

Environmental Assessment for the Nebo Regional Water Project

May 2026



U.S. Department of the Interior – CUPCA Office
Bureau of Reclamation
Utah Reclamation Mitigation and Conservation Commission
Central Utah Water Conservancy District



Mission Statements

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

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Abbreviations

Abbreviation	Definition
AF	acre-feet
APE	area of potential effects
BMP	best management practice
CFR	<i>Code of Federal Regulations</i>
cfs	cubic feet per second
CUP	Central Utah Project
CUP-BU	Central Utah Project–Bonneville Unit
CUPCA	Central Utah Project Completion Act
CWA	Clean Water Act
District	Central Utah Water Conservancy District
DNR	Utah Department of Natural Resources
DOI	U.S. Department of the Interior
<i>E. coli</i>	<i>Escherichia coli</i>
EA	environmental assessment
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
<i>et seq.</i>	and subsequent sections
GIS	geographic information system
Interior	U.S. Department of the Interior – Central Utah Project Completion Act Office
JLAs	Joint Lead Agencies
LWCF	Land and Water Conservation Fund
M&I	municipal and industrial
Mitigation Commission	Utah Reclamation Mitigation and Conservation Commission
NEPA	National Environmental Policy Act
No.	number
NWP	Nebo Regional Water Project
OM&R	operation, maintenance, and replacement
P.L.	Public Law
PPF	Juab County and Southern Utah County Water Supply and Infrastructure Plan Formulation Project

Abbreviation	Definition
Proposed Project	Nebo Regional Water Project
PWRE	Precision Water Resources Engineering
Reclamation	U.S. Bureau of Reclamation
Stat.	Statutes at Large
SVP	Strawberry Valley Project
SWPPP	stormwater pollution protection plan
TCE	temporary construction easement
TDS	total dissolved solids
TMDL	total maximum daily load
TSS	total suspended solids
UDEQ	Utah Department of Environmental Quality
UDWR	Utah Division of Wildlife Resources
ULS	Utah Lake Drainage Basin Water Delivery System
US-91	U.S. Highway 91
USACE	U.S. Army Corps of Engineers
USC	<i>United States Code</i>
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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Chapter 1. Purpose and Need

1.1 Introduction

The Central Utah Water Conservancy District (District) is a regional wholesale provider that serves seven counties (all of Utah, Salt Lake, Wasatch, Duchesne, and Uintah Counties as well as parts of Juab and Summit Counties) in central Utah and collaborates with other agencies to serve its constituents. The District's primary responsibility is to deliver a safe and secure water supply to its customers by managing the federal Central Utah Project (CUP) and the District's network of non-federal water facilities. The District is a water wholesaler to water districts, municipalities, industrial users, and agricultural users. The Central Utah Project Completion Act (CUPCA; Public Law [P.L.] 102-575, Section 205) required that the District enter into an agreement with the U.S. Department of the Interior to act as a federal agency for compliance with environmental laws, including the National Environmental Policy Act (NEPA).

As Joint Lead Agencies (JLAs), the District, the U.S. Bureau of Reclamation (Reclamation), the U.S. Department of the Interior – Central Utah Project Completion Act Office (Interior), and the Utah Reclamation Mitigation and Conservation Commission (Mitigation Commission) are preparing an environmental assessment (EA) in accordance with NEPA, 42 *United States Code* (USC) Section 4321 and subsequent sections, and applicable regulations, for the proposed Nebo Regional Water Project (Proposed Project).

The Proposed Project would develop an integrated raw (or untreated) water and finished (or treated) water delivery system that is reliable, resilient, and able to serve current and future municipal and industrial (M&I) and agricultural water demands in southern Utah County and eastern Juab County. For purposes of this EA, M&I water can be used for agricultural purposes, but agricultural water cannot be used for M&I purposes.

1.2 Partner Agencies

The JLAs have been coordinating with the Strawberry High Line Canal Company, the Strawberry Water Users Association, the East Juab Water Conservancy District, Utah County, and cities in southern Utah County and eastern Juab County to help identify the proposed actions and alternatives, needs, and purposes summarized in this EA. The JLAs are coordinating the interests and goals of each of these entities with JLA objectives and are proposing the Nebo Regional Water Project to provide a secure and resilient water supply that meets the demands for agricultural use and growing M&I uses.

