RECLAMATION

Managing Water in the West

Draft Environmental Assessment Haights Creek Irrigation Company Water Conservation Project

PRO-EA-16-016

Upper Colorado Region
Provo Area Office
Provo, Utah

U.S. Department of the Interior
Bureau of Reclamation
Provo Area Office
Provo, Utah

June 2017

Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Draft Environmental Assessment Haights Creek Irrigation Company Water Conservation Project

Upper Colorado Region
Provo Area Office
Provo, Utah

prepared by

Interdisciplinary Team Leader

Rick Jones
Bureau of Reclamation
Provo Area Office
302 East 1860 South
Provo, UT 84606

U.S. Department of the Interior
Bureau of Reclamation
Provo Area Office
Provo, Utah

June 2017

Contents

Page

Chapter 1 Purpose of and Need for Proposed Action

1.1 Introduction

This Environmental Assessment (EA) was prepared to examine the potential environmental impacts of the Haights Creek Irrigation Company (HCIC) Water Conservation Project located in Davis County, Utah. If approved, the Bureau of Reclamation would authorize the use of Federal funds to abandon and replace in a new alignment approximately 1.3 miles of existing deteriorating asbestos cement and galvanized steel pipelines (Figure 1-1, Project Location Map). The project would also include the installation and replacement of flow meters and valves throughout the project area.

1.2 Background

1.2.1 WaterSMART

As the U.S. Department of Interior's primary water management agency, Reclamation's mission is to manage, develop and protect water and water related resources in an environmentally and economically sound manner. A key component to Reclamation's activities, is to support water conservation and assist resource managers in making decisions regarding water use. Reclamation's WaterSMART program administers grants, funds, scientific studies, and provides technical assistance to State and local entities to support water conservation activities. Established in February 2010 by U.S. Secretary of the Interior Ken Salazar, the WaterSMART program was developed to meet the goals outlined in the Omnibus Public Land Management Act of 2009. Subtitle F of the Act, also known as the SECURE Water Act, established that "adequate and safe supplies of water are fundamental to the health, economy, and ecology of the United States" and authorizes Federal agencies to work with local entities to address issues that jeopardize the security and supply of water (Reclamation 2011).

1.2.2 Haights Creek Irrigation Company

In 1873, Hector Haight and others formed the HCIC, the first formal irrigation company in Kaysville, Utah. The HCIC was formally incorporated by the State of Utah on February 28, 1899. Roughly a decade later, the Haights Bench Irrigation Company was established and a canal along each bench of Kaysville was constructed. The canals drew water from Farmington Creek and had a limited geographic coverage. Until the Davis and Weber Counties Canal system was extended to the south Layton and Kaysville areas in the late 1920s, the HCIC

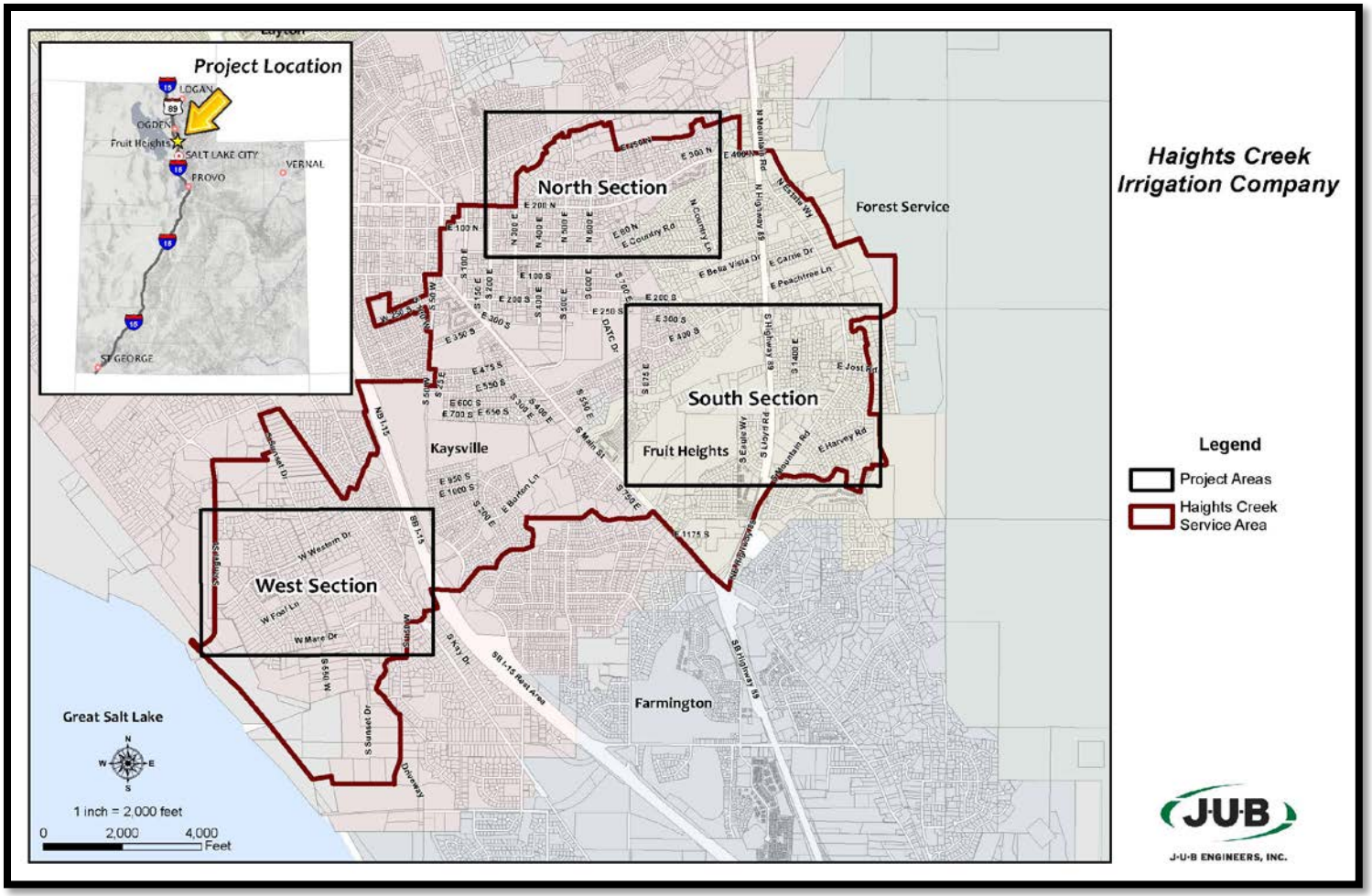


Figure 1-1, Project Location Map

was essentially the only irrigation company serving the broader Kaysville Area. In the 1940s, the system came under the regulatory umbrella of the Weber Basin Water Conservancy District.

In the early decades of the HCIC distribution system, agricultural efforts in the Kaysville area were largely of a subsistence nature for most residents. In the western part of the city where large tracts of flat lands could be found, larger scale farming and livestock rearing for commercial purposes was more common. As lands within the core of the town and along the benches filled-in with residences and commercial developments, agriculture as a means of subsistence or economic support became less common for residents. The large-scale societal shift from farming to wage labor in the years surrounding World War II further served to diminish the role of agriculture in the Kaysville area. During the post-war years, the HCIC's irrigation network was piped and pressurized, and now the HCIC distribution system delivers non-potable water for residences, businesses, and agriculture through 63 miles of piping, connections, and valves situated throughout 3,200 acres within the cities of Kaysville and Fruit Heights, Utah.

1.3 Purpose of and Need for Proposed Action

This EA evaluates the potential effects of the Proposed Action in order to determine whether it would cause significant impacts to the human or natural environment, as defined by the National Environmental Policy Act (NEPA) of 1969. If the EA shows no significant impacts associated with implementation of the proposed project, then a Finding of No Significant Impact (FONSI) will be issued by Reclamation. Otherwise, an Environmental Impact Statement (EIS) will be necessary prior to implementation of the Proposed Action.

The purpose of the project is to replace deteriorating asbestos cement and galvanized steel pipelines and the valves, and to abandon in place existing pipelines that are located on private property along the existing HCIC water distribution system. The need for the project is to conserve water, increase efficiency, and expand the water distribution system to serve existing users throughout the HCIC system. The distribution lines that are located in the residential backyards require frequent repairs. Since these alignments are located on private property, it is difficult to access the pipelines. It is also difficult for HCIC staff to detect when there are breaks in the lines.

The project would also bring the main distribution lines into public rights-of-way for better management, maintenance, and access. Water is seeping through the leaking and crumbling 55-year old asbestos cement and galvanized steel pipe into the ground, roads, and residential properties.

The project area is located in the cities of Kaysville and Fruit Heights in Davis County, Utah. The project area is contained within secs. 1, 2, 9, and 10, T. 3 N. R. 1 W. and in secs. 34, 35, and 36, T. 4 N., R. 1 W. (Figure 1-1, Project Location

Map). The elevation in the project area ranges from approximately 4,220 to 4,710 feet above sea level. Land use in the area is primarily residential and commercial uses, with a few agricultural uses (primarily alfalfa, hay, and fruit orchards) adjacent to the western portion of the project area.

1.4 Public Scoping and Involvement

The public includes all groups or individuals outside Reclamation. Reclamation's public involvement process presents the public with opportunities to obtain information about a given project and allows interested parties to participate in the project through written comments. The public involvement process for this project included meetings with property owners and residents along the proposed project alignment and a presentation at the HCIC annual stockholder meeting on February 18, 2017. The draft EA was sent to interested agencies and members of the public. Additional information about the public involvement process is located in Section 5.2 Public Involvement of this EA.

1.5 Permits, Licenses, and Authorizations

Implementation of the Proposed Action may require a number of authorizations and permits from State and Federal agencies. The HCIC would be responsible for obtaining all permits, licenses, and authorizations required for the Proposed Action. Potential authorizations and permits may include those listed in Table 1-1.

Table 1-1
Permits and Authorizations

Agency/Department	Purpose
Utah Department of Environmental Quality, the Division of Water Quality and the Division of Water Resources	A Utah Pollutant Discharge Elimination System (UPDES) permit for construction activities would be required to help prevent erosion and ensure sediment controls are utilized to minimize construction impacts. The project contractor would obtain this permit.
Davis County	A Construction Permit would be obtained from Davis County for excavation activities.
Utah State Historic Preservation Office	Consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA), 16 USC 470.

1.6 Related Projects and Documents

In 1962, one-third of the HCIC's service area open ditch system was replaced with a piped pressure irrigation system through a Small Reclamation Projects Act loan. In 1967, another loan was received for $718,000 from the Small Reclamation Projects Act to replace all of the remaining open ditch system with a piped pressure irrigation system. Along with pressurizing the system, the loan money was used to construct the Green Road Reservoir, expand the Upper Reservoir, and expand the 200 North pond. No known Reclamation projects were completed along the HCIC system from 1968 to 2017. The HCIC performed minor maintenance projects during this time period but no large scale projects took places. In early 2017, Reclamation approved the Green Road Reservoir project through a categorical exclusion. This project will pipe approximately 880 linear feet of the HCIC system, replace and install valves, and construct a small hydroelectric turbine on the inlet of the Green Road Reservoir. The Green Road Reservoir project, in combination with the Proposed Action evaluated in this EA, is anticipated to have a cumulative beneficial impact to water conservation and efficiency along the HCIC irrigation system. There are no other known current or planned projects related to the Proposed Action.

1.7 Scope of Analysis

The purpose of this EA is to determine whether or not Reclamation should authorize, provide funding, and enter into an agreement with the HCIC to abandon and replace approximately 1.3 miles of existing pipelines in order to develop a more secure, efficient, and reliable water distribution system. That determination includes consideration of whether there would be significant impacts to the human and natural environment. In order to implement the Proposed Action, this EA must be completed and a FONSI issued. Analysis in this EA includes, temporary impacts from construction activities and permanent impacts as a result of abandoning and replacing the existing pipelines and valves.

Chapter 2 Alternatives

2.1 Introduction

The Proposed Action evaluated in this EA is Reclamation's authorization of Federal funds for the improvements deemed most appropriate for the HCIC under present day conditions. Information contained within this EA will be used to determine the potential effects on the human and natural environment. This document will guide Reclamation's decision on the implementation of the Proposed Action. The Proposed Action (the Action Alternative) is analyzed in comparison with a No Action Alternative in order to determine potential effects to the existing/baseline conditions.

If Reclamation decides to implement the Proposed Action, HCIC would be authorized to proceed with the irrigation system improvements linked in the Proposed Action (below). If authorized to proceed, HCIC would construct, own, operate, and maintain the proposed pipeline.

2.2 No Action Alternative

Under the No Action Alternative, Reclamation would not authorize the use of Federal funds for the proposed project improvements. The existing distribution system would continue to deliver water with no improvements for replacing the deteriorating valves and pipelines. Approximately 390 acre-feet of water would continue to be lost annually due to leakage from deteriorating valves (HCIC 2016). The amount of water lost under the No Action Alternative would continue to increase, as the distribution system would continue to deteriorate with age. Moreover, the current HCIC distribution system would not be able to meet predicted future water demands in the cities of Kaysville and Fruit Heights and surrounding areas. These demands are predicted to rise significantly as area farmers continue to sell their lands for residential developments.

2.3 Proposed Action (Preferred Alternative)

The Proposed Action is the preferred alternative for the project. Under the Proposed Action, HCIC would abandon and replace approximately 1.3 miles of deteriorating piping with 1.8 miles of new pipe (Figure 1-1, Project Location Map). The new pipe would range from 4 to 14-inches-in-diameter. The proposed piping would allow HCIC to abandon in place the 55-year-old distribution lines that are currently located within the backyards of many residential lots. The new pipe alignments would be located in existing roadway rights-of-way. The project

would also install approximately 90 secondary flow meters throughout the system and replace five existing valves that are located in roadway rights-of-way.

2.3.1 Construction Schedule

The proposed project is anticipated to begin in the fall of 2017, pending environmental approval. Construction activities would take place outside of the typical irrigation season, with construction likely occurring between November 1 and April 1. Construction would take place over two seasons and is anticipated to be completed by April 2019.

2.3.2 Construction Staging Areas

Staging areas would be used to stockpile pipe and other construction materials, to house equipment and to park vehicles. Staging areas have been identified and analyzed as part of this EA to determine potential project impacts throughout implementation of the Proposed Action (Figure 2-1 Project Alignment North, Figure 2-2 Project Alignment West and Figure 2-3 Project Alignment South). These impacts are included in the discussion in Chapter 3.

2.3.3 Easements

No permanent easements or right-of-way acquisitions would be required for the Proposed Action. All new sections of pipe alignment would be placed in existing roadway rights-of-way. Temporary construction easements may be required for the implementation of the Proposed Action.

2.3.4 Excavation

The proposed project improvements are not anticipated to require excavation outside of the existing rights-of-way. All excavated material would be stockpiled onsite and would be used for backfill over the new pipeline. Materials and construction equipment would be housed at the identified staging areas and in the roadway rights-of-way.

