf of FHWA. Direct government-to-government consultation with FHWA is available upon request.

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The area of potential effects (APE) for this re-evaluation is best illustrated in the enclosed Project APE Map. The APE for direct effects is approximately 185.5 acres in one man block with extensions as necessary for utility and trail work. This APE will accommodate any grading, cutting, or filling needed to install project components and blend improvements with the existing residential and commercial landscaping.

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At your request, the FHWA and the UDOT staff will be available to meet with you to discuss any concerns you might have about the project. Should you have any questions or concerns about this project and/or wish to be a consulting party, feel free to contact me at lizrobinson@utah.gov or 801-910-2035.

To facilitate our consultation with you regarding this project, we would greatly appreciate a response to this letter within 30 days of receipt.

Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc: Mr.Devon Boyer, Chairman

August 22, 2024

Mr. Joshua Mann
Eastern Shoshone Tribe of the Wind River Reservation
P.O. Box 538/15 North Fork Rd
Fort Washakie, WY 82514

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

Dear Mr. Mann,

The Utah Department of Transportation (UDOT) is preparing to undertake a re-evaluation of the West Davis Corridor EIS. In accordance with Parts 3.1.1 and 3.2 of the *Memorandum of Understanding Between the Federal Highway Administration and the Utah Department of Transportation Concerning State of Utah's Participation in the Surface Transportation Project Delivery Program Pursuant to 23 USC §327* (dated May 26, 2022), the UDOT assumes responsibility, assigned by the Federal Highway Administration (FHWA), for ensuring compliance with Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended. FHWA retains the responsibility for government-to-government consultation with Indian Tribes and this notification is sent on behalf of FHWA. Direct government-to-government consultation with FHWA is available upon request.

In compliance with Section 106 of the National Historic Preservation Act, we request that you review the information in this letter and enclosed project information to determine if there are any historic properties of traditional religious and/or cultural importance that may be affected by the proposed undertaking. If you feel that there are any historic properties that may be impacted, we request your notification as such and your participation as a consulting party during the development of the environmental document. Please be assured that, in accordance with confidentiality and disclosure stipulations in Section 304 of the NHPA, the UDOT will maintain strict confidentiality about certain types of information regarding traditional religious and/or cultural places that may be affected by this proposed undertaking.

A Final Environmental Impact Statement (EIS) and Section 4(f) Evaluation for the West Davis Corridor (WDC) was completed in June 2017 and approved through the issuance of a Record of Decision (ROD) on September 29, 2017, from the Federal Highway Administration (FHWA). This re-evaluation is evaluating the design refinements proposed to address the change of conditions in the project area between State Route 193 (SR-193) and 1800 North in Davis County, Utah since approval of the EIS Selected Alternative (ESA) in the 2017 ROD. The design refinements are identified as the Refined Selected Alternative (RSA) (see Figure 1, Site Map) include the need for a four-lane freeway (increased from a two-lane freeway in the ESA), improved alignment curvature, trail alignment, updated detention ponds and utility relocations.

Consultation with Native American tribal governments was conducted in 2012 during the original EIS. At that time the project team did not receive a response from your tribe. Given the time elapsed since the initial consultation effort, UDOT is extending an additional invitation to participate in this project.

The area of potential effects (APE) for this re-evaluation is best illustrated in the enclosed Project APE Map. The APE for direct effects is approximately 185.5 acres in one man block with extensions as necessary for utility and trail work. This APE will accommodate any grading, cutting, or filling needed to install project components and blend improvements with the existing residential and commercial landscaping.

Certus Environmental Consultants (Certus) conducted a cultural resources inventory for the project identifying one historic archaeological site and no historic buildings eligible for the National Register of Historic Places within the project APE. The UDOT Cultural Resources Program Manager and the UDOT Architectural Historian are currently working with Certus on determining how the archaeological site (Hooper Canal system) would be affected and will consult with the Utah State Historic Preservation Officer regarding those effects once they are determined. No other cultural resources or historic properties, previously-recorded or otherwise, were identified within the project APE. A copy of the cultural resources inventory results report will be available for your review upon request.

At your request, the FHWA and the UDOT staff will be available to meet with you to discuss any concerns you might have about the project. Should you have any questions or concerns about this project and/or wish to be a consulting party, feel free to contact me at lizrobinson@utah.gov or 801-910-2035.

To facilitate our consultation with you regarding this project, we would greatly appreciate a response to this letter within 30 days of receipt.

Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Elizabeth Rin

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc:

State of Utah

SPENCER J. COX
*Governor*

DEIDRE M. HENDERSON
*Lieutenant Governor*

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
*Executive Director*

LISA J. WILSON, P.E.
*Deputy Director of Engineering and Operations*

BENJAMIN G. HUOT, P.E.
*Deputy Director of Planning and Investment*

August 22, 2024

Ms. Betsy Chapoose
Ute Indian Tribe of the Uintah & Ouray Reservation
P.O. Box 190
Fort Duchesne, UT 84026

RE: UDOT Project No. S-R199(381)00, West Davis Corridor SR-177, SR-193 to 1800 North, West Point City, Davis County, Utah (PIN 20927).
**Updated Notification of Project and Invitation to be a Section 106 Consulting Party**

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Thank you for your attention to this project notification and any comments you may have.

Sincerely,

Elizabeth Rn

Liz Robinson
UDOT Cultural Resources Program Manager

Enclosures

cc: Mr. Julius Murray, Chairperson