1.3 Project Location

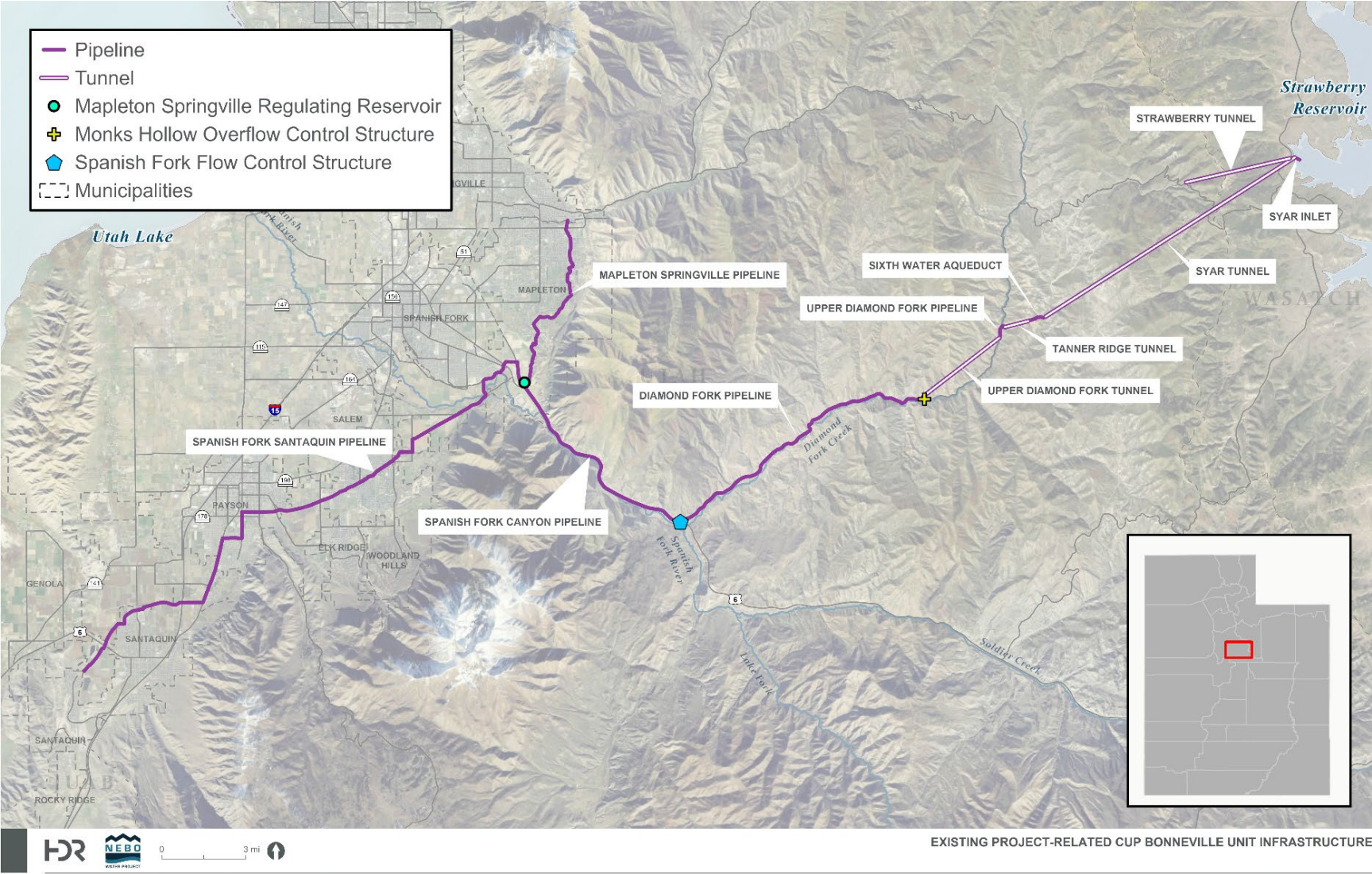
The District and Reclamation manage several pipelines and canals that transport water to southern Utah County (Figure 1-1). The Proposed Project is located in southern Utah County and eastern Juab County, generally between Spanish Fork Canyon and the city of Nephi.

1.4 Project-related Documents and References

The following current documents are relevant to the Proposed Project and its context:

- Reclamation Act (1902)
- Colorado River Storage Project Act (1956)
- *Repayment Contract Between the United States of America and the Central Utah Water Conservancy District, Utah* (1965) as amended
- *Bonneville Unit Definite Plan Report* (1988)
- *Contract Among the United States, Central Utah Water Conservancy District, and Strawberry Water Users Association Relating to the Operation and Maintenance of the Enlarged Strawberry Reservoir and Related Facilities Jointly Used* (1991) (1991 Agreement)
- Central Utah Project Completion Act (1992)
- *Utah Lake Drainage Basin Water Delivery System Environmental Impact Statement* (2004) (2004 ULS EIS)
- *Supplement to the 1988 Bonneville Unit Definite Plan Report* (2004) (2004 Definite Plan Report)
- *Repayment Contract Between the United States of America and the Central Utah Water Conservancy District* (2005)
- *Environmental Assessment for Strawberry Valley Project 1920 Act Conversion* (2024)
- *Strawberry Valley Project Contract for the Use of SVP Water for Miscellaneous Purposes* (2025)

Figure 1-1
Existing Project-related CUP-BU Infrastructure



1.5 Background

1.5.1 Strawberry Valley Project

The Strawberry Valley Project (SVP) was authorized under the Reclamation Act of 1902 as an irrigation project to establish a trans-basin diversion from the Strawberry River into the Utah Lake Drainage. A trans-basin diversion is a human-made conveyance system that transports water from one river basin to another—in this case, across the basin divide between the Colorado River Basin and the Bonneville Basin (Wasatch Front). The SVP has provided water to areas of southern Utah County for more than 100 years.