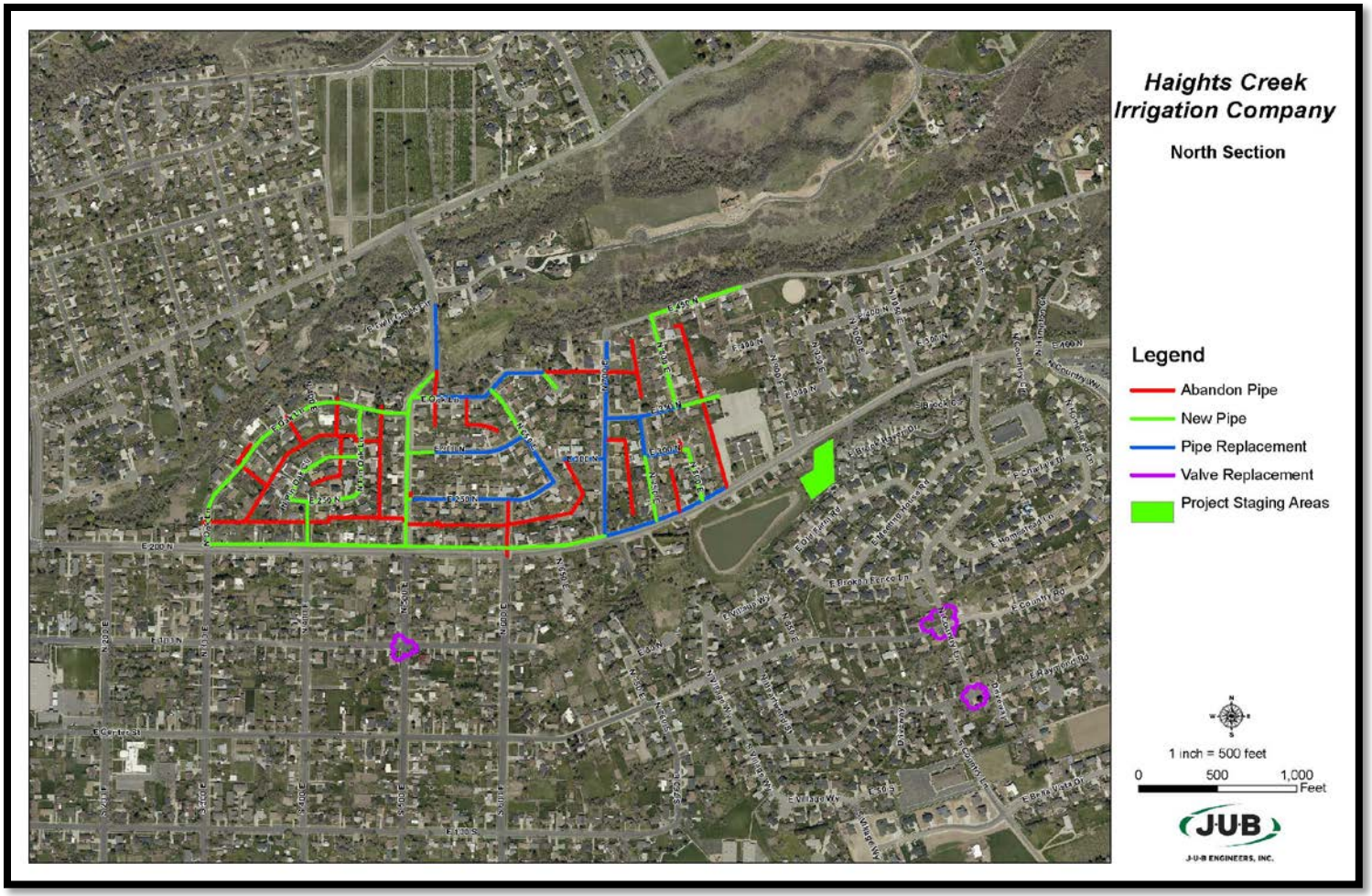


Figure 2-1, Project Alignment North

Figure 2-2, Project Alignment West

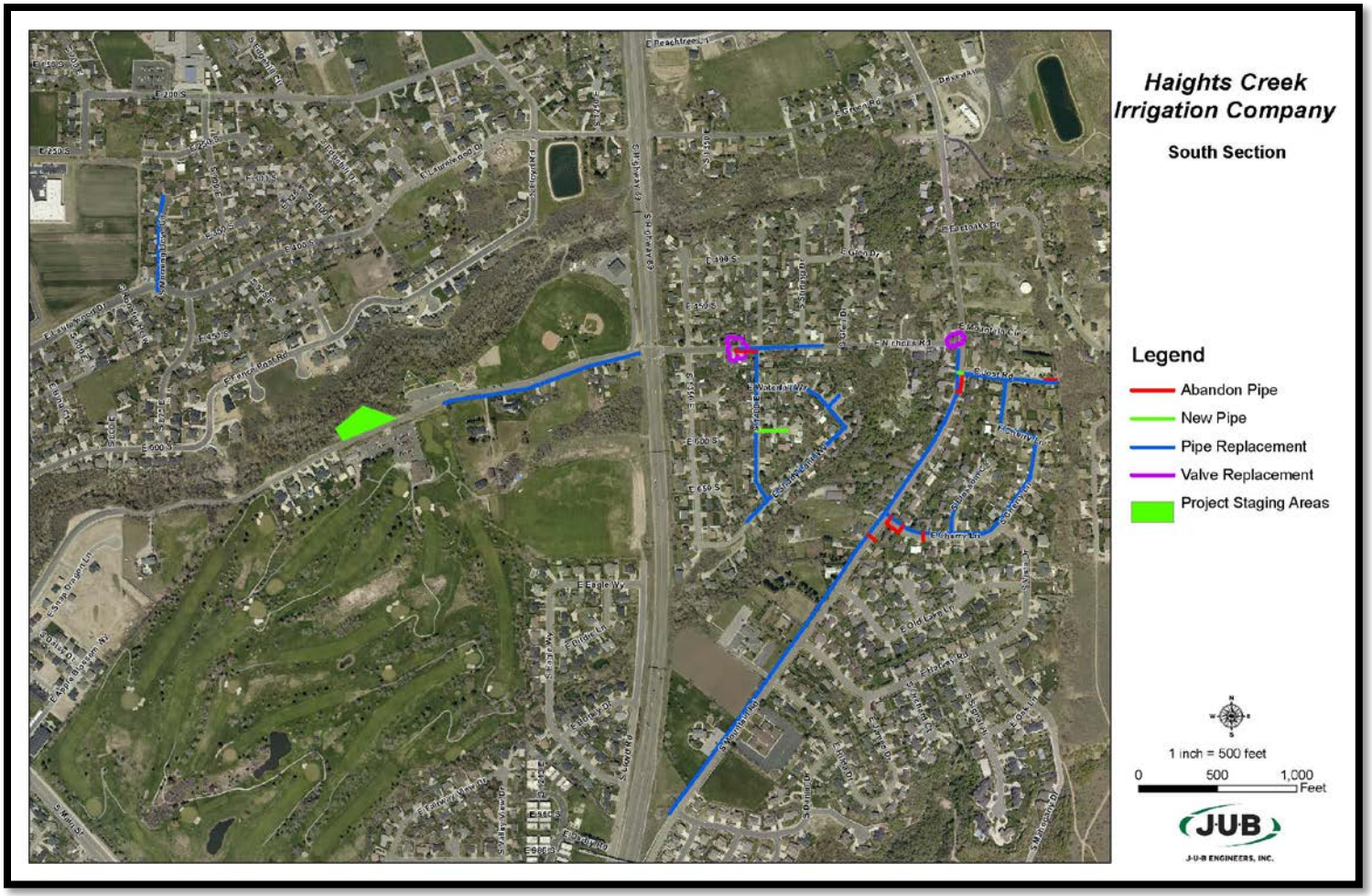


Figure 2-3, Project Alignment South

2.4 Comparison of Alternatives

The suitability of the No Action and Proposed Action were compared based on four objectives identified for the project. The objectives are:

- Conserve water;
- Increase the distribution system efficiency;
- Expand the water distribution system to meet users' needs; and
- Reduce maintenance.

As shown in Table 2-1, the No Action Alternative did not meet the project's objectives while the Proposed Action met all four objectives

Table 2-1
Comparison of Alternatives

Project Objective	Does the No Action Meet the Objective	Does the Proposed Action Meet the Objective
Conserve Water	No	Yes
Increase Efficiency	No	Yes
Expand Distribution System	No	Yes
Reduce Maintenance	No	Yes

2.5 Minimization Measures Incorporated into the Proposed Action

The minimization measures, along with other measures listed under each resource in Chapters 3 and 4 have been incorporated into the Proposed Action to lessen the potential adverse effects.

- The proposed project construction area would be located in previously disturbed sites and would have as small a footprint as possible.

- Staging areas would be located where they would minimize new disturbance of area soils and vegetation.

- Ground disturbance would be minimized to the extent possible.

- Only certified weed-free hay, straw or mulch if needed, would be used to minimize the potential spread of nonnative invasive plants.

- Construction vehicles and equipment would be inspected and cleaned prior to entry into the project area to ensure that they are free of weed seed.

- Stockpiling of materials would be limited to those areas approved and cleared in advance.

Chapter 3 Affected Environment and Environmental Consequences

3.1 Introduction

This chapter describes the environment that could be affected by the Proposed Action. These impacts are discussed under the following resource issues: geology and soils resources; visual resources; cultural resources; paleontological resources; wilderness and wild and scenic rivers; hydrology; water quality; system operations; health, safety, air quality, and noise; prime and unique farmlands; floodplains; wetlands, riparian, noxious weeds and existing vegetation; fish and wildlife resources; threatened, endangered, and sensitive species; recreation; access, and transportation; water rights; Indian Trust Assets (ITAs); and environmental justice. The present condition or characteristics of each resource are discussed first, followed by a discussion of the predicted impacts caused by the Proposed Action. The environmental effects are summarized in Section 3.7 of this EA.

Implementing minimization measures would ensure impacts are minimal and short-term. Chapter 3 presents the impact analysis for resources after minimization measures and best management practices have been successfully implemented.

3.2 Resources Considered and Eliminated from Further Analysis

The following resources were considered but eliminated from further analysis because they did not occur in the project area or because their effect is so minor (negligible) that it was discounted.

Table 3-1
Resources Eliminated from Analysis

Resource	Rationale for Elimination from Further Analysis
Visual Resources	The Proposed Action would abandon and replace existing buried waterlines, meters and valves. There would be no impact on existing vegetation, residential landscaping or other visual resources in the project area. Therefore, there would be no impact of the visual resources within the project area.

Resource	Rationale for Elimination from Further Analysis
Water Rights	The proposed project would perform maintenance activities along an existing irrigation system. No new water rights or changes to water rights are proposed.
Wilderness and Wild and Scenic Rivers	There are no Wilderness or Wild and Scenic Rivers within or adjacent to the project area (NPS 2016).

3.3 Affected Environment and Environmental Consequences

This chapter describes the affected environment (baseline conditions) and environmental consequences (impacts as a result of the Proposed Action) on the quality of the human environment that could be impacted by Reclamation authorizing the use of Federal funds for the construction and operation of the Proposed Action, as described in Chapter 2. The human environment is defined in this study as the environmental resources, including social and economic conditions occurring in the impact area of influence.

3.3.1 Geology and Soils Resources

Soil information obtained from the Natural Resources Conservation Service (NRCS) indicates that the soil in the project area is comprised of various types of loams and silty soils, primarily Timpanogos loam, Kilburn gravelly sandy loam and Parleys loam (Appendix A. Soil Survey). The soil types found in the project area are detailed in Table 3-2 Soil Composition.

Table 3-2
Soil Composition

Soil Type	Slope	Approximate Percentage of Soils in Project Area
Timpanogos loam (TbB)	1 to 3 percent	18 percent
Kilburn gravelly sandy loam (KgD)	6 to 10 percent	16 percent
Parleys loam (PaB)	1 to 3 percent	15 percent
Kilburn cobbly sandy loam (KIC)	3 to 10 percent	10 percent
Timpanogos loam (TbC)	3 to 6 percent	7 percent
Parleys loam (PaA)	0 to 4 percent	5 percent
Woods Cross silty clay (Ws)	0 to 3 percent	5 percent
Hillfield-Timpanogos-Parleys complex (HTG2)	30 to 60 percent, eroded	4 percent
Kilburn-Francis association (KFG2)	30 to 50 percent, eroded	4 percent
Parlesy loam (PaD)	6 to 10 percent	4 percent

Soil Type	Slope	Approximate Percentage of Soils in Project Area
Warm Springs fine sandy loam (WgA)	0 to 1 percent	4 percent
Hillfield-Timpanogos-Parleys complex (HTF2)	20 to 30 percent, eroded	2 percent
Airport silt loam (Ac)	0 to 2 percent	1 percent
Hillfield soils (HnD2)	6 to 8 percent, eroded	1 percent
Hillfield soils (HnE2)	10 to 20 percent, eroded	1 percent
Kilburn gravelly sandy loam (KgC)	3 to 6 percent	1 percent
Parley loam (PaC)	3 to 8 percent	1 percent
Kidman fine sandy loam (KaD)	6 to 10 percent	< 1 percent
Kilburn gravelly sandy loam (KgE2)	10 to 20 percent, eroded	<1 percent
Timpanogos loam (TbA)	0 to 1 percent	<1 percent

3.3.1.1 No Action

The No Action Alternative may have a long-term negative impact to geology and soil resources in the project area. The existing deteriorating pipelines are leaking in many spots. The water leaking from the pipelines has the potential to increase soil erosion throughout the project area. Erosion in the project area is anticipated to increase under the No Action Alternative. These conditions may cause future geologic hazards such as sinkholes and sluffing of surface soils

3.3.1.2 Proposed Action

The Proposed Action would have no long-term impacts on the geology and soil resources in the project area. The Proposed Action would have temporary surface soil impacts during construction. Construction erosion and sediment controls would serve to minimize these impacts. As a requirement of the UPDES permit for construction activities, a Storm Water Pollution Prevention Plan (SWPPP) would be developed and adhered to by the construction contractor. Disturbed areas would have topsoil and vegetation removed during construction and then replaced. The seeds of native plants in the topsoil would promote the revegetation of the disturbed areas.

3.3.2 Cultural Resources

Cultural resources are defined as physical or other expressions of human activity or occupation that are over 50 years in age. Such resources include culturally significant landscapes, prehistoric and historic archaeological sites as well as isolated artifacts or features, traditional cultural properties, Native American and other sacred places, and artifacts and documents of cultural and historic significance.

Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), mandates that Reclamation take into account the potential effects of a proposed Federal undertaking on historic properties. Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for, inclusion in the National Register of Historic Places (NRHP). Potential effects of the described alternatives on historic properties are the primary focus of this analysis.

The affected environment for cultural resources is identified as the Area of Potential Effects (APE), in compliance with the regulations to Section 106 of the NHPA (36 CFR 800.16). The APE is defined as the geographic area within which federal actions may directly or indirectly cause alterations in the character or use of historic properties. The APE for this proposed action includes the area that could be physically affected by any of the proposed project alternatives (the maximum limit of disturbance).

Class I and Class III cultural resources inventories for the APE were conducted by Certus Environmental Solutions, LLC in December 2015 (Appendix B. Cultural Resources). According to the cultural resource survey, several cultural resource sites have been documented within ½-mile of the APE. These include two railroads, a historical road, historical utility lines, and historical buildings. None of these resources are located within or in the immediate vicinity of the current APE. Certus identified a single cultural resource within the APE: the Haights Creek Irrigation System (Site 42DV189.)

In accordance with 36 CFR 800.4, this site was evaluated for significance in terms of NRHP eligibility. The significance criteria applied to evaluate cultural resources are defined in 36 CFR 60.4 as follows:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
> b. that are associated with the lives of persons significant in our past; or
> c. that embody the distinctive characteristics of a t1pe, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> d. that have yielded, or may be likely to yield, information important in prehistory or history.

Site 42DV189 is the Haights Creek Irrigation System, an extensive water provision network that irrigates an estimated 3,200 acres in Kaysville and Fruit

Heights. The Haights Creek Irrigation System has its origins in the late 1800s. Since then, most of the system appears to have been piped underground. Piping occurred from 1962 to 1967. Only one open ditch segment was observed in the APE. It is a roughly 3-foot-wide by 2-foot-deep by 450-foot-long unlined ditch parallel to the east side of Sunset Drive in western Kaysville. Although the system generally lacks surface manifestations, the alignments of the subsurface pipes can provide an estimate as to the location and extent of the historical system. Thus, the system was documented as a cultural resource site for the purpose of the general historical record of irrigation in the Kaysville and Fruit Heights areas.

Site 42DV189 is recommended ineligible for the NRHP under all criteria due to a lack of integrity. While the location of the system may remain substantially intact through the locations of the current piped network, the site lacks integrity of design, materials, workmanship, setting, feeling, and association due to the extensive subsurface piping. As such, although the system was the earliest in the Kaysville area and allowed for the expansion and success of early agricultural settlement in the area, the current elements of the system no longer convey their association with those important events, persons, or historical constructions. Thus, the Proposed Action will not have any impacts on cultural resources within the project area.

3.3.2.1 No Action

The No Action Alternative would have no effect on cultural resources within the project area.

3.3.2.2 Proposed Action

The cultural resource inventory conducted for the proposed project indicates that Site 42DV189 is not eligible for inclusion on the NRHP. The State Historic Preservation Office (SHPO) concurred with this finding in a letter dated January 17, 2017 (Appendix B. Cultural Resources). Therefore, the Proposed Action would have no impact on cultural resources within the project area.

3.3.3 Paleontological Resources

Paleontological resources are defined as any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth.

Section 6302 of the Paleontological Resources Preservation Act (PRPA) of 2009 (Sections 6301-6312 of the Omnibus Land Management Act of 2009 [Public Law 111-11 123 Stat. 991-1456]) requires the Secretary of the Interior to manage and protect paleontological resources on Federal land using scientific principles and expertise.

The potential impact area for paleontological resources is consistent with the APE for cultural resources. There are no known paleontological resources in the project area.

3.3.3.1 No Action
The No Action Alternative would have no effect on paleontological resources.

3.3.3.2 Proposed Action
The Proposed Action would not result in deep excavation or land disturbance in areas that have been previously undisturbed. Therefore, the Proposed Action would have no effect on paleontological resources.

3.3.4 Hydrology
The majority of the hydrology in the project area is derived from irrigation waters that are drawn from the Weber River and from several creeks along the Wasatch Front. Those creeks flow from the Wasatch Mountains to Bair Canyon in Fruit Heights. Groundwater, primarily from the Delta Aquifer, is used to supplement water sources within the cities of Kaysville and Fruit Heights.

The HCIC receives water from the Weber Basin Water Conservancy District (WBWCD) which receives water from Echo Reservoir and Rockport Reservoir. Both reservoirs are owned by Reclamation. The water supply comes directly from flow rights from Bair Creek (2,667 acre-feet annually) and water purchased from the WBWCD (5,946 acre-feet annually) (HCIC 2016). Today, HCIC's service area includes 3,200 acres in Kaysville and Fruit Heights. The majority of the water is secondary water used for watering lawns and gardens. The remaining water is used for agricultural purposes to irrigate 670 acres.

3.3.4.1 No Action
Under the No Action Alternative water would continue to be lost from deteriorating pipes. The No Action Alternative may have a minor long-term negative impact on the hydrology within the project area due to loss of water along the distribution system.

3.3.4.2 Proposed Action
The Proposed Action would have no negative long-term impact on the hydrology in the project area. The Proposed Action would allow better management of the WBWCD water allowing water to stay in the two reservoirs longer during the irrigation season. The conservation of water along the distribution is anticipated to conserve water and would therefore result in a long-term beneficial impact to hydrology and water resources in the project area.

3.3.5 Water Quality
Section 303(d) of the Clean Water Act (CWA) requires each state to identify those water bodies which are not supporting their beneficial uses. The Utah Division of Water Quality (UDWQ) does not require monitoring within irrigation canals, ditches or pipelines. The UDWQ does not currently have any information on the water quality in Bair Creek or Haights Creek near the project area. Therefore, there is no water quality information available for the HCIC system or the surrounding waterways. Water quality in the vicinity of the project area is likely affected by land uses including agricultural and residential activities.

3.3.5.1 No Action

Under the No Action Alternative, the continued operation and maintenance of the HCIC's current distribution system would have no impact on the existing water quality conditions within the project area. Therefore, there are no anticipated impacts on water quality for the No Action Alternative.

3.3.5.2 Proposed Action

The Proposed Action would abandon and replace existing pipelines. There would be no new discharges, no changes to existing discharges or other improvements, which may change the water quality in the project area. The HCIC system would continue to operate an enclosed distribution system. Therefore, the Proposed Action would not have an impact on the water quality within the project area.

3.3.6 System Operations

The HCIC system is comprised of 63 miles of pressurized gravity fed pipe. The elevation drop across the distribution system is approximately 650 feet. To offset the pressure increases, a series of 12 pressure reducing valves are located throughout the system. The system consists of concrete cyclinder, asbestos cement, ductile iron, PVC, HDPE, galvanized steel and other plastic pipe. The pipes range in size from 1 to 30-inches-in-diameter. Much of the asbestos cement pipe is over 55 years old, well past its useful life. Many of the main secondary delivery pipelines are located within the backyards of residential properties making it difficult to detect leaks and service the pipelines.

3.3.6.1 No Action

Under the No Action Alternative, the HCIC system would continue to operate under its current conditions. Water losses from the deteriorating pipelines would continue and would likely increase as the system continues to age. Access to private properties for maintenance of the pipelines would continue to hinder the ability of the HCIC staff to detect leaks and repair the system. Shortages to the water supply are anticipated to increase as the system ages. Therefore, the No Action Alternative would have a long-term negative impact to the HCIC systems operations.

3.3.6.2 Proposed Action

By replacing the deteriorating water lines, the Proposed Action would greatly reduce the maintenance required to operate the HCIC system. Abandoning the existing pipelines that run through private property would allow for greater ease of access to the system when maintenance is required. The Proposed Action is also anticipated to reduce the water loss by approximately 390 acre-feet annually (HCIC 2016). The placement of the new valves and water meters would also increase the efficiency of the system. The Proposed Action would, therefore, have a long-term beneficial impact on the operation of the HCIC system.

3.3.7 Health, Safety, Air Quality, and Noise

There are no public health concerns in the project area. Public safety facilities in the area include the Kaysville Fire Department, located at 175 South Main Street,

and the Kaysville Police Department, located at 80 North Main Street. These public safety facilities are approximately 0.90 miles west-northwest of the project area.

The Environmental Protection Agency (EPA) and the Utah Division of Air Quality (UDAQ) regulate air quality standards in the State of Utah. The National Ambient Air Quality Standards (NAAQS) established by the EPA under the Clean Air Act (CAA) specify levels of seven criteria air pollutants: carbon monoxide, particulate matter (PM 10 and PM 2.5), ozone, sulfur dioxide, lead, and nitrogen. The project area is located in an area of nonattainment for PM 2.5 (EPA 2015). A PM 2.5 State Implementation Plan (SIP) for the Salt Lake City, UT Nonattainment Area (which includes the Davis County airshed) was approved in December 2014.

Ambient noise in the project area is correlated to the land uses in the area. Public transportation facilities in the area including local roadways, Interstate 15 (I-15) and State Route (SR-89) are likely the sources of noise in the project area. The limited agricultural uses in the area also produce noise through the use of farming equipment. Kaysville City and Fruit Heights City have local noise ordinances, which limit the amount of sustained noise that is allowable in the residential areas.

3.3.7.1 No Action

The No Action Alternative would have no effect on health, public safety, air quality or noise within the project area.

3.3.7.2 Proposed Action

The Proposed Action would not create any public health concerns. Public safety facilities in the project area would not be impacted by the Proposed Action. Service from the fire station and police department would not be impacted by construction activities.

There would be no long-term impacts to air quality from the Proposed Action. Construction activities have the potential to temporarily impact air quality through the use of construction equipment and the increase of dust from excavation. The Contractor would be required to follow all guidelines specified in the PM 2.5 SIP to reduce potential, short-term construction impact to local air quality. A dust mitigation plan would be required prior to the commencement of construction activities.

There would be no long-term increases to the ambient noise levels from the implementation of the proposed project actions. Noise from construction activities may temporarily increase overall noise levels in the project area; however, project-related construction noise would not be expected to supersede existing noise levels from regular traffic and existing land uses within the project area. Construction noise impacts would be mitigated by using Best Management Practices (BMPs), such as equipment muffler requirements and work-hour limits. The Proposed Action would not have any long-term air quality or noise impacts.

3.3.8 Prime and Unique Farmlands

A review of the NRCS's Web Soil Survey indicates that there are areas of farmland of unique importance, farmland of statewide importance and land that would be considered prime farmland if irrigated in the project area (Appendix C. Farmland Classification Maps). However, all of this land is developed with residential and commercial uses. No farmland would be impacted or converted to nonagricultural uses.

3.3.8.1 No Action

The No Action Alternative would have no effect on farmlands within the project area.

3.3.8.2 Proposed Action

While the NRCS Web Soil Survey indicates that there are areas within the project area that contain soils that may be classified as prime, unique, or statewide important farmlands, all of these areas are currently residential and commercial land uses. Furthermore, the Proposed Action would not convert existing farmland into nonagricultural uses. Therefore, the Proposed Action would have no effect on farmlands within the project area.

3.3.9 Floodplains

Executive Order 11988: Floodplain Management (E.O. 11988) (May 24, 1977) established Federal policy for each agency to take action to reduce the risk of flood loss. The E.O. 11988 defines a floodplain as lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year. Encroachment onto floodplains can reduce the flood-carrying capacity of the floodplain and extend the flooding hazard beyond the encroachment area.

According to the Flood Insurance Rate Map (FIRM), Community Panels 49011C0243E and 49011C0239E, the project is located outside an active floodplain (Appendix D. FIRM Map).

3.3.9.1 No Action

Under the No Action Alternative, the existing conditions of the project area would be maintained and there would be no structures or increase to impervious surface. Therefore, there would no effect to the floodplain or the potential for flooding under the No Action Alternative.

3.3.9.2 Proposed Action

The project area is not located in an active floodplain and the Proposed Action would not create any structures or increase the impervious surface within the project area. Therefore, the Proposed Action would have no effect on the potential for flooding in the project area.

3.3.10 Wetlands, Riparian, Noxious Weeds, and Existing Vegetation

3.3.10.1 Wetlands and Riparian Vegetation

The majority of the hydrology of the area is derived from irrigation waters that are drawn from the Weber River and from several creeks along the Wasatch Front. Groundwater, primarily from the Delta Aquifer, is used to supplement water sources within the Cities of Kaysville and Fruit Heights.

The National Wetlands Inventory (NWI) Maps were reviewed and a site visit was performed by a qualified wetland specialist to evaluate the potential for project-related impacts to wetlands (Appendix E. Wetland Resources). The site visit determined that there are no wetlands or areas that contain riparian vegetation in the project area. There are narrow riparian corridors located outside of the project area along Haight Creek, Bair Creek, and two small, unnamed streams. Bair Creek has the widest riparian corridor near the project area, generally 130 to 200-feet in width, though it is quite limited compared to natural systems due to intense encroachment by urban development along its entire length within the project area.

With the exception of the grassy staging areas, all of the proposed construction areas occur within the paved surface streets of Kaysville and Fruit Heights. It is possible in some instances that very small areas of curb and gutter, and possibly parts of the parking strips, may also be affected by the proposed project actions. However, these areas are located in landscaped, residential developments.

3.3.10.2 Noxious Weeds

There is very little vegetation in the project area. Noxious weeds and nonnative species that do exist in the project area are found in highly disturbed areas such as adjacent to the roadways. Noxious weeds present in the project area include Scotch thistle (*Onoprodum acanthium*) and spotted knapweed (*Centaurea maculosa*).

3.3.10.3 Upland Vegetation

The majority of the project area is located within existing roadway rights-of-way and therefore does not contain any vegetation. The rest of the project area is located in landscaped park strips. Therefore, very limited amounts, if any, natural upland vegetation exists in the project area.

3.3.10.4 No Action

The No Action Alternative would have no effect on wetlands, riparian vegetation, noxious weeds or upland vegetation within the project area.

3.3.10.5 Proposed Action

There are several narrow riparian corridors located adjacent to the project area that are associated with local creeks. These corridors are outside of the proposed project disturbance area and thus would not be affected by the Proposed Action. There are no wetlands within the project disturbance area. The Proposed Action

would therefore have no impact on wetlands or riparian vegetation. The BMPs would be in place during construction to reduce the likelihood of spreading or introducing noxious weeds. After any surface disturbance, proper rehabilitation procedures would be implemented to prevent infestation of invasive or noxious weed species.

3.3.11 Fish and Wildlife Resources

Fish and wildlife resources in the general vicinity of the project area are limited due to the developed residential community, local roadways and large transportation resources such as I-15 and SR-89. Habitat within the project area can be characterized as disturbed, since most of the area does not contain natural, undisturbed or unaltered habitat.

3.3.11.1 Fish

There are no natural waterways or other fish habitat within the project area.

3.3.11.2 Birds

Bird species that use the project area are those that are most-acclimated to urban life, such as: California quail (*Callipepla californica*), American kestrel (*Falco sparverius*), American robin (*Turdus migratorius*), European starling (*Sturnus vulgaris*) and house sparrow (*Passer domesticus*).

3.3.11.3 Mammals

Mammal species that use the project area are those that are most-acclimated to urban life, such as: striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*) and mule deer (*Odocoileus hemionus*). There are no known established corridors, wintering, or breeding areas for large mammals within the project area.

3.3.11.4 No Action

Under the No Action Alternative, the limited habitat in the project area and the wildlife species that may be present would remain in current conditions, experiencing no predictable gains or losses from the continued operation and maintenance of the HCIC's current distribution system.

3.3.11.5 Proposed Action

Under the Proposed Action, all construction activities and other ground disturbances would occur within the existing easement, mostly within paved streets and gravel shoulders. Only minor disturbances to herbaceous landscaping in the parking strip areas, especially around valve replacement locations, are anticipated. Any staging of materials would occur either within the roadway or within the identified staging areas. Any vegetated areas disturbed by construction activities would be contoured, replanted, and reseeded, which would assist in the reestablishment of the minimal habitat impacted during construction. Effects to raptors and other avian species may include minor, short-term and localized disturbance related to construction noise, with no long-term effects after construction. The creeks located outside of and adjacent to the project area would

not be impacted by the Proposed Action. Therefore, there would be no long-term impacts to fish and wildlife resources.

3.3.12 Threatened, Endangered, and Sensitive Species

The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1543) protects Federally listed endangered, threatened, proposed, and candidate plant and animal species and their critical habitats. Candidate species are those for which the U.S. Fish and Wildlife Service (USFWS) has sufficient data to list as threatened or endangered, but for which proposed rules have not yet been issued. Threatened species are those that are likely to become endangered in the foreseeable future throughout all or a significant portion of their range. Endangered species are those which USFWS has identified as facing a serious risk of extinction.

An official IPaC report was requested from USFWS on December 13, 2016, (see Appendix F). Yellow-billed cuckoo (*Coccyzus americanus*) was the only species identified in the IPaC report with potential to occur in the project area. The yellow-billed cuckoo is an avian species that has a yellow lower mandible. It has rufous wings that contrast against the gray-brown wing coverts and upperparts. The underparts are white and have large spots on a long black undertail (Alsop 2001). It is a neotropical migrant, which winters in South America and summers in the western states. Its incubation and nestling period is the shortest of any known bird because it is one of the last migrants to arrive in North America for the rearing season (Ehrlich et al. 1992). Yellow-billed cuckoos are considered a riparian obligate and are usually found in large tracts of cottonwood and willow habitats with dense sub-canopies (below 33 feet) (Parrish et al. 1999). Dense understory foliage is an important factor for nest site selection, while cottonwood trees are important foraging habitat (Laymon et al. 1993).

Consultation with the Utah Division of Wildlife Resources (UDWR) was also performed to obtain additional information on ESA species and species of special concern in the vicinity of the project area. The UDWR identified five species from the Utah Sensitive Species List, three of which were recorded within a ½-mile radius of the project area and two of which were recorded within a 2-mile radius of the project area.

In addition to utilizing the regulatory agency resources identified in the following sections, site visits were conducted by a qualified biologist in December 2015 and August 2016. The biological evaluation for the project is located in Appendix F. Table 3-3 details the ESA listed species and State Sensitive Species that have the potential to occur in the project area.

Table 3-3
Species List

Common Name	Scientific Name	Species Status	Suitable Habitat in Project Area	Effect Determination
Yellow-billed Cuckoo	*Coccyzus americanus*	ESA listed - threatened	No	No Effect
American White Pelican	*Pelecanus erythrorhynchos*	State Sensitive	No	No Effect
Bobolink	*Dolichonyx oryzivorus*	State Sensitive	No	No Effect
Bonneville Cutthroat Trout	*Oncorhynchus clarki utah*	State Sensitive	No	No Effect
Lewis's Woodpecker	*Melanerpes lewis*	State Sensitive	No	No Effect
Short-eared Owl	*Asio flammeus*	State Sensitive	No	No Effect

3.3.12.1 No Action

The No Action Alternative would have no effect on Federally-listed species or State Sensitive Species.

3.3.12.2 Proposed Action

The Proposed Action would have no effect on the one Federally-listed species, the yellow-billed cuckoo, nor on the five State Species of Concern (Table 3-3 Species List). The following sections provide explanations for the effect determinations for each special status species. Additional details on each species is located in Appendix F.

Yellow-billed Cuckoo

The project area generally lacks dense sub-canopies of cottonwoods and willows, which would be considered suitable habitat. Due to the lack of suitable habitat and lack of known occurrences in the project area, the Proposed Action would have no effect on the yellow-billed cuckoo.

American White Pelican

The project area does not contain suitable foraging habitat for the American white pelican, as these very large birds would not attempt to forage in the small forested streams located near the project area. Based on the lack of foraging habitat, the Proposed Action would have no effect on the American white pelican.

Bobolink

The project area does not contain wet meadows or marshes, the preferred foraging and nesting habitat for the bobolink. Based on lack of suitable habitat, the Proposed Action would have no effect on the bobolink.

Bonneville Cutthroat Trout

There are no fish in the project area. The small urban-encroached creeks located outside of and adjacent to the project area do not contain Bonneville cutthroat trout habitat. Thus, the Proposed Action would have no effect on Bonneville cutthroat trout or its habitat.

Lewis's Woodpecker

The narrow riparian corridors located outside of and adjacent to the project area lack the stratified understory to support the insect prey preferred by the Lewis's woodpecker. Based on the lack of suitable habitat for the preferred insect prey of the Lewis's woodpecker, the Proposed Action would have no effect on the species.

Short-eared Owl

The project area does not contain suitable nesting habitat for the short-eared owl. The project area may present limited foraging habitat in the open fields and landscaped areas. These areas may experience limited disturbance during construction. Thus, based on the lack of suitable habitat within the project area, the Proposed Action would have no effect on the short-eared owl.

3.3.13 Recreation Resources

There are several public parks and a public golf course (Davis Park Golf Course) located adjacent to the project area. Construction activities would be limited to rights-of-way adjacent to, but not within, the boundaries of any recreation resource.

3.3.13.1 No Action

The No Action Alternative would have no effect on recreation resources.

3.3.13.2 Proposed Action

The Proposed Action would be limited to roadway rights-of-way and would not take place on the recreation properties. Access to recreation facilities would be maintained throughout construction. Thus, there would be no effects on recreation resources from the Proposed Action.

3.3.14 Socioeconomics

According to the State of Utah's Office of Management and Budget, Davis County is the third fastest growing county in the State (State of Utah 2012). The population in the cities of Fruit Heights and Kaysville are anticipated to grow in the next 30 years by 33 percent and 36 percent, respectively. Approximately 16 percent of Davis County population identifies as a racial minority (Utah Economic Council 2017). The 2010 U.S. Census indicates that the median

household income in Davis County is $72,016 and that 6.7 percent of Davis County residents live below the poverty level (U.S. Census 2010). The most common jobs held by Davis County residents include administrative, management, sales, production and business/financial operations.

3.3.14.1 No Action

The existing socioeconomic conditions are anticipated to continue under the No Action Alternative. The existing inefficiencies and maintenance concerns along HCIC system are expected to increase as the system ages and would likely lead to increased water shortfalls during the irrigation season. These conditions would have a negative impact on the socioeconomics in the project area, especially agricultural activities, by making it more difficult for HCIC to meet water users' demands. The No Action Alternative would likely have a negative impact on the socioeconomics of the project area.

3.3.14.2 Proposed Action

The Proposed Action would have no negative impact on the socioeconomic resources in the project area. The Proposed Action would not require the relocation of any residences or businesses and is not anticipated to put a strain on the local workforce, businesses or other resources. The Proposed Action may have a minor long-term beneficial impact on agricultural activities in the project area by improving the efficiency of the HCIC system. These improvements would help the HCIC meet the demands of the water users and potentially extend the irrigation season.

3.3.15 Access and Transportation

Transportation resources near the project area include I-15, SR-89, and numerous county and local roads. The majority of the project area is located within the existing easements on local roadways.

3.3.15.1 No Action

The No Action Alternative would have no effect on access or transportation in the project area.

3.3.15.2 Proposed Action

Under the Proposed Action, the majority of the construction activities would take place along local roadway. Minor delays along local roadways would be anticipated during construction. There would be no lane closures or full closures of roadways. Minor effects to access points along the roadways may occur as construction activities take place. There would be no permanent access closures. Short-term construction effects to accesses would be coordinated with the adjacent property owners before and during construction.