Reclamation began constructing the SVP in 1906 and completed the project in 1922. The original SVP infrastructure includes the original Strawberry Dam and Reservoir (this was intentionally breached in 1985 after Strawberry Reservoir was enlarged by the CUP–Bonneville Unit [CUP-BU] Soldier Creek Dam), Strawberry Tunnel (now a CUP-BU facility maintained by the District), Spanish Fork River Diversion, Power Canal, Upper and Lower Spanish Fork Hydroelectric Facilities, Payson Hydroelectric Facility, Mapleton-Springville Lateral (this was piped in 2008 and is now the Mapleton-Springville Pipeline, a CUP-BU facility), and the Strawberry High Line Canal.

The Strawberry High Line Canal Company was incorporated in 1916 with the purpose of distributing its portion of SVP water. In 1916, the Strawberry High Line Canal Company entered into an operation and maintenance agreement with Reclamation for the Strawberry High Line Canal, along with its associated ditches, laterals, and other water works. A 1921 contract between Reclamation and the Strawberry High Line Canal Company assigned that portion of SVP return flows (water that returns to surface water bodies or groundwater after use) originating from the Strawberry High Line Canal to the Strawberry High Line Canal Company.

The Strawberry Water Users Association, which was incorporated in 1922, entered into contracts with Reclamation beginning in 1926 to distribute SVP water to the headgates of the various canal companies, repay the United States for SVP construction costs, and assume the operation, maintenance, and replacement (OM&R) of SVP facilities (except for the Strawberry High Line Canal and the Mapleton-Springville Pipeline).

1.5.2 Central Utah Project–Bonneville Unit (CUP-BU)

Congress authorized construction of the CUP in 1956 through the Colorado River Storage Project Act (P.L. 84-485, 70 Statutes at Large [Stat.] 105). The Bonneville Unit is part of the CUP. CUPCA (Titles II through VI of P.L. 102-575), enacted on October 30, 1992, authorized completion of the CUP-BU and transferred the responsibility for CUP-BU planning and construction from Reclamation to the District with federal oversight from Interior. Water is

collected from the Uinta Mountains in the Colorado River Basin and delivered for storage in the enlarged Strawberry Reservoir, which is a feature of the CUP-BU. The capacity of the enlarged Strawberry Reservoir is 1,106,500 acre-feet (AF).

In addition to the enlarged reservoir, the CUP-BU includes the Diamond Fork System, which makes trans-basin deliveries for the SVP and CUP-BU. The Diamond Fork System is a series of pipelines and tunnels that convey CUP-BU water from Strawberry Reservoir to the Spanish Fork River for use by the SVP contract holders. The Diamond Fork System also connects to the Utah Lake Drainage Basin Water Delivery System (ULS), which is another component of the CUP-BU, that delivers water to ULS contract holders in southern Utah County and Salt Lake County. The ULS also provides conserved water for instream flows to Hobble Creek and the Provo River to assist with recovery of the threatened June sucker (*Chasmistes liorus*).

Figure 1-1 above shows the existing project-related CUP-BU infrastructure. The ULS pipelines applicable to the Proposed Project are the 96-inch-diameter Spanish Fork Canyon Pipeline and the 60-inch-diameter Spanish Fork Santaquin Pipeline. The *Utah Lake Drainage Basin Water Delivery System Environmental Impact Statement* (EIS) was completed in 2004 and analyzed the delivery of 23,090 AF of water from Strawberry Reservoir to southern Utah County for M&I outdoor uses. The ULS pipelines are detailed in the 2004 Definite Plan Report.

For purposes of this EA, water delivered from Strawberry Reservoir, that was not originally considered SVP water, is referred to as “CUP-BU water” for clarity; however, all water delivered from Strawberry Reservoir is considered Bonneville Unit water whether it is being used for SVP or CUP deliveries.

1.5.3 1991 Agreement and 1991 Contract Water

When Strawberry Reservoir was enlarged and became a CUP-BU facility, Reclamation, the District, and the Strawberry Water Users Association recognized that the SVP contractual obligations to deliver water to the SVP water users needed to be met while allowing the CUP-BU to function as intended. In July 1991, the parties entered into a *Contract Among the United States, Central Utah Water Conservancy District, and Strawberry Water Users Association Relating to the Operation and Maintenance of the Enlarged Strawberry Reservoir and Related Facilities Jointly Used* (1991 Agreement).

For this EA, the water stored in Strawberry Reservoir and delivered to SVP contract holders under the terms of the 1991 Agreement is referred to as “1991 Contract Water.”

1.5.4 Strawberry Valley Project and Miscellaneous Purposes Act Conversion Environmental Assessment

In August 2024, Reclamation completed the *Strawberry Valley Project Miscellaneous Purposes Act Conversion Environmental Assessment* (Reclamation 2024) (Conversion EA), which analyzed the use of 1991 Contract Water for miscellaneous purposes, including M&I uses. In September 2025, Reclamation, the Strawberry Water Users Association, and the SVP contract holders executed the *Strawberry Valley Project 1920 Act Conversion Contract*, Contract No. 25-WC-40-1015 (Conversion Contract) to effectuate the conversion. *Miscellaneous use* is defined in the Conversion Contract as “the use of contract water from any project irrigation system for other purposes than irrigation,” including various M&I uses such as outdoor watering for landscaping and indoor uses such as drinking, cooking, washing, bathing, and industrial purposes. The Conversion Contract allows converted water to be used only during the irrigation season and in the current SVP service area (see Appendix 2-B, *Existing and Proposed Nebo Service Area*).

The Clinton Irrigation District receives SVP water by exchange with natural flow water from the Spanish Fork River and is included in the SVP service area. The Conversion EA intended to, but did not specifically discuss, including the Clinton Irrigation District in the M&I conversion. This administrative action was considered in this EA and has been determined to not have any impacts beyond those included in the Conversion EA.

1.5.5 Section 207 Conserved Water

Section 207 of CUPCA authorized a comprehensive program to study and improve water management. Section 207(e)(2) authorized the use of federal funds to finance up to 65% of the cost of implementing water conservation measures. Section 207(b)(4) allowed for water that is saved or conserved from projects to be made available for District use. For this EA, the term “conserved water” refers to water provided under Section 207.

1.5.6 Instream Flows

Sixth Water and Diamond Fork Creeks’ instream flow rates were established by CUPCA but were optimized as part of the Diamond Fork Environmental Update Project (2022). The instream flow commitments in Sixth Water and Diamond Fork Creeks require a year-round minimum release of 20 cubic feet per second (cfs) into the Strawberry Tunnel from Strawberry Reservoir. This provides a minimum of 22 cfs as measured at the U.S. Geological Survey Sixth Water gage in Sixth Water Creek, more than 6 miles downstream of the Strawberry Tunnel.

The Diamond Fork Creek minimum flow at Red Hollow Gage is established at 40 cfs and is made up from the water delivered through the Strawberry Tunnel and natural flows; and, when needed, additional water is delivered from the Sixth Water Flow Control Structure.

Sixth Water Creek converges with Diamond Fork Creek, which discharges into the Spanish Fork River. The minimum instream flows are met with a combination of 1991 Contract Water, CUP-BU water, and natural hydrology. Currently, during the irrigation season, the minimum instream flows are met through natural hydrology and the delivery of 1991 Contract Water released through the Diamond Fork System facilities to Sixth Water and Diamond Fork Creeks; the water then flows into the Spanish Fork River.

The 1991 Contract Water is diverted from the Spanish Fork River and delivered to SVP contract holders. The Sixth Water and Diamond Fork Creeks' instream flows are delivered from Strawberry Reservoir during the non-irrigation season from the CUP-BU water supply released through the Diamond Fork System. The CUP-BU water released to meet instream flows is stored in Utah Lake on a space-available basis and is subject to incremental evaporation and can be used for additional CUP-BU purposes. For purposes of this EA, references to "instream flows" are specific to these waters. For more information about instream flows, see Appendix 1-A, *Spanish Fork River Historical Data Technical Report*.

1.5.7 SVP High-flow Water

The United States holds two water rights (51-1004 and 51-1016) allowing the diversion of any Spanish Fork River water above 390 cfs to be used by SVP contract holders within the Strawberry High Line Canal Company. In high-water years, this could be up to 10,000 AF of natural Spanish Fork River flow that is used by SVP contract holders. This water is used to supplement the 1991 Contract Water that is delivered from Strawberry Reservoir. For purposes of this EA, the high-flow Spanish Fork River water rights above 390 cfs are referred to as "SVP high-flow water." The first 390 cfs is diverted to non-project water users.

1.5.8 Warren Act Water

The Secretary of the Interior may allow excess storage or conveyance capacity to be used for non-federal water, based on space availability, in features constructed as part of federal water projects pursuant to Section 1 of the Warren Act of February 21, 1911 (Warren Act) (P.L. 61-406; 43 USC Section 523). A Warren Act contract is required between the Secretary of the Interior and the non-federal water owner before the water owner can use excess capacity. For the Proposed Project, the JLAs are analyzing potential Warren Act contracts for non-federal water.