3.4 Indian Trust Assets

Indian Trust Assets are legal interests in property held in trust by the United States for Federally recognized Indian Tribes or Indian individuals. Assets can be real property, physical assets, or intangible property rights, such as lands, minerals, hunting and fishing rights, and water rights. The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to such tribes or individuals by treaties, statutes, and executive orders. These rights are sometimes further interpreted through court decisions and regulations. This trust responsibility requires that all Federal agencies take all actions reasonably necessary to protect trust assets. Reclamation carries out its activities in a manner which protects these assets and avoids adverse effects when possible. When effects cannot be avoided, Reclamation would provide appropriate mitigation or compensation. There are no known Indian Trust Assets in or adjacent to the project area. Implementation of the Proposed Action would have no foreseeable negative effects on Indian Trust Assets.

3.5 Environmental Justice

Executive Order 12898, established Environmental Justice as a Federal agency priority to ensure that minority and low-income groups are not disproportionately affected by Federal actions. Information obtained from U.S. Census Bureau's American Community Survey 2015, indicates that approximately 9.5 percent of people living in the cities of Fruit Heights and Kaysville identify as a racial minority, and approximately 7 percent of households had income below the poverty level (U.S. Census 2015). This information, combined with the socioeconomic information detailed in Section 3.3.14 of this EA, indicates that there is the potential for environmental justice population to exist in or near the project area.

Implementation of the Proposed Action would not disproportionately (unequally) affect any low-income or minority communities within the project area. The reason for this is that the proposed project would not involve major facility construction, relocation of residents or businesses, the creation of any health hazards, the generation of hazardous waste, property takings, or substantial economic impacts. The Proposed Action would therefore have no adverse human health or environmental effects on minority and low-income populations.

3.6 Cumulative Effects

In addition to project-specific impacts, Reclamation analyzed the potential for significant cumulative impacts to resources affected by the project and by other past, present, and reasonably foreseeable activities within the watershed. According to the Council on Environmental Quality's regulations for implementing NEPA (50 CFR §1508.7), a "cumulative impact" is an impact on

the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. It focuses on whether the Proposed Action, considered together with any known or reasonably foreseeable actions by Reclamation, other Federal or State agencies, or some other entity combined to cause an effect.

Based on Reclamation resource specialists' review of the Proposed Action, Reclamation has determined that this action would not have a significant adverse cumulative effect on any resources.

3.7 Summary of Environmental Effects

Table 3-4 summarizes environmental effects under the No Action and the Proposed Actions.

Table 3-4
Summary of Environmental Effects

Project Resource	No Action	Proposed Action
Geology and Soils Resources	Potential long-term negative impacts for water seepage on erosion and stability of soils.	No Effect
Cultural Resources	No Effect	No Effect
Paleontological Resources	No Effect	No Effect
Hydrology	Potential minor long-term negative impact	Long-term beneficial impact
Water Quality	No Effect	No Effect
Health, Safety, Air Quality and Noise	No Effect	Short-term increases in noise would be anticipated during periods of active construction. Short-term impacts to air quality from construction activities. Mitigate with dust implementation plan and following PM 2.5 SIP guidelines.

Project Resource	No Action	Proposed Action
Prime, Unique, and Statewide Important Farmland	No Effect	No Effect
Floodplains	No Effect	No Effect
Wetland, Riparian, Noxious Weeds, and Upland Resources	No Effect	No Effect
Fish and Wildlife Resources	No Effect	No Effect
Threatened and Endangered Species, Sensitive Species	No Effect	No Effect
Recreation Resources	No Effect	No Effect
Socioeconomics	No Effect	No Effect
Access and Transportation	No Effect	No Effect
Indian Trust Assets	No Effect	No Effect
Environmental Justice	No Effect	No Effect
Cumulative Effects	No Effect	No Effect

Chapter 4 Environmental Commitments

Environmental Commitments, along with the Minimization Measures identified in Section 2.5 have been developed to lessen the potential adverse effects of the Proposed Action.

4.1 Environmental Commitments

The following environmental commitments will be implemented as an integral part of the Proposed Action

1. **Standard Reclamation Best Management Practices** - Standard Reclamation BMPs will be applied during construction activities to minimize environmental effects and will be implemented during construction, and included in construction specifications. Such practices and specifications include sections in the present EA on public safety, dust abatement, air pollution, noise abatement, water pollution abatement, archaeological and historical resources, vegetation, and fish and wildlife. Excavated material and construction debris may not be wasted in any stream or river channel in flowing waters. This includes material such as grease, oil, joint coating, or any other possible pollutant. Excess materials must be wasted at a Reclamation-approved upland site, well away from any channel. Construction materials, bedding material, excavation material, etc. may not be stockpiled in riparian, wetland, or water channel areas. Machinery must be fueled and properly cleaned of dirt, weeds, organisms, or any other possibly contaminating substances offsite prior to construction.

2. **Additional Analyses** - If the Proposed Action were to change significantly from that described in this EA because of additional or new information, or if work areas beyond those outlined in this analysis are required outside the defined project construction area, additional environmental analyses may be necessary.

3. **UPDES Permit** - A UPDES Permit will be required from the State of Utah for construction activities which disturb more than one acre of land. Appropriate measures will be taken to ensure that construction related sediments will not enter streams either during or after construction.

4. **Fugitive Dust Control Permit** - The UDAQ regulates fugitive dust from construction sites, requiring compliance with rules for sites disturbing

greater than ¼ of an acre. Utah Administrative Code R307-205-5, requires steps be taken to minimize fugitive dust from construction activities. Sensitive receptors include those individuals working at the site or motorists that could be affected by changes in air quality due to emissions from the construction activity.

5. **Cultural Resources** - In the case that any cultural resources, either on the surface or subsurface, are discovered during construction, Reclamation's Provo Area Office archeologist shall be notified and construction in the area of the inadvertent discovery will cease until an assessment of the resource and recommendations for further work can be made by a professional archeologist.

6. **Human Remains** - Any person who knows or has reason to know that he/she has inadvertently discovered possible human remains on Federal land, he/she must provide immediate telephone notification of the discovery to Reclamation's Provo Area Office archaeologist. Work will stop until the proper authorities are able to assess the situation onsite. This action will promptly be followed by written confirmation to the responsible Federal agency official, with respect to Federal lands. The Utah SHPO and interested Native American Tribal representatives will be promptly notified. Consultation will begin immediately. This requirement is prescribed under the Native American Graves Protection and Repatriation Act (43 CFR Part 10); and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470).

7. **Paleontological Resources** - Should vertebrate fossils be encountered by the proponent during ground disturbing actions, construction must be suspended until a qualified paleontologist can be contacted to assess the find.

8. **Wildlife Resources** –

    a. **Migratory Bird Protection**

        i. Perform any ground-disturbing activities or vegetation treatments before migratory birds begin nesting or after all young have fledged from the nest.

        ii. If activities must be scheduled to start during the migratory bird breeding season, take appropriate steps to prevent migratory birds from establishing nests in the project area. These steps could include covering equipment and structures and use of various excluders (e.g., noise). Prior to nesting, birds can be harassed to prevent them from nesting on the site.

iii. If activities must be scheduled during the migratory bird breeding season, a site-specific survey for nesting would be conducted prior to groundbreaking activities or vegetation treatments. Established nests with eggs or young cannot be moved, and the birds cannot be harassed (see b., above), until all young have fledged and are capable of leaving the nest site.

iv. If nesting birds are found during the survey, appropriate spatial buffers should be established around nests. Vegetation treatments or ground-disturbing activities within the buffer areas should be postponed until the birds have fledged the nest. Confirmation that all young have fledged should be made by a qualified wildlife biologist.

b. **Raptor Protection.** Raptor protection measures will be implemented to provide full compliance with environmental laws. Raptor surveys will be developed using the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (Romin and Muck 2002), to ensure that the proposed project will avoid adverse impacts to raptors, including bald and golden eagles. Locations of existing raptor nests and eagle roosting areas will be identified prior to the initiation of project activities. Appropriate spatial buffer zones of inactivity will be established during breeding, nesting, and roosting periods. Arrival at nesting sites can occur as early as December for certain raptor species. Nesting and fledging can continue through August. Wintering bald eagles may roost from November through March.

9. **Previously Disturbed Areas** - Construction activities will be confined to previously disturbed areas where possible for such activities as work, staging, storage, waste areas, and vehicle and equipment parking areas. Vegetation disturbance will be minimized as much as possible.

10. **Public Access** - Construction sites will be closed to public access. Temporary fencing, along with signs, will be installed to prevent public access. Reclamation will coordinate with landowners or those holding special permits and other authorized parties regarding access to or through the project area.

11. **Disturbed Areas** - All disturbed areas resulting from the project will be smoothed, shaped, contoured, and rehabilitated to as near the pre-project construction condition as practicable. After completion of the construction and restoration activities, disturbed areas will be seeded at appropriate times with weed-free, native seed mixes having a variety of appropriate species (especially woody species where feasible) to help hold the soil around structures, prevent excessive erosion, and to help maintain

other riverine and riparian functions. The composition of seed mixes will be coordinated with wildlife habitat specialists and Reclamation biologists. Weed control on all disturbed areas will be required. Successful revegetation efforts must be monitored and reported to Reclamation, along with photos of the completed project.

Chapter 5 Consultation and Coordination

5.1 Introduction

This chapter details consultation and coordination between Reclamation and other Federal, State, and local government agencies, Native American Tribes, and the public during the preparation of this EA. Compliance with NEPA is a Federal responsibility that involves the participation of all of these entities in the planning process. The NEPA requires full disclosure about major actions taken by Federal agencies and accompanying alternatives, impacts, and potential mitigation of impacts. Table 5-1 contains a list of agencies consulted during the preparation of this EA.

Table 5-1
Consultation List for EA Preparation

Name	Purpose & Authorities for Consultation or Coordination	Contacts
Utah State Historic Preservation Office	Cultural Resources	Elizabeth Hora-Cook, Cultural Compliance Reviewer
Utah Geological Survey	Paleontological Resources	Martha Hayden, Paleontological Assistant
Utah Division of Air Quality	Air Quality	Patrick Barickman, Environmental Program Manager
Utah Division of Water Quality	Water Quality	Bill Damery, NEPA Program Coordinator
Utah Division of Wildlife Resources	ESA Listed Species and State Sensitive Species	Sarah Lindsey, Utah Natural Heritage Program Database Manager
Weber Basin Water Conservancy District	Water Rights	Sherrie Mobley, Administration Manager

Name	Purpose & Authorities for Consultation or Coordination	Contacts
Haights Creek Irrigation Company	Project Proponent	Norman Whitaker, President
Davis County	Building Permits, County Roadways, Recreation Facilities and Noise Ordinances	Larry Mills, Public Works Director
Fruit Heights City	Local Roadways and Ordinances	Brandon Green, City Manager
Kaysville City	Local Roadways and Ordinances	Shayne Scott, City Manager
Utah State Engineers Office	Stream Alteration Permits and Water Resources	Daren Rasumussen, Project Manager

5.2 Public Involvement

Reclamation's public involvement process presents the public with opportunities to obtain information about a given project and allows interested parties to participate in the project through written comments. The key objective is to create and maintain a well-informed, active public that assists decision makers throughout the process, culminating in the implementation of the Proposed Action.

The public involvement process for this project included meetings with property owners and residents along the proposed project alignment and a presentation at the HCIC annual stockholder meeting on February 18, 2017. A notice of the stockholders meeting and presentation of the Proposed Action was mailed to all HCIC shareholders (approximately 3,800 shareholders) prior to the February 17, 2017, meeting. No comments on Proposed Action were received during the stockholders meeting.

The draft EA will be sent to interested agencies and members of the public in July 2017. A public open house will be held on July 25, 2017, to discuss the project and gather public comments on the EA. Any comments received on the Proposed Action will be addressed in this EA after the public comment period has ended.

5.3 Native American Consultation

Reclamation conducted Native American consultation throughout the public involvement process. A consultation letter was sent to the Eastern Shoshone Tribe of the Wind River Reservation, Wyoming, Northwestern Band of Shoshoni Nation, Shoshone-Bannock Tribes of the Fort Hall Reservation, Ute Indian Tribe of the Uintah and Ouray Reservation on May 1, 2017. This consultation was conducted in compliance with 36 CFR 800.2(c)(2) on a government-to-government basis. Through this effort, each tribe is given a reasonable opportunity to identify any concerns about historic properties; to advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; to express their views on the effects of the Proposed Action on such properties; and to participate in the resolution of adverse effects.

5.4 Utah Geological Survey

Since the project takes place in a previously disturbed residential area, in existing roadways and outside of any known sensitive paleontological areas, consultation with Utah Geological Survey (UGS) is not required. Furthermore, the project does not include excavation below existing disturbed areas.

5.5 Utah State Historic Preservation Office

A copy of the Class III cultural resource inventory report and a recommendation of no historic properties affected for the Proposed Action were submitted to SHPO on January 10, 2017. The SHPO concurred with Reclamation's finding of no adverse effect on January 17, 2017 (Appendix B. Cultural Resources).

Chapter 6 Preparers

The following is a list of preparers who participated in the development of the EA. They include environmental summary preparers and Reclamation team members.

Table 6-1
List of Preparers

Name	Title/Position	Contributions
Agency Representatives		
Peter Crookston	Environmental Group Chief, Reclamation Provo Area Office	Project Oversight
Rick Jones	Wildlife Biologist, Reclamation Provo Area Office	Biological Resources
Zachary Nelson	Archaeologist, Reclamation Provo Area Office	Cultural Resources, Paleontological Resources, Indian Trust Assets
Dave Snyder	Fish and Wildlife Biologist, Reclamation Provo Area Office	Biological Resources
Jared Baxter	Fish and Wildlife Biologist, Reclamation Provo Area Office	Biological Resources
Consultants		
Vincent Barthels	Senior Biologist, J-U-B Engineers, Inc.	Biological and Wetland Resources
Sheri Murray Ellis	Owner/Principal Investigator, Certus Environmental Consultants	Cultural Resources
Marti Hoge	Senior Environmental Planner, J-U-B Engineers, Inc.	Environmental Project Manager
Brandon Nielsen, P.E.	Project Engineer, J-U-B Engineers, Inc.	Project Manager
Trent Toler	Biologist, J-U-B Engineers, Inc.	Resource Evaluation

Chapter 7 Acronyms and Abbreviations

Table 7-1
Acronyms and Abbreviations

Acronym/Abbreviations	Meaning
APE	Area of Potential Effect
BIA	Bureau of Indian Affairs
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
E.O.	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
HCIC	Haights Creek Irrigation Company
ITA	Indian Trust Assets
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PM	Particulate Matter
PRPA	Paleontological Resources Preservation Act
Reclamation	U.S. Bureau of Reclamation
SHPO	Utah State Historic Preservation Office
SIP	State Implementation Plan
SWPPP	Storm Water Pollution Prevention Plan
UGS	Utah Geological Service

Acronym/Abbreviations	Meaning
UPDES	Utah Pollution Discharge Elimination System
UDAQ	Utah Division of Air Quality
UDWQ	Utah Division of Water Quality
UDWR	Utah Division of Wildlife Resources
USFWS	U.S. Fish and Wildlife Service
U.S.C	United States Code
USACE	US Army Corps of Engineers
WBWCD	Weber Basin Water Conservancy District

Chapter 8 References

Alsop, F. 2001. *Birds of North America (Western Region).* DK Publishing, Inc. New York, New York.

Bailey, R.G. 1995. Description of the ecoregions of the United States. 2nd ed. rev. and expanded (1st ed. 1980). Misc. Publ. No. 1391 (rev.), Washington, DC: USDA Forest Service.

Environmental Protection Agency (EPA). 2015. The Green Book Nonattainment Areas for Criteria Pollutants. Accessed on January 25, 20167 http://www3.epa.gov/airquality/greenbk/index.html.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1992. *Birds in Jeopardy: the Imperiled and Extinct Birds of the United States and Canada, including Hawaii and Puerto Rico.* Stanford University Press, Stanford, California.

HCIC. 2016. Haights Creek Irrigation Company Piping, Metering, and Small Hydro Project. WaterSMART: Water and Energy Efficiency Grants, FY 2016 FOA#R16-FOA-DO-004.

Laymon, S.A. 1993. A reassessment of the taxonomic status of the yellow-billed cuckoo. Western Birds 24:17-28.

National Park Service (NPS). National Wild and Scenic Rivers System. Accessed on January 25, 2017. http//www.rivers.gov.

Natural Resources Conservation Service. Web Soil Survey. Accessed on May 15, 2017. http://websoilsurvey.sc.egov.usda.gov

Parrish, J. R., F. P. Howe, and R. E. Norvell. 1999. Utah Partners in Flight draft conservation strategy. UDWR publication number 99-40. Utah Partners in Flight Program, Utah Division of Wildlife Resources, Salt Lake City.

Romin, L. A., and J. A. Muck. 2002. Utah field office guidelines for raptor protection from human and land use disturbances. USFWS Field Office, Salt Lake City, UT.

State of Utah, Governor's Office of Management and Budget. 2012. Economic Analysis and Demographics. Accessed on May 30, 2017. https://gomb.utah.gov/budget-policy/demographic-economic-analysis/.

Taylor, D.M. 2000. Status of the yellow-billed cuckoo. Western Birds 31:252-254
U.S. Census Bureau. 2010. Data USA: Davis County, Utah. Accessed on May 30, 2017. https://datausa.io/profile/geo/davis-county-ut/#intro.

U.S. Census Bureau. 2015. American Community Survey. Accessed on May 30, 2017. https://www.census.gov/programs-surveys/acs/about.html

U.S. Fish and Wildlife Service (USFWS). 2002. *Utah field Office Guidelines for Raptor Protection from Human and Land Use Disturbances.*

Utah Division of Wildlife Resources (UDWR). Utah Conservation Data Center. Accessed January 25, 2017. http://dwrcdc.nr.utah.gov/ucdc/.