There are existing Warren Act contracts between Reclamation and water users that would be assigned to Interior (see Appendix 2-A, *Warren Act Contracts*).

1.6 Existing Water Facilities

Existing water facilities are described in the following subsections. These facilities are described generally from upstream to downstream and are shown in Figure 1-1, Figure 1-2, and Figure 1-3.

1.6.1 Strawberry Reservoir (CUP)

The enlarged Strawberry Reservoir stores water for trans-basin water delivery to the Bonneville Basin and for deliveries to the Strawberry River in the Uinta Basin. The reservoir has a capacity of 1,106,500 AF. It is located in Wasatch County in the Colorado River Basin and is a popular recreation spot. The reservoir is fed by many natural creeks and streams as well as the 37-mile Strawberry Aqueduct and Collection System, which is part of the CUP-BU. The original Strawberry Reservoir and Tunnel were completed in 1915. Water conveyance associated with the tunnel was largely replaced by the Diamond Fork System, which was completed in 2004. Soldier Creek Dam, which impounds the enlarged Strawberry Reservoir, was completed in 1974.

1.6.2 Diamond Fork System (CUP)

The Diamond Fork System conveys water stored in Strawberry Reservoir to the ULS pipelines and 1991 Contract Water to the Spanish Fork River via release to Diamond Fork Creek. The Diamond Fork System also provides minimum instream flows to Sixth Water and Diamond Fork Creeks to meet CUPCA requirements.

1.6.3 Utah Lake Drainage Basin Water Delivery System (CUP)

The ULS is a pressurized pipeline system that delivers water stored in Strawberry Reservoir to southern Utah County, Hobbie Creek, the Provo River, and Salt Lake County. For purposes of this project, the relevant ULS features are the Spanish Fork Canyon Pipeline, Spanish Fork Santaquin Pipeline, and Mapleton-Springville Pipeline.

1.6.3.1 Spanish Fork Canyon Pipeline

The 96-inch-diameter Spanish Fork Canyon Pipeline begins at and is connected to the end of the Diamond Fork System near the confluence of Diamond Fork Creek and the Spanish Fork River and extends west to the mouth of Spanish Fork Canyon.

1.6.3.2 Spanish Fork Santaquin Pipeline

The 60-inch-diameter Spanish Fork Santaquin Pipeline conveys water from the mouth of Spanish Fork Canyon, where it connects to the Spanish Fork Canyon Pipeline, and ends near Santaquin. Construction on the Spanish Fork Santaquin Pipeline is anticipated to be substantially completed in spring 2026.

1.6.3.3 Mapleton-Springville Pipeline

The Mapleton-Springville Pipeline was completed in 2008 and replaced the Mapleton-Springville Lateral. It delivers water from the Spanish Fork Canyon Pipeline to the Mapleton and Springville Irrigation Districts. It also delivers conserved CUP-BU water to Utah Lake via Hobble Creek to assist with recovery of the threatened June sucker.

1.6.4 Strawberry Power Canal (SVP)

The Strawberry Power Canal (Power Canal) conveys water diverted from the Spanish Fork River, including a majority of the 1991 Contract Water, at the Spanish Fork River Diversion (also called the Main Dam), which is located about 2 miles upstream of the mouth of Spanish Fork Canyon. This canal is operated and maintained by the Strawberry Water Users Association and is used to convey water for power generation and to deliver water to contract holders. Construction began on the Power Canal in 1907, and it was completed in 1908.

1.6.5 Power Generation Facilities (SVP)

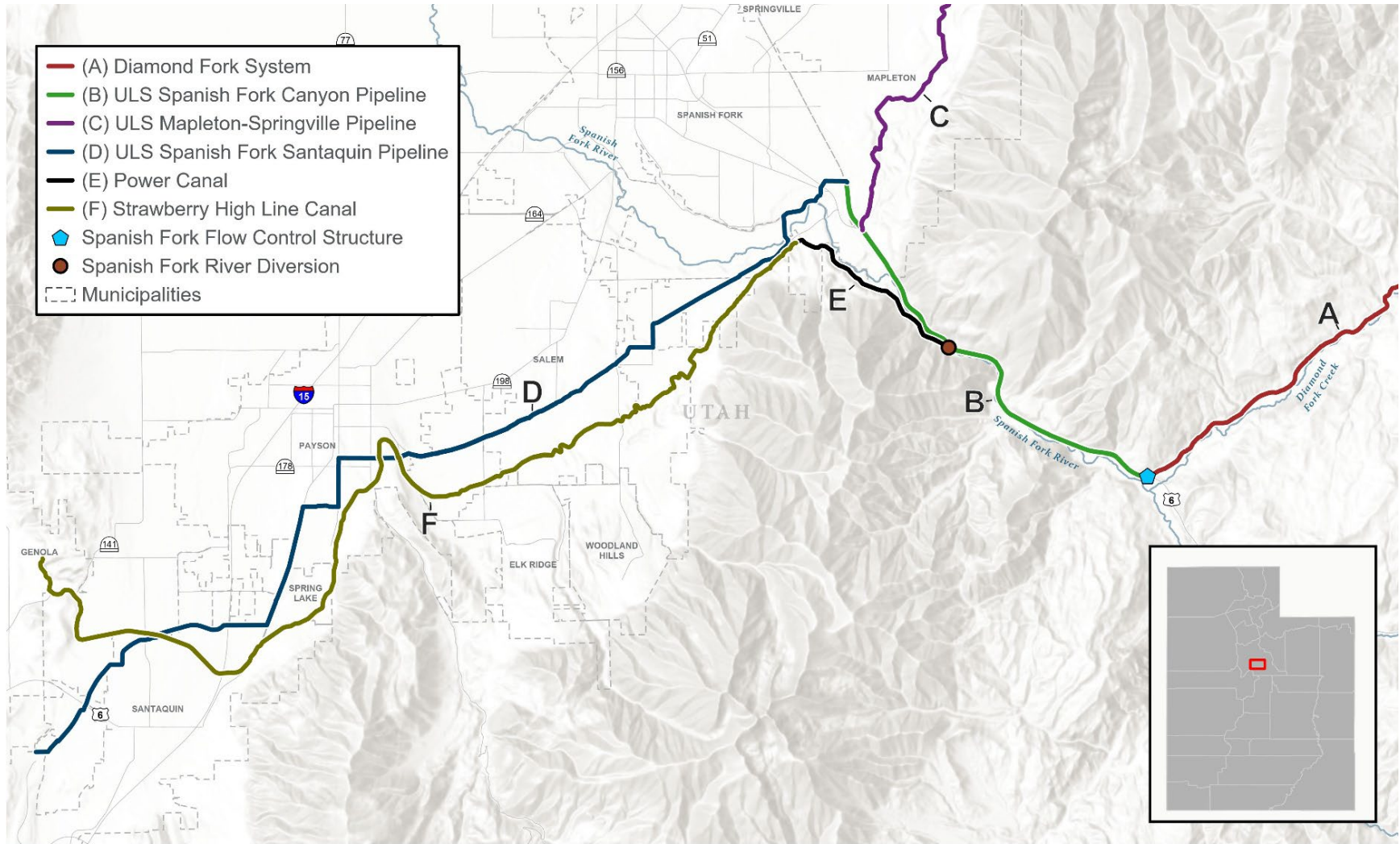
The Strawberry Water Users Association operates and maintains the Upper Spanish Fork Hydroelectric Facility (began operations in 1909), Lower Spanish Fork Hydroelectric Facility (began operations in 1937), and Payson Hydroelectric Facility (began operations in 1941). For purposes of this EA, these are called the “SVP power generation facilities.” The Upper Spanish Fork Hydroelectric Facility was originally built to provide power generation to support the construction of the Strawberry Tunnel. Currently, the power generated is used to offset the Strawberry Water Users Association’s operation costs. Figure 1-3 shows the hydroelectric facilities maintained by the Strawberry Water Users Association.

1.6.6 Strawberry High Line Canal (SVP)

The Strawberry High Line Canal delivers water for agriculture and other purposes. This canal begins at the end of the Power Canal and forebay structure, about 3 miles from the Spanish Fork River Diversion. It is 18 miles long and runs along the southeast foothills of Utah County before heading west through the south end of the valley. It ends just past the Goshen Gap, about 1 mile northwest of Santaquin in southwestern Utah County (Figure 1-2).