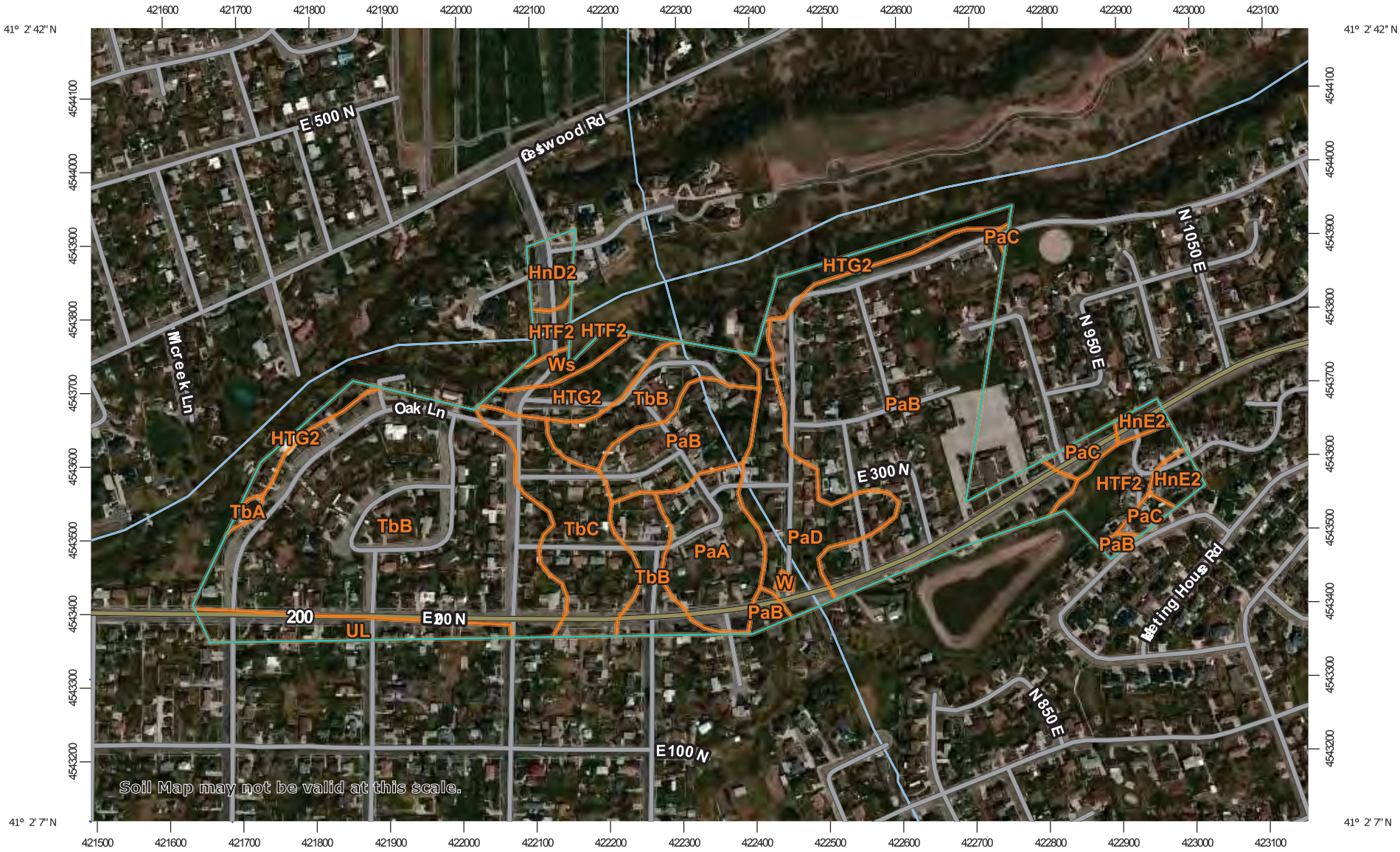
Utah Economic Council. 2017. Economic Report to the Governor. Accessed on May 30, 2017. https://gomb.utah.gov/budget-policy/demographic-economic-analysis/.

U.S. Bureau of Reclamation (Reclamation) 2011. WaterSMART. Accessed February 3, 2017, http://www.usbr.gov/WaterSMART/water.html.

Chapter 9 Appendices

Appendix A. Soil Survey

Soil Map—Davis-Weber Area, Utah
(HCIC - North Section)



Map Scale: 1:7,590 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 350 700 1400 2100

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.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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 10, Sep 9, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

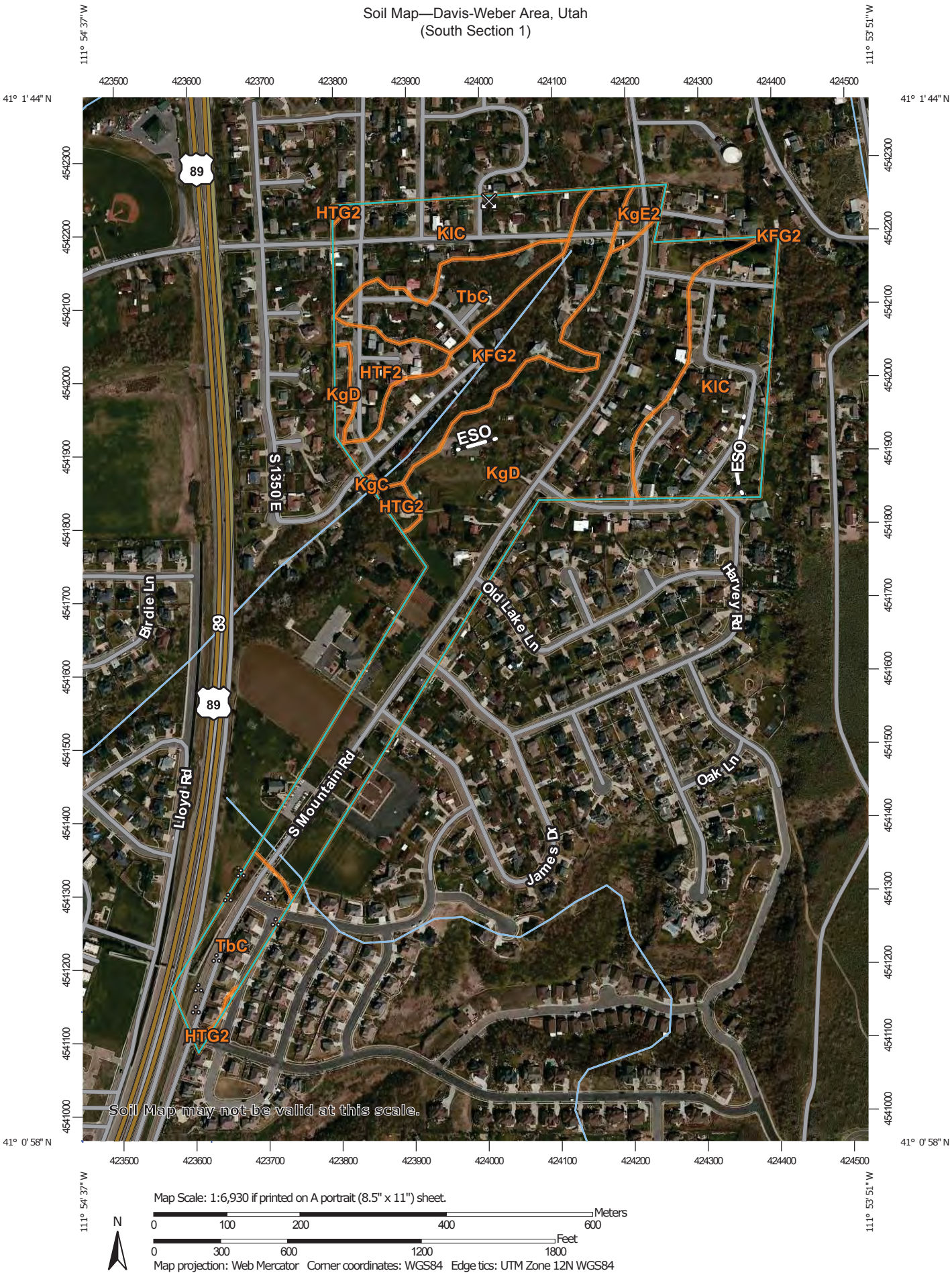
Date(s) aerial images were photographed: Mar 29, 2012—Apr 16, 2012

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

Davis-Weber Area, Utah (UT607)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
HnD2	Hillfield soils, 6 to 10 percent slopes, eroded	1.4	1.3%
HnE2	Hillfield soils, 10 to 20 percent slopes, eroded	1.5	1.4%
HTF2	Hillfield-Timpanogos-Parleys complex, 20 to 30 percent slopes, eroded	4.0	3.7%
HTG2	Hillfield-Timpanogos-Parleys complex, 30 to 60 percent slopes, eroded	6.2	5.7%
PaA	Parleys loam, 0 to 4 percent slopes	6.0	5.5%
PaB	Parleys loam, 1 to 3 percent slopes	33.7	31.0%
PaC	Parleys loam, 3 to 8 percent slopes	1.5	1.4%
PaD	Parleys loam, 6 to 10 percent slopes	7.3	6.7%
TbA	Timpanogos loam, 0 to 1 percent slopes	0.2	0.2%
TbB	Timpanogos loam, 1 to 3 percent slopes	35.3	32.4%
TbC	Timpanogos loam, 3 to 6 percent slopes	7.1	6.5%
UL	Urban land	3.3	3.0%
W	Water	0.1	0.1%
Ws	Woods Cross silty clay loam, 0 to 3 percent slopes	1.2	1.1%
Totals for Area of Interest		**108.9**	**100.0%**

Soil Map—Davis-Weber Area, Utah
(South Section 1)



Map Scale: 1:6,930 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Unit Legend

Davis-Weber Area, Utah (UT607)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
HTF2	Hillfield-Timpanogos-Parleys complex, 20 to 30 percent slopes, eroded	2.9	3.8%
HTG2	Hillfield-Timpanogos-Parleys complex, 30 to 60 percent slopes, eroded	0.8	1.1%
KFG2	Kilburn-Francis association, 30 to 50 percent slopes, eroded	10.3	13.5%
KgC	Kilburn gravelly sandy loam, 3 to 6 percent slopes	0.0	0.1%
KgD	Kilburn gravelly sandy loam, 6 to 10 percent slopes	32.3	42.3%
KgE2	Kilburn gravelly sandy loam, 10 to 20 percent slopes, eroded	0.9	1.2%
KlC	Kilburn cobbly sandy loam, 3 to 10 percent slopes	19.5	25.6%
TbC	Timpanogos loam, 3 to 6 percent slopes	9.5	12.5%
Totals for Area of Interest		**76.4**	**100.0%**

Soil Map—Davis-Weber Area, Utah
(South Section Two)

Map Scale: 1:3,400 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Unit Legend

Davis-Weber Area, Utah (UT607)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Co	Cobbly alluvial land	0.0	0.1%
HTG2	Hillfield-Timpanogos-Parleys complex, 30 to 60 percent slopes, eroded	0.9	21.0%
KgC	Kilburn gravelly sandy loam, 3 to 6 percent slopes	2.6	58.5%
PaA	Parleys loam, 0 to 4 percent slopes	0.9	19.7%
PaB	Parleys loam, 1 to 3 percent slopes	0.0	0.4%
PaC	Parleys loam, 3 to 8 percent slopes	0.0	0.3%
Totals for Area of Interest		**4.4**	**100.0%**

Soil Map—Davis-Weber Area, Utah
(South Section Three)

Map Scale: 1:1,140 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Unit Legend

Davis-Weber Area, Utah (UT607)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
KaD	Kidman fine sandy loam, 6 to 10 percent slopes	0.6	100.0%
Totals for Area of Interest		**0.6**	**100.0%**

Soil Map—Davis-Weber Area, Utah
(West Section One)

Map Scale: 1:2,930 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 40 80 160 240

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Unit Legend

Davis-Weber Area, Utah (UT607)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
KaD	Kidman fine sandy loam, 6 to 10 percent slopes	0.3	6.8%
PaA	Parleys loam, 0 to 4 percent slopes	1.3	34.1%
PaB	Parleys loam, 1 to 3 percent slopes	1.1	29.6%
TbB	Timpanogos loam, 1 to 3 percent slopes	1.1	29.5%
Totals for Area of Interest		**3.7**	**100.0%**

Soil Map—Davis-Weber Area, Utah
(West Section Two)

Map Scale: 1:1,420 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Unit Legend

Davis-Weber Area, Utah (UT607)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
PaA	Parleys loam, 0 to 4 percent slopes	2.2	100.0%
Totals for Area of Interest		**2.2**	**100.0%**

Soil Map—Davis-Weber Area, Utah
(West Section Three)

Map Scale: 1:1,610 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Map Unit Legend

Davis-Weber Area, Utah (UT607)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Ac	Airport silt loam, 0 to 2 percent slopes	2.3	19.3%
WgA	Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes	9.6	80.7%
Totals for Area of Interest		**11.8**	**100.0%**

Appendix B. Cultural Resources

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Julie Fisher
Executive Director
Department of
Heritage & Arts

Utah Division of
State History

Brad Westwood
Director

PRO Official File Copy ORIGINAL
Received
JAN 23 '17

100 635
105
106
600
630

Gen
ENV-3.00
SL0123170G

January 17, 2017

Wayne G. Pullan
Area Manager
Bureau of Reclamation
Provo Area Office
302 East 1860 South
Provo, Utah 84606-7317

RE: Haights Creek Irrigation System Improvements, Davis County, Utah U-15-HY-0932, BOR Project No. PRO-EA-16-016 - WaterSMART Grant

For future correspondence, please reference Case No. 17-0058

Dear Mr. Pullan:

The Utah State Historic Preservation Office received your request for our comment on the above-referenced undertaking on January 10, 2017.

We concur with your determinations of eligibility and effect for this undertaking.

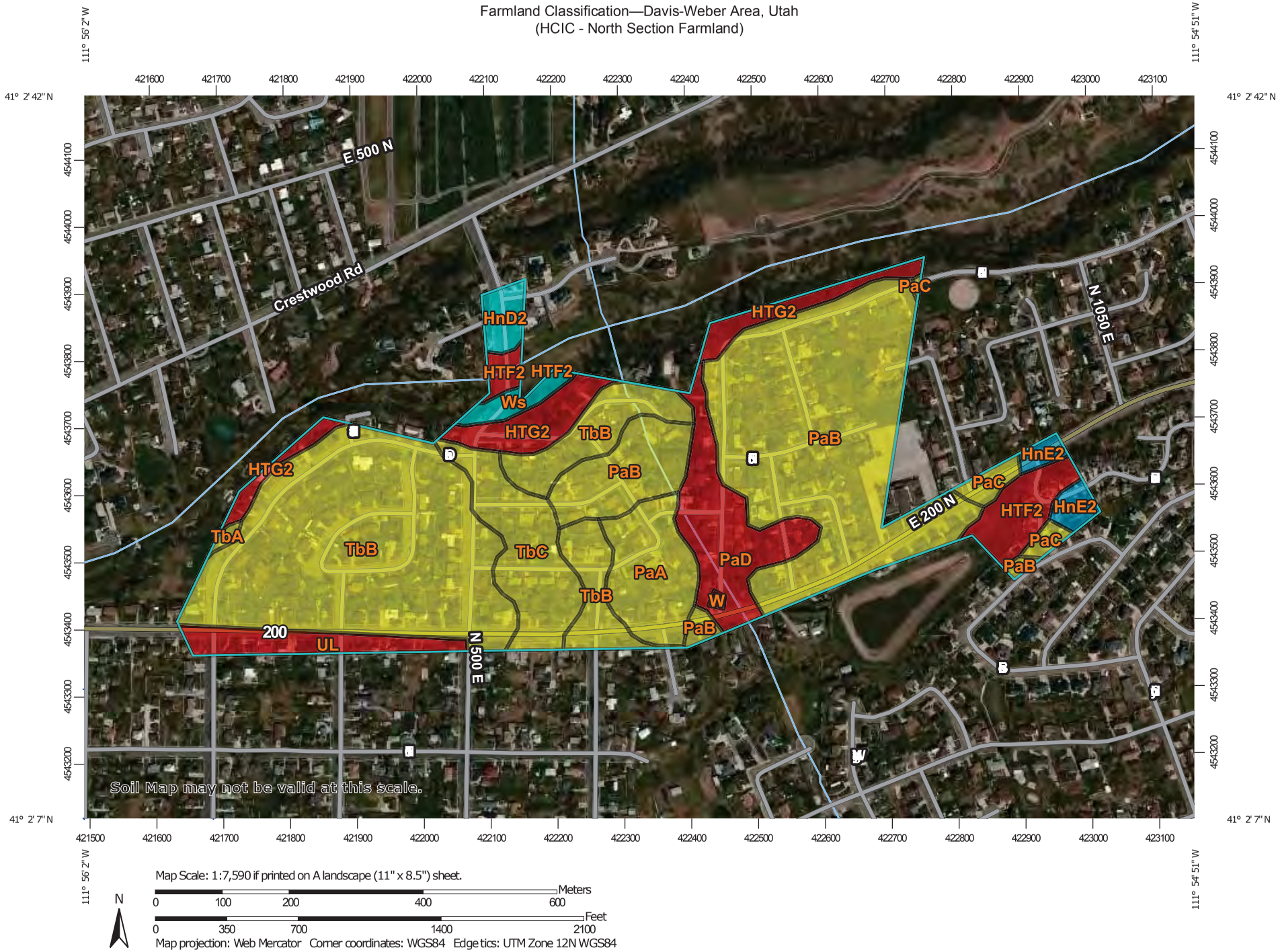
If you have any questions, please contact me at (801) 245-7241 or by email at ehora@utah.gov.