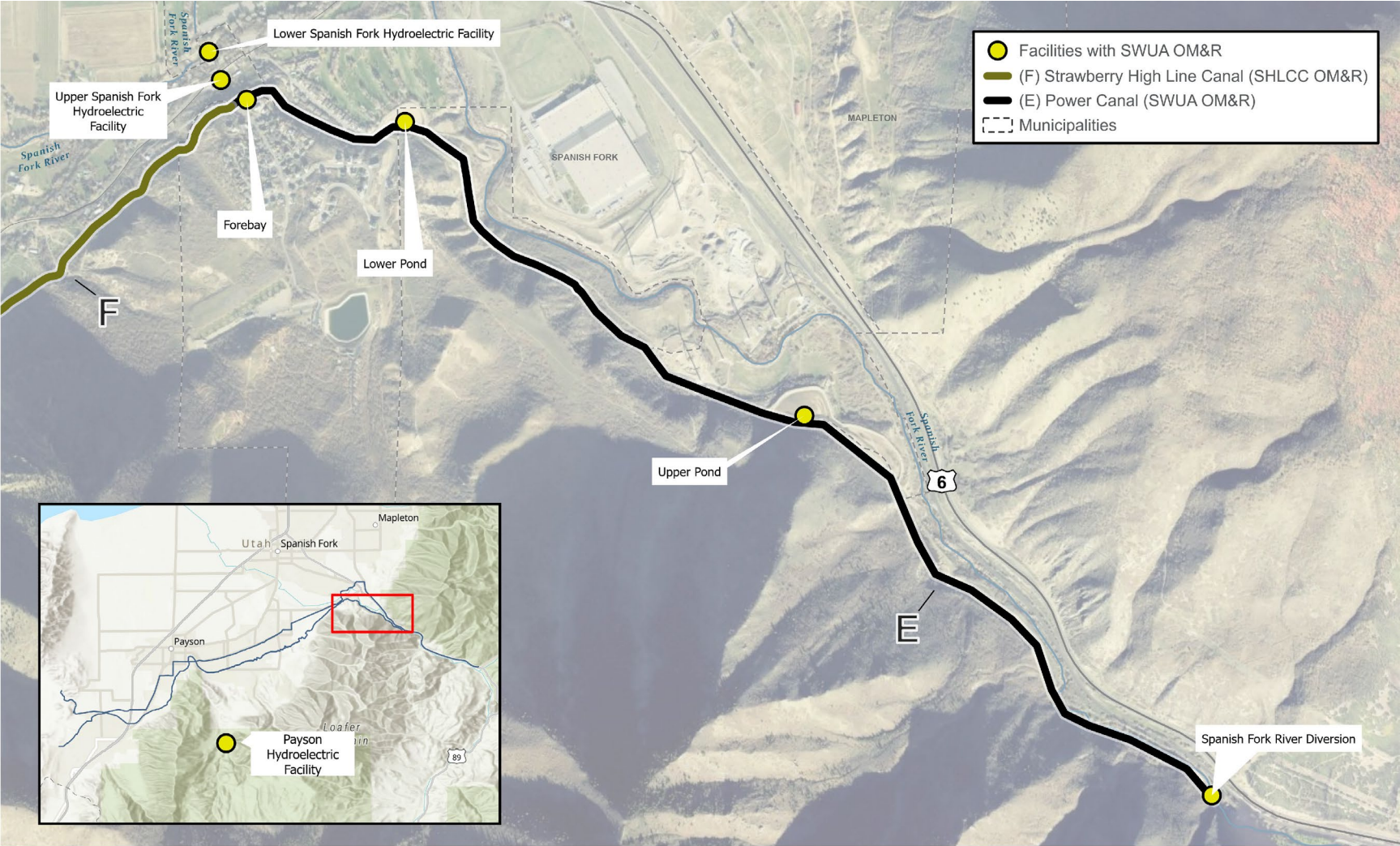
The canal has many turnouts to smaller ditches and laterals that, when combined, total about 60 miles in length. Water in the Strawberry High Line Canal flows at about 250 cfs. More than 9 miles of the canal have an earthen bottom and earthen banks, and about 8 miles have concrete-lined box culverts, tunnels, or siphons. The Strawberry High Line Canal Company is responsible for the canal’s OM&R, including its ditches, laterals, and other appurtenances.

Figure 1-2
Existing Water Facilities



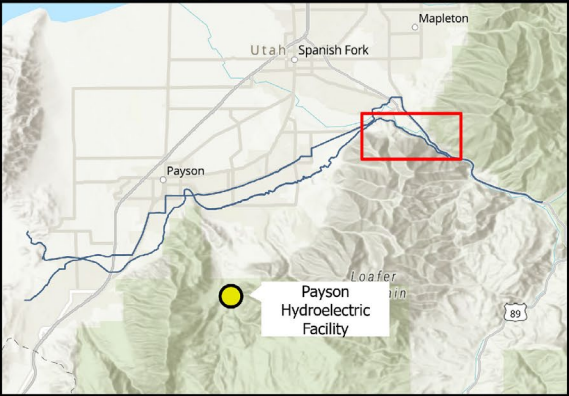
EXISTING CONDITIONS / NO-ACTION ALTERNATIVE

Figure 1-3
Existing SVP Project Facilities



Legend:

- Facilities with SWUA OM&R
- (F) Strawberry High Line Canal (SHLCC OM&R)
- (E) Power Canal (SWUA OM&R)
- - - Municipalities



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EXISTING STRAWBERRY VALLEY PROJECT FACILITIES

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NEBO ENVIRONMENTAL ASSESSMENT

1.7 Purpose of and Need for Action

1.7.1 Need for the Project

The Proposed Project is needed because the current water supply system is not efficient, is not integrated and redundant, cannot meet the needs of anticipated increased population levels and increasing M&I water demand in southern Utah County and eastern Juab County, and portions of the system pose safety risks due to aging infrastructure.

The following needs are identified as “Federal Needs” and/or “District Needs.” Federal Needs include specific needs identified by Reclamation, Interior, and the Mitigation Commission. District Needs include needs specific to the District. Although the first three needs are listed as federal needs related to the existing infrastructure, addressing the first three needs would allow the District to meet the fourth need.