Sincerely,

Elizabeth Hora-Cook (for Chris Merritt)
Cultural Compliance Reviewer

Appendix C. Farmland Classification Maps

Farmland Classification—Davis-Weber Area, Utah
(HCIC - North Section Farmland)



Map Scale: 1:7,590 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 350 700 1400 2100

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 Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Water Features

MAP INFORMATION

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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 10, Sep 9, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 29, 2012—Apr 16, 2012

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.

Farmland Classification

Farmland Classification— Summary by Map Unit — Davis-Weber Area, Utah (UT607)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
HnD2	Hillfield soils, 6 to 10 percent slopes, eroded	Farmland of statewide importance	1.4	1.3%
HnE2	Hillfield soils, 10 to 20 percent slopes, eroded	Farmland of unique importance	1.5	1.4%
HTF2	Hillfield-Timpanogos-Parleys complex, 20 to 30 percent slopes, eroded	Not prime farmland	4.0	3.7%
HTG2	Hillfield-Timpanogos-Parleys complex, 30 to 60 percent slopes, eroded	Not prime farmland	6.2	5.7%
PaA	Parleys loam, 0 to 4 percent slopes	Prime farmland if irrigated	6.0	5.5%
PaB	Parleys loam, 1 to 3 percent slopes	Prime farmland if irrigated	33.7	31.0%
PaC	Parleys loam, 3 to 8 percent slopes	Prime farmland if irrigated	1.5	1.4%
PaD	Parleys loam, 6 to 10 percent slopes	Not prime farmland	7.3	6.7%
TbA	Timpanogos loam, 0 to 1 percent slopes	Prime farmland if irrigated	0.2	0.2%
TbB	Timpanogos loam, 1 to 3 percent slopes	Prime farmland if irrigated	35.3	32.4%
TbC	Timpanogos loam, 3 to 6 percent slopes	Prime farmland if irrigated	7.1	6.5%
UL	Urban land	Not prime farmland	3.3	3.0%
W	Water	Not prime farmland	0.1	0.1%
Ws	Woods Cross silty clay loam, 0 to 3 percent slopes	Farmland of statewide importance	1.2	1.1%
Totals for Area of Interest			**108.9**	**100.0%**

Description

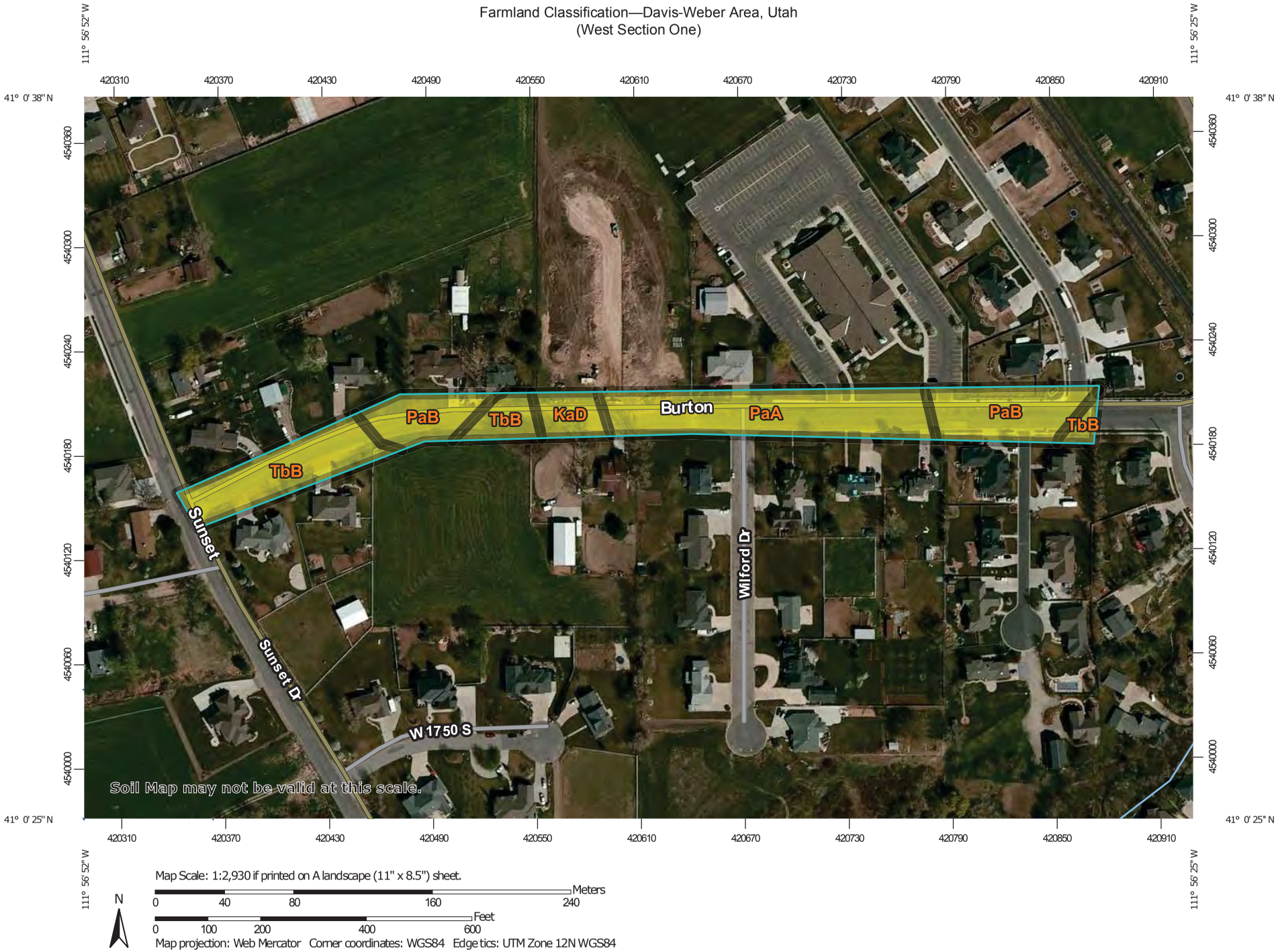
Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Farmland Classification—Davis-Weber Area, Utah
(West Section One)



Map Scale: 1:2,930 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Farmland Classification

Farmland Classification— Summary by Map Unit — Davis-Weber Area, Utah (UT607)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
KaD	Kidman fine sandy loam, 6 to 10 percent slopes	Prime farmland if irrigated	0.3	6.8%
PaA	Parleys loam, 0 to 4 percent slopes	Prime farmland if irrigated	1.3	34.1%
PaB	Parleys loam, 1 to 3 percent slopes	Prime farmland if irrigated	1.1	29.6%
TbB	Timpanogos loam, 1 to 3 percent slopes	Prime farmland if irrigated	1.1	29.5%
Totals for Area of Interest			**3.7**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Map Scale: 1:1,420 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Farmland Classification

Farmland Classification— Summary by Map Unit — Davis-Weber Area, Utah (UT607)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
PaA	Parleys loam, 0 to 4 percent slopes	Prime farmland if irrigated	2.2	100.0%
Totals for Area of Interest			**2.2**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Farmland Classification—Davis-Weber Area, Utah
(West Section Three)

Map Scale: 1:1,610 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Farmland Classification

Farmland Classification— Summary by Map Unit — Davis-Weber Area, Utah (UT607)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Ac	Airport silt loam, 0 to 2 percent slopes	Not prime farmland	2.3	19.3%
WgA	Warm Springs fine sandy loam, saline, sodic, 0 to 1 percent slopes	Not prime farmland	9.6	80.7%
Totals for Area of Interest			**11.8**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower


111° 54' 37" W
111° 53' 51" W
41° 1' 44" N
41° 0' 58" N
423500
423600
423700
423800
423900
424000
424100
424200
424300
424400
424500
4542300
4542200
4542100
4542000
4541900
4541800
4541700
4541600
4541500
4541400
4541300
4541200
4541100
4541000
HTG2
KIC
KgE2
KFG2
TbC
HTF2
KgD
KgC
S 1350 E
S Cherry Ln
Birdie Ln
Lloyd Rd
S Mountain Rd
Harvey Rd
James Dr
Oak Ln
89
Soil Map may not be valid at this scale.
Map Scale: 1:6,930 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 100 200 400 600
Feet
0 300 600 1200 1800
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Farmland Classification

Farmland Classification— Summary by Map Unit — Davis-Weber Area, Utah (UT607)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
HTF2	Hillfield-Timpanogos-Parleys complex, 20 to 30 percent slopes, eroded	Not prime farmland	2.9	3.8%
HTG2	Hillfield-Timpanogos-Parleys complex, 30 to 60 percent slopes, eroded	Not prime farmland	0.8	1.1%
KFG2	Kilburn-Francis association, 30 to 50 percent slopes, eroded	Not prime farmland	10.3	13.5%
KgC	Kilburn gravelly sandy loam, 3 to 6 percent slopes	Prime farmland if irrigated	0.0	0.1%
KgD	Kilburn gravelly sandy loam, 6 to 10 percent slopes	Farmland of unique importance	32.3	42.3%
KgE2	Kilburn gravelly sandy loam, 10 to 20 percent slopes, eroded	Farmland of unique importance	0.9	1.2%
KlC	Kilburn cobbly sandy loam, 3 to 10 percent slopes	Farmland of unique importance	19.5	25.6%
TbC	Timpanogos loam, 3 to 6 percent slopes	Prime farmland if irrigated	9.5	12.5%
Totals for Area of Interest			**76.4**	**100.0%**

Description

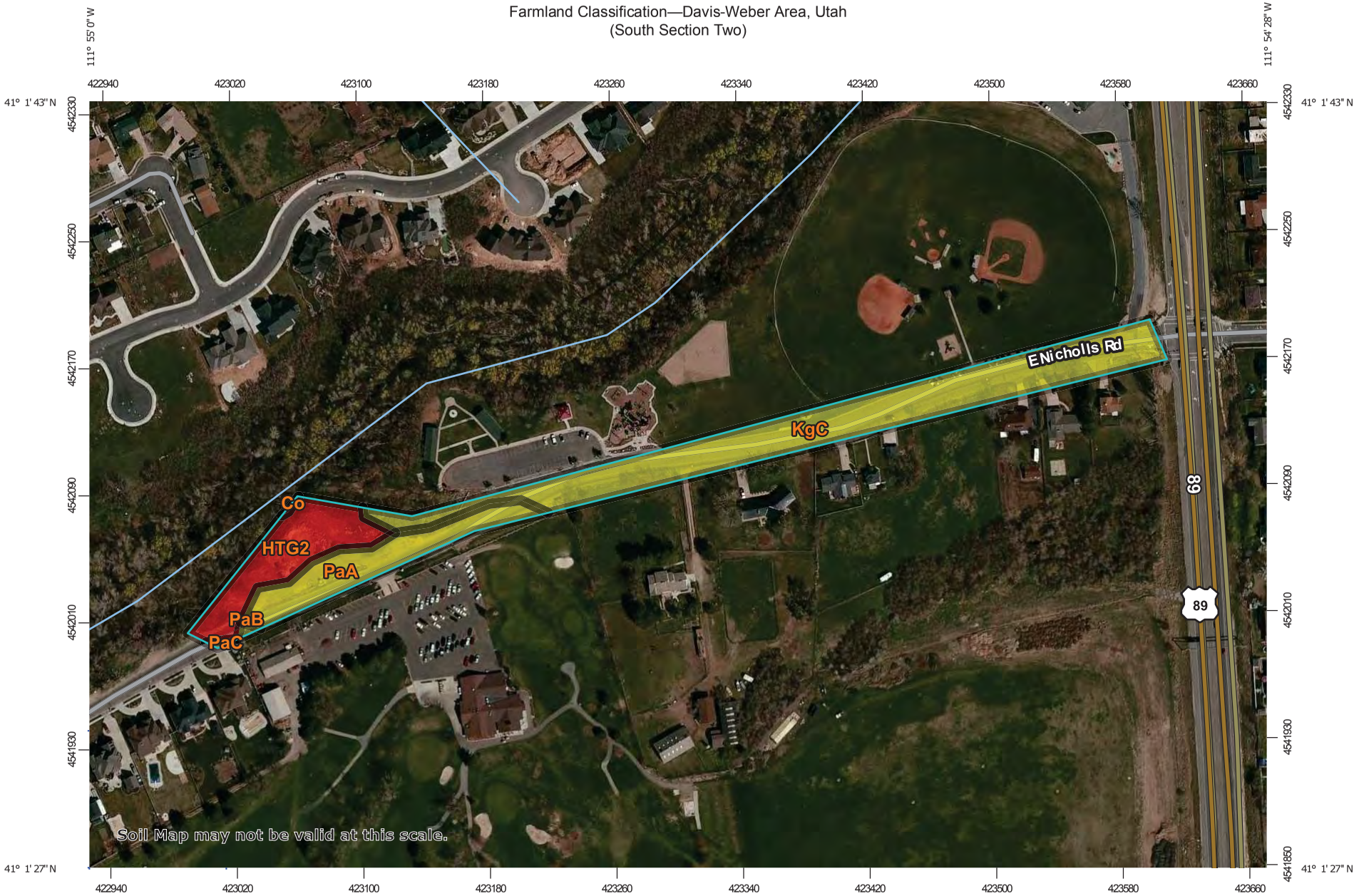
Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Farmland Classification—Davis-Weber Area, Utah
(South Section Two)



Map Scale: 1:3,400 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Farmland Classification

Farmland Classification— Summary by Map Unit — Davis-Weber Area, Utah (UT607)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
Co	Cobbly alluvial land	Not prime farmland	0.0	0.1%
HTG2	Hillfield-Timpanogos-Parleys complex, 30 to 60 percent slopes, eroded	Not prime farmland	0.9	21.0%
KgC	Kilburn gravelly sandy loam, 3 to 6 percent slopes	Prime farmland if irrigated	2.6	58.5%
PaA	Parleys loam, 0 to 4 percent slopes	Prime farmland if irrigated	0.9	19.7%
PaB	Parleys loam, 1 to 3 percent slopes	Prime farmland if irrigated	0.0	0.4%
PaC	Parleys loam, 3 to 8 percent slopes	Prime farmland if irrigated	0.0	0.3%
Totals for Area of Interest			**4.4**	**100.0%**

Description

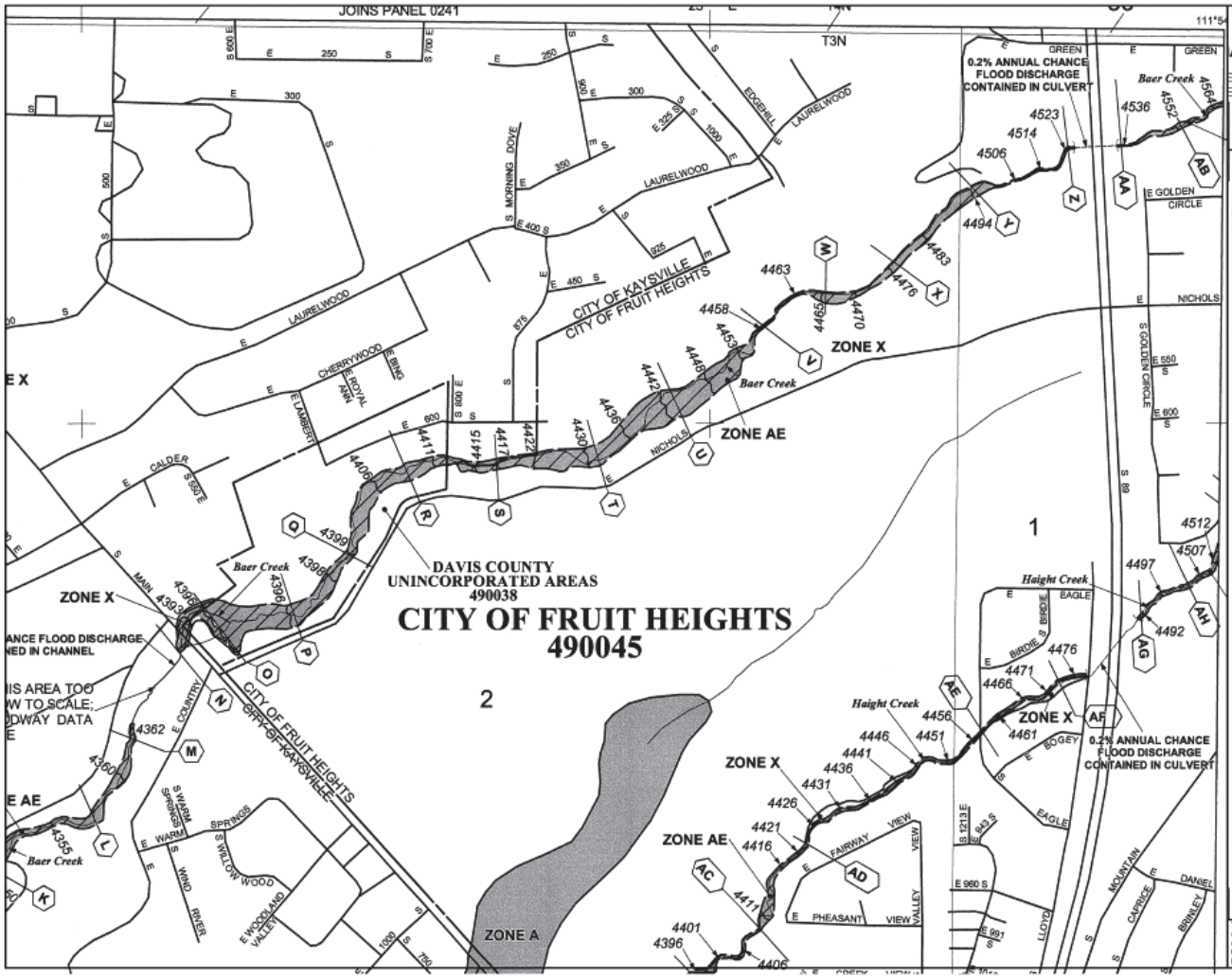
Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix D. FIRM Map



AP SCALE 1" = 500'
500 1000 FEET
METERS

FIRM
FLOOD INSURANCE RATE MAP
DAVIS COUNTY, UTAH
AND INCORPORATED AREAS

PANEL 243 OF 575
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

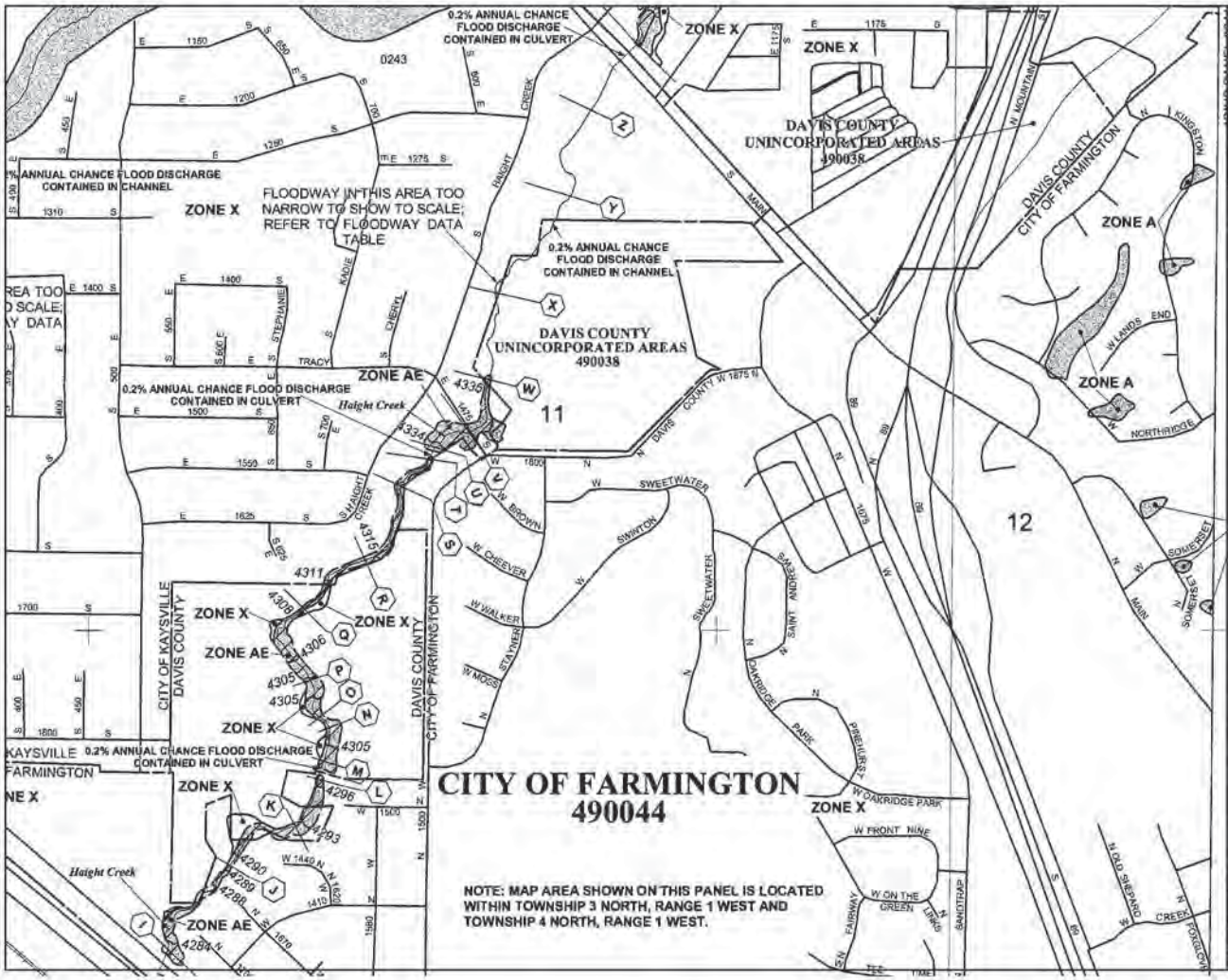
COMMUNITY	NUMBER	PANEL	SUFFIX
DAVIS COUNTY	490038	0243	E
FARMINGTON, CITY OF	490044	0243	E
FRUIT HEIGHTS, CITY OF	490045	0243	E
KAYSVILLE, CITY OF	490046	0243	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
49011C0243E

EFFECTIVE DATE
JUNE 18, 2007

Federal Emergency Management Agency



MAP SCALE 1" = 500'
500 1000 FEET
METERS

FIRM
FLOOD INSURANCE RATE MAP
DAVIS COUNTY, UTAH
AND INCORPORATED AREAS

PANEL 243 OF 575
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

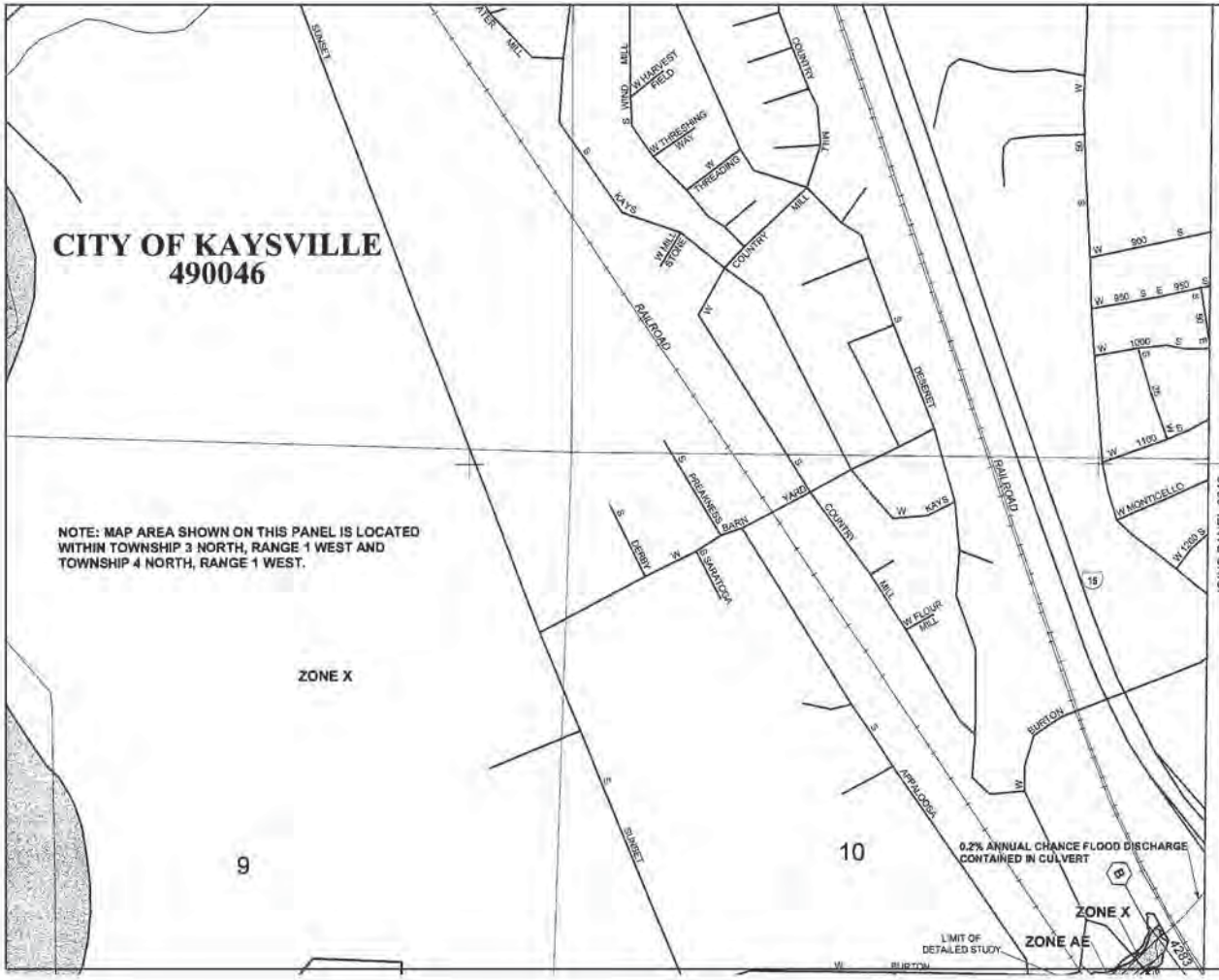
COMMUNITY	NUMBER	PANEL	SUFFIX
DAVIS COUNTY	490038	0243	E
FARMINGTON, CITY OF	490044	0243	E
FRUIT HEIGHTS, CITY OF	490045	0243	E
KAYSVILLE, CITY OF	490045	0243	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
49011C0243E

EFFECTIVE DATE
JUNE 18, 2007

Federal Emergency Management Agency



MAP SCALE 1" = 500'
500 1000 FEET
METERS

FIRM
FLOOD INSURANCE RATE MAP
DAVIS COUNTY, UTAH
AND INCORPORATED AREAS

PANEL 239 OF 575
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
DAVIS COUNTY	490038	0239	D
KAYSVILLE, CITY OF	490046	0239	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
49011C0239E

EFFECTIVE DATE
JUNE 18, 2007

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT OnLine. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix E. Wetland Resources

Date: December 15, 2016

To: Marti Hoge, NEPA Planner, J-U-B Engineers, Inc.

From: Trent Toler, Biologist, J-U-B Engineers, Inc.

Subject: Wetlands Memo for Haights Creek Irrigation Company Project

The Haights Creek Irrigation Company Distribution System Improvements Project is planned for parts of the Haights Creek Irrigation Company's irrigation system in three primary areas within their supply district of Kaysville and Fruit Heights in Davis County, Utah. The work would entail distribution system improvements including new or replacement pipes, valve replacements, and other system repairs. Construction is scheduled to begin in the fall of 2016 (outside of the irrigation season). This memo addresses the assessment of the proposed work locations and temporary staging areas for the potential to impact or otherwise affect any wetlands or other waters of the US.

The project area in Davis County, Utah, was visited in December 2015 and August 2016. All locations for the distribution system improvements and the temporary staging areas necessary for the project construction were surveyed for any potential wetlands or other waters of the U.S. All of the locations for the new pipeline are located within the paved surface streets or the street right-of-ways in Kaysville and Fruit Heights, Utah. It is possible in some instances, very small areas of curb and gutter, and possibly the parts of the parking strips, may also be affected by this project. However, these areas are located in landscaped, residential developments, and no wetlands were observed. A small, 2-foot wide flowing channel, possibly an irrigation ditch but could be a small tributary, is crossed by 500 East in Kaysville, between Twin Creek Circle and Oak Lane. The drainage is conveyed through an approximately 130-foot culvert under the street. However, as work would be contained within the street's right-of-way, no impact to the drainage is anticipated. The three staging areas are located on parcels of land that are currently undeveloped, and those will be discussed further.

North Section Staging Area

The first staging area is located south of 200 North between 900 East and 950 East in Kaysville, Utah. The location is a grassy field, probably an old pasture, located east and above the irrigation reservoir that is also on the property (owned by Haights Creek Irrigation Company). The vegetation is composed of upland pasture grasses such as wheatgrasses (*Thinopyrum* sp. and *Elymus* sp.) and meadow false rye grass (*Schedonorus pratensis*). The property was closely mowed so other upland grasses species are also likely but not identifiable at this time. There was no indication of any wetland plant species or topographical features such as depressions that would suggest the presence of wetlands.

Figure 1. Proposed staging area south of 400 North, Kaysville.

South Section Staging Area

The next staging area is located on the north side of Nicholls Rd and across the street from the Davis Park Golf Course in Fruit Heights, Utah. The proposed staging area appears to be owned and used by Davis County to store materials such as sand, gravel, rock, mulch, old asphalt, and various waste materials. The parcel is completely disturbed with no vegetation other than a few scattered weeds along the edges, and no indication of any potential wetland conditions. This parcel is south of and above Bair Creek and its associated wooded riparian area that runs parallel to Nicholls Rd. The proposed staging area is easily 50 feet in elevation above the creek, and there is a solid 3 to 4 foot berm surrounding the area. If activities are kept within the bermed area and BMPs are deployed and maintained, there should be no impacts to Bair Creek or its riparian area.

Figure 2. Proposed staging area by Davis Park Golf Course, Fruit Heights.

West Section Staging Area

The third proposed staging area is located on the east side of Angel Street, just north of the Jefferson Academy Charter School in Kaysville, Utah. The graded field is likely used as a horse pasture or for alfalfa farming. The parcel contains a mix of upland species, including pasture grass (such as meadow false rye grass) and alfalfa (*Medicago sativa*), along with a variety of upland weedy species such as annual ragweed (*Ambrosia artemisiifolia*), whitetop (*Cardaria draba*), chickory (*Cichorium intybus*), redstem stork's bill (*Erodium cicutarium*), and five-horn smotherweed (*Bassia hyssopifolia*). The parcel is a dry upland and does not contain any wetlands or other water features.

Figure 3. Proposed staging area by Angel Street, Kaysville.

Conclusions

Information gathered from a review of the National Wetland Inventory (NWI) maps and during a site visit performed on December 1, 2015 indicates that there are no wetlands, natural waterways or Waters of the U.S. in the proposed project area. Please note that the final authority for such determinations rests with the regulatory agencies with jurisdiction in the project area.

Appendix F. Biological Resources

BIOLOGICAL RESOURCES EVALUATION OF THE HAIGHTS CREEK IRRIGATION COMPANY WATER CONSERVATION PROJECT

DAVIS COUNTY, UTAH

Prepared for:
United States Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Provo Area Office

Prepared by:
J-U-B Engineering, Inc.
2875 South Decker Dr. Ste. 575
Salt Lake City, UT 84119

Prepared: December 2015
Updated: March 2017

TABLE OF CONTENTS

LIST OF APPENDICES

INTRODUCTION

This biological resources evaluation has been prepared for the U.S. Bureau of Reclamation (Reclamation) as required by Section 7(c) of the Endangered Species Act (ESA), for the proposed Haights Creek Irrigation Company (HCIC) Green Road Piping, Metering and Small Hydro Project. The proposed project is located in Davis County, Utah, Sections 1, 2, 9, and 10, Township 3 North, Range 1 West, and Section 34 to 36, Township 4 North, Range 1 West, Salt Lake Base and Meridian. The objective of this document is to assess the potential environmental impacts of the proposed Haights Creek Irrigation Company Distribution System Improvements Project. This report focuses on federally-listed plant and animal species in accordance with the requirements of Section 7 of the ESA.

Proposed Action

The Proposed Action is the preferred alternative for the proposed project. Under the Proposed Action, HCIC would install approximately 7,000 linear feet of new piping to replace open laterals and deteriorating piping (Appendix A. Project Location Exhibits). The pipe would range from 4 inches to 14 inches in diameter. The proposed piping would allow HCIC to abandon the 55-year-old distribution lines that are currently located within the backyards of many residential lots. The new pipe alignments would be located in existing roadway right-of-way. The project would also install secondary flow meters throughout the system and replace existing valves that are located in roadway right-of-way.

DESCRIPTION OF PROPOSED ACTION

Existing System

Haights Creek Irrigation Company was started in 1899 by local residents to provide irrigation water to the shareholders and owners. The Company owns and operates approximately 63 miles of piping, connections, and valves throughout Kaysville and Fruit Heights to serve 3,700 shareholders (HCI 2015). The Company also owns and operates three storage reservoirs that feed the irrigation system. Periodic upgrades and repairs to the many pipes and valves that constitute this irrigation system are necessary to maintain normal and efficient operation.

Construction Activities and Schedule

The anticipated construction equipment includes: compactors, excavators, backhoes, graders, and dump trucks for hauling materials. The most prevalent construction noise source would come from equipment powered by internal combustion engines (usually diesel). Noise from equipment used on this project would likely peak at approximately 89 decibels (dBA) when measured from a distance of 15 meters (50 feet). To reduce the impact of construction noise, most construction activities would be confined to weekdays between 7:00 a.m. and 7:00 p.m. The proposed project action area is situated near major arterials that receive moderate to heavy traffic. The ambient or background noise for the entire project action area is associated with the truck traffic on existing roads; which correlates to a background sound of approximately 86 dBA (WSDOT 2013).

Best Management Practices (BMPs)

Best Management Practices (BMPs) would be in place to minimize direct, short-term construction impacts. Some of these measures include replanting barren locations (post-construction) with appropriate vegetation and limiting noise/human-induced disturbances.

BMPs are mandatory and would become part of the project design. They would include, but are not limited to the following:

1. Temporary Erosion and Sediment Control (TESC) structures (e.g. silt fences) shall be in place during construction to limit sediment delivery into any adjacent drainage channels.
2. Excavation activities, staging areas, and stock piling areas would occur only within staked limits of the project action area.
3. Temporary construction equipment noise would be minimized by regular inspection and replacement of defective mufflers and parts that do not meet the manufacturer's specifications.
4. Fueling of excavation equipment would be completed within the project action area only after ground surface protection is implemented to facilitate spill mitigation. The fueling truck must utilize drip pans and absorbent cloths during fueling activities. Additionally, the Contractor must have emergency spill equipment onsite at all times and must have a Spill Prevention Plan approved and in place prior to any construction activities. Dump trucks, pickups and other general construction equipment would be fueled offsite at a commercial facility.
5. Noxious weed management, following Bureau of Reclamation's standard operating procedures for invasive weed control, shall be implemented within the project footprint whenever bare ground or vegetation is disturbed.
6. The project action area would be monitored on a regular basis by a designated Construction Site Erosion and Sediment Control Lead (CESCL). The monitoring would consist of observing the TESC structures so that sediment does not reach active drainage channels or storm drains. If any structure fails, it must be replaced immediately. If sediment deposits are observed beyond the control structures following a failure, the sediment must be removed immediately.

PROJECT ACTION AREA

The project action area would be contained within the existing easement along the surface streets where the pipes are currently buried. All construction activities and other ground disturbances would occur within the existing easement, mostly within the existing paved streets and shoulders. Only very minor disturbances to herbaceous landscaping in the parking strip areas, especially around the existing valves, are anticipated.

The Haights Creek irrigation distribution system currently carries irrigation water through the Cities of Fruit Heights and Kaysville. Land use through the project action area is primarily residential, with a few agriculture and commercial operations. Habitats through the action area reflect the land uses surrounding the system, namely landscaped, residential development.

STATUS OF LISTED SPECIES AND ASSOCIATED CRITICAL HABITAT

Site visits were conducted on December 1, 2015 and August 16, 2016, by Trent Toler, Qualified Biologist with J-U-B ENGINEERS, INC. in order to review the existing conditions within the project action area. In order to identify species of concern associated with the proposed project actions, an official species list was obtained from the United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation (IPaC) system (USFWS 2017). According to the IPaC report (See Appendix B – Federal & State Agency Correspondence), only one federally listed species has potential to exist within the project

action area. The species list summarized in Table 1 was derived from habitat conditions and potential species occurrence within the defined project action area.

Table 1. Summary of Potential TES Species.

Common Name	Scientific Name	Occurrence[1]	Effects
THREATENED			
Yellow-billed cuckoo	*Coccyzus americanus*	Low	No effect
SENSITIVE			
American white pelican	*Pelecanus erythrorhynchos*	Low	No impact
Bobolink	*Dolichonyx oryzivorus*	Low	No Impact
Bonneville cutthroat trout	*Oncorhynchus clarkii utah*	None	No Impact
Lewis's woodpecker	*Melanerpes lewis*	Low	No Impact
Short-eared owl	*Asio flammeus*	None	No Impact

[1] Occurrence = Likelihood of the presence of habitat or known species records for the project action area, where: None = no habitat or known records within or adjacent to the project action area; Low = some potential habitat within or adjacent to project action area, or known presence records very near but not in the project action area; High = habitat and/or known presence records in project action area.

On December 15, 2015, the Utah Division of Wildlife Resources (UDWR) provided a response letter regarding information on ESA species (See Appendix B – Federal & State Agency Correspondence). The only records specified by the UDWR relating to the above mentioned federally-listed species include the yellow-billed cuckoo with recent records within a half-mile of the action area.

EFFECTS OF THE PROPOSED PROJECT ON SPECIES AND CRITICAL HABITAT

This section documents any direct, indirect, or cumulative effects or impacts to the habitat or species relevant to this project and overall effects to threatened, endangered, candidate, or sensitive species (Table 1). Only those federally-listed species with potential habitat within the project action area will be discussed further for assessment and evaluation.

Threatened Species

Yellow-billed Cuckoo (YBC)

The yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is listed as threatened. As the name suggests, this avian species has a yellow lower mandible. It has grayish-brown wings with rufous primary feathers that will flash during flight. The underparts are white and they have large white and black bands on the tail (USFWS 2013). Its incubation/nestling period is the shortest of any known bird, because it is one of the last neotropical migrants to arrive in North America and chicks have very little rearing time before embarking on their transcontinental migration. YBCs arrive in Utah in late May or early June and breed in late June through July. Cuckoos typically start their southerly migration by late August or early September.

YBCs are considered a riparian obligate and are usually found in large tracts of cottonwood/willow habitats with dense sub-canopies (below 33 feet). Moist river bottoms and deltas with high humidity and a lack of invasive tree species are also key habitat elements (USFWS 2013). More specifically, the Proposed Rule for Critical habitat in the Federal Register (Vol. 79 No. 158 Pp. 48548-48652) describes habitat and space needs for normal life history behavior (non-critical habitat). Therein (Pp. 48551), it describes that YBC require "large

tracts of willow-cottonwood or mesquite (*Prosopis* sp.) forest or woodland for nesting season habitat. Western YBCs rarely nest at sites less than 50 acres in size and sites less than 37 acres are considered unsuitable habitat."

Although there is at least one recorded occurrence of the yellow-billed cuckoo within a half-mile of the action area (UDWR 2015), the current habitat within the action area does not meet the requirements of suitable habitat as outlined in the Federal Register. The project area is a developed residential area that does not meet the requirements of this species. The proposed changes to the piping system would not affect any riparian habitat. Therefore, based on the lack of suitable habitat in the project area and the lack of impacts to any riparian habitat, the proposed action would have **no effect** on the yellow-billed cuckoo.

EFFECTS OF THE PROPOSED PROJECT ON MIGRATORY BIRD SPECIES OF CONCERN

Birds are protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGPA). According to the USFWS IPaC Report, there are 28 migratory bird species with the potential to occur within the proposed action area. Given the urban character of the proposed project area, it would be reasonable to assume that active nests of these species would be unlikely to occur. The proposed project does not include tree removal, and only includes a small area of grass removal, which is dominated by ornamental, urban grass species. No suitable nesting or perching habitat exists within the proposed project area. While there are no known migratory bird nests in the proposed project area, all project activities would comply with Executive Order 13186, to ensure that construction activities do not result in the "take" of an active nest or migratory bird protected under the MBTA and BGPA.

IMPACT AVOIDANCE AND MINIMIZATION MEASURES

No suitable habitat exists nor would any potential habitat be impacted within the project action area, therefore no impact avoidance and minimization measures would be necessary.

CONCLUSIONS AND DETERMINATION OF EFFECT

Anticipated construction activities to replace or add new piping and valves through the Cities of Fruit Heights and Kaysville in Davis County are scheduled to begin in the fall of 2017. Activities related to the replacement and addition of buried pipe and valves would primarily occur within the existing surface street ROW. The three planned staging areas would be located on previously disturbed parcels close to the piping operations. The proposed project would have no effect on the federally-listed (ESA) species.

LITERATURE CITED

Haights Creek Irrigation Company (HCIC). 2015. Haights Creek Irrigation. Haightscreek.org accessed December 1.

Utah Department of Wildlife Resources, Utah Natural Heritage Program (UDWR). 2015. Letter in response to request by Trent Toler of J-U-B for a list of species of concern near the Haights Creek Irrigation Company Piping Project, Davis County, Utah. December 15.

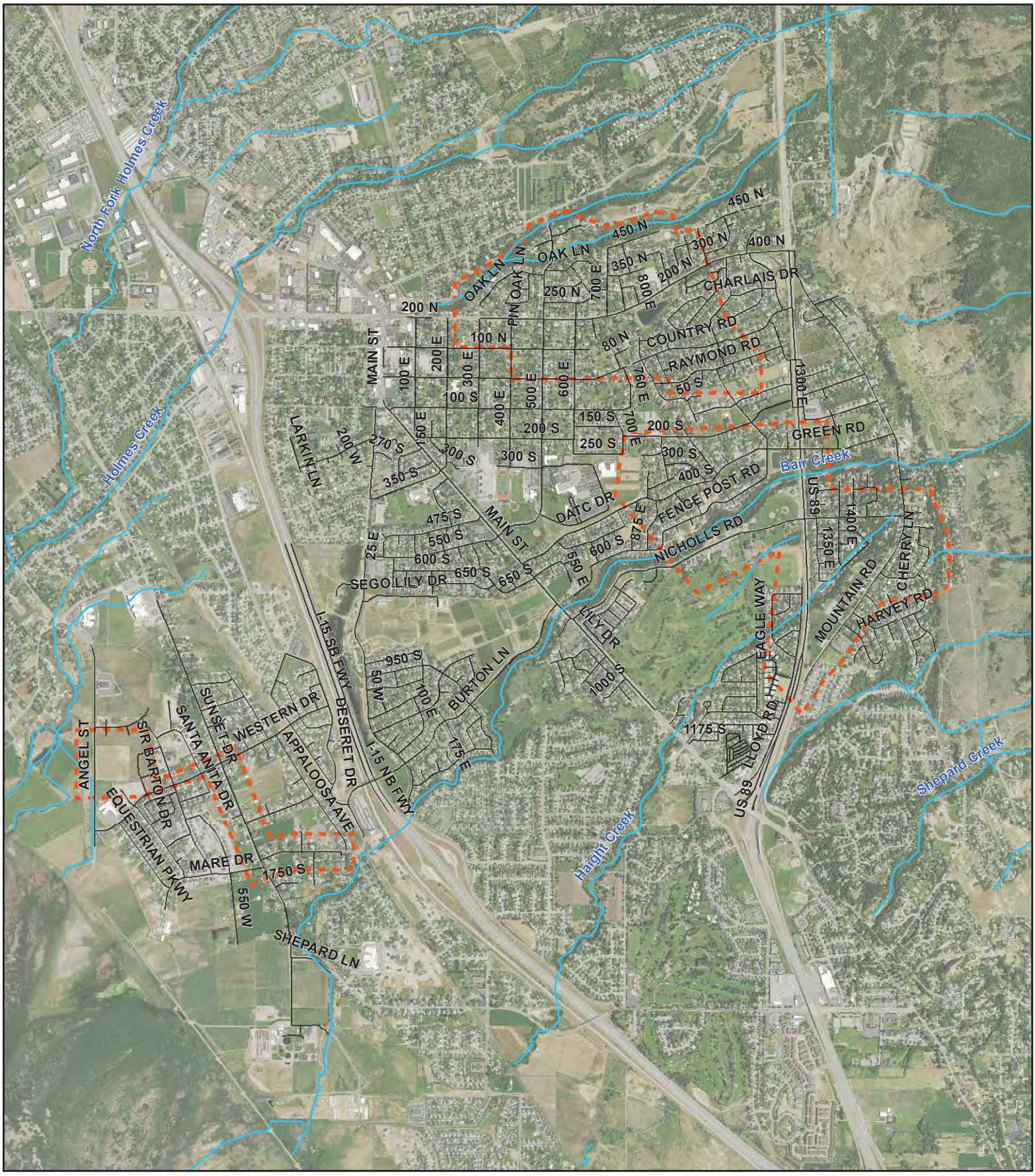
U.S. Fish and Wildlife Service (USFWS).

2015. Letter in response to request by Trent Toler of J-U-B for a list of Threatened and Endangered species that may occur in the defined location for the Haights Creek Irrigation Company Piping Project. December 10.

2013. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*); Proposed Rule. 50 CFR Part 17 (October 3, 2013), pp. 61622-61666.

1995. Ute ladies'-tresses (*Spiranthes diluvialis*) Draft Recovery Plan. Denver, Colorado.

Washington State Department of Transportation (WSDOT). 2013. *Biological Assessment Preparation for Transportation Projects - Advanced Training Manual, Version 02-2013.* Olympia, Washington.



N
W E
S

0 1,000 2,000 4,000 6,000 Feet

1 inch = 2,500 feet

Haights Creek Irrigation Company
Distribution System Improvements

Site Map

Legend

Project Action Area

JUB Engineers, Inc.

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
PHONE: (801)975-3330 FAX: (801)975-3331
URL: www.fws.gov; www.fws.gov/utahfieldoffice/

Consultation Code: 06E23000-2016-SLI-0063 December 13, 2016
Event Code: 06E23000-2016-E-00158
Project Name: Haight's Creek Irrigation Company Piping Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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 ECOS-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 ECOS-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:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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 Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Haight's Creek Irrigation Company Piping Project

Official Species List

Provided by:

Utah Ecological Services Field Office
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UT 84119
(801) 975-3330
http://www.fws.gov
http://www.fws.gov/utahfieldoffice/

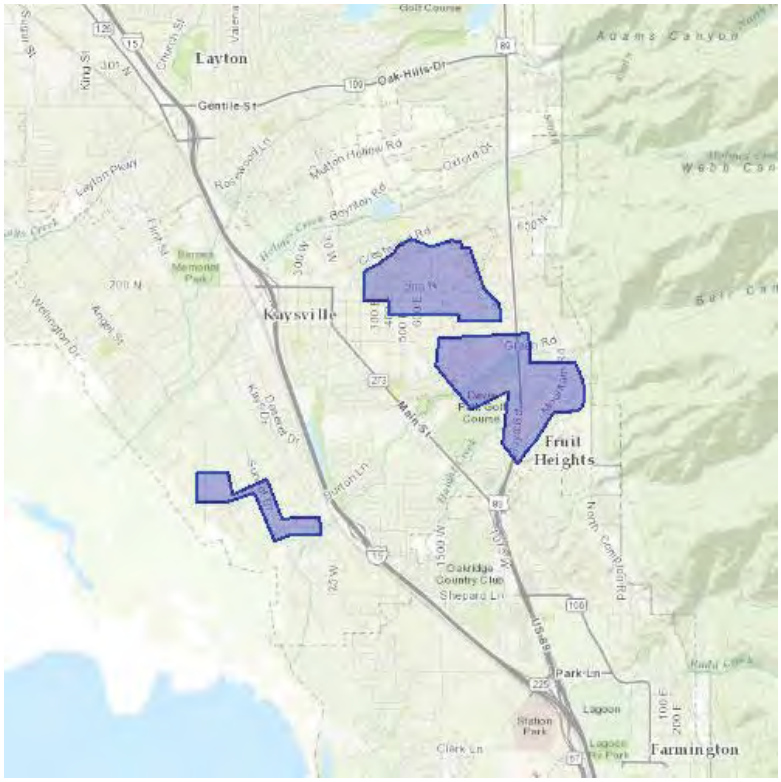
Consultation Code: 06E23000-2016-SLI-0063
Event Code: 06E23000-2016-E-00158

Project Type: WATER SUPPLY / DELIVERY

Project Name: Haight's Creek Irrigation Company Piping Project
Project Description: Replacing and repairing existing buried pipe, adding new sections of buried pipe, abandoning older sections of buried pipe, and upgrading or repairing valves. All work occurs within existing surface street right-of-way.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Davis, UT

United States Department of Interior
Fish and Wildlife Service

Project name: Haight's Creek Irrigation Company Piping Project

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Threatened	Proposed	

United States Department of Interior
Fish and Wildlife Service

Project name: Haight's Creek Irrigation Company Piping Project

Critical habitats that lie within your project area

There are no critical habitats within your project area.

PHOTO INVENTORY

Figure 1. A typical residential street (Mountain Rd.) where buried pipe running along the shoulder would be replaced.

Figure 2. A typical residential street (Oak Ln.) where new pipe would be buried along the edge of the pavement.

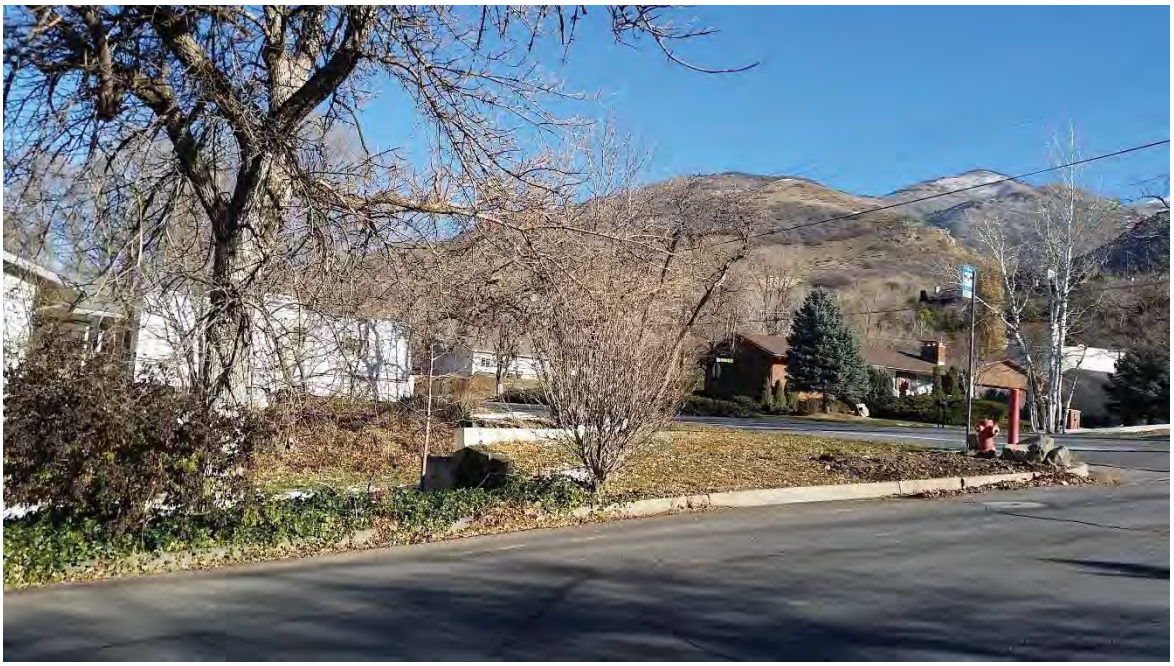


Figure 3. A typical intersection (Nicholls Rd. and Mountain Rd.) where valve work is proposed.

Figure 4. North section staging area south of 200 North, Kaysville.

Figure 5. South section staging area on north side of Nicholls Rd., Fruit Heights.

Figure 6. West section staging area on east side of Angel St., Kaysville.