1.7.1.1 Federal Need: Interior

The Proposed Project is needed to implement water conservation measures, to maximize efficiency of water supplies associated with the CUP-BU, to complete construction of the CUP-BU consistent with current and projected M&I uses of the water supply as authorized by CUPCA, and to restructure administrative responsibilities to increase efficiency.

1.7.1.2 Federal Need: Reclamation

Pursuant to the authorization of the Strawberry Valley Project under the Reclamation Act of 1902, the Proposed Project is needed to ensure the safe delivery of water to users currently served by the aging Strawberry High Line Canal, to improve operational inefficiencies of existing SVP facilities, to respond to SVP water users’ request for additional flexibility for use of 1991 Contract Water to meet their current and future needs, to respond to a request from Strawberry Valley Project water users for a partial title transfer of Strawberry Valley Project facilities, and to restructure administrative responsibilities to increase efficiency. Reclamation needs to enter into Warren Act contracts for non-federal water in federal facilities.

1.7.1.3 Federal Need: Mitigation Commission

To ensure mitigation of environmental impacts associated with completion of or modifications to CUP facilities, as provided for in CUPCA, and to ensure that fish, wildlife, and recreation commitments authorized under CUPCA are carried out.

1.7.1.4 District Need

To meet the forecasted regional water supply needs: which include an increasing demand for M&I water, including indoor and year-round use, while continuing to meet existing agricultural and M&I uses in various communities in southern Utah County and eastern Juab County.

1.7.2 Purpose of the Project

The purposes of the Proposed Project below address the needs listed and summarized above:

- Implement water conservation measures authorized under CUPCA to eliminate seepage and evaporation losses in the Strawberry High Line Canal, while improving operational efficiency and water quality.
- Improve public safety by reducing flooding risk and other risks associated with the aging open-channel Strawberry High Line Canal.
- Complete construction and modification of CUP-BU features consistent with CUPCA and current and forecasted future water supply needs.
- Provide safe and reliable water delivery by replacing or modifying aging canal facilities.
- Provide flexibility in the administration and use of 1991 Contract Water to better meet the needs of water users.
- Restructure federal and non-federal administrative responsibilities for CUP-BU and SVP facilities to improve efficiency.
- Provide an integrated, efficient, redundant, and flexible water delivery system that meets current and future demands for agricultural use while also facilitating the transition to future demand requirements for indoor year-round and outdoor M&I use in southern Utah County and eastern Juab County.
- Ensure mitigation of environmental impacts and meet fish, wildlife, and recreation commitments consistent with CUPCA.

Chapter 2. Description of Alternatives

2.1 Development of Alternatives

2.1.1 Criteria for Action Alternatives

To determine whether the project alternatives were reasonable under NEPA and should be carried forward for detailed analysis in this EA, each alternative was evaluated against the following three criteria, consistent with Section 6.1(v) of the *U.S. Department of the Interior Handbook of National Environmental Policy Act Implementing Procedures* (USDOI 2026). An alternative was considered reasonable if it:

1. Met the federal agencies' needs, District's needs, and District's goals for the Proposed Project as described in Section 1.7.1, *Need for the Project*;
2. Accomplished the purposes of the Proposed Project as described in Section 1.7.2, *Purpose of the Project*; and
3. Was determined to be practical or feasible from an economical and technical standpoint. *Economic feasibility* refers to the ability to repay the cost of construction and water, plus interest, in addition to operation and maintenance charges. *Technical feasibility* is defined as being able to use available technologies and/or methods to successfully construct, operate, and maintain project facilities

Alternatives that did not meet the needs of the Proposed Project, accomplish the purposes of the Proposed Project, or were not practical or feasible were not considered reasonable and thus were not carried forward.

2.1.2 Alternatives Development through the Plan Formulation Project

From 2019 to 2024, the District conducted technical studies and evaluations on components of the Proposed Project as part of the Juab County and Southern Utah County Water Supply and Infrastructure Plan Formulation Project (PFP). The District provided updates to Interior and Reclamation during the PFP planning process. This planning process evaluated both future water demand and supply and potential infrastructure projects that could address the future water demand and supply needs (Jacobs 2021, 2024).

In 2024, the District also conducted and completed a value planning study to further evaluate the optimization of infrastructure components, materials, construction methods, and construction costs for the Proposed Project (Strategic Value Solutions 2024). The PFP technical study and value planning study were the basis for the alternatives development and screening process for this EA.

Copies of the reports summarizing the PFP planning process and alternatives development process can be reviewed on the project website (<https://nebowaterproject.cuwcd.gov>).

2.1.3 Alternatives Considered but Eliminated from Detailed Analysis

The District and JLAs considered a wide range of alternatives during the PFP planning process for the Proposed Project. This section summarizes the alternatives that were evaluated in the PFP technical study supporting appendices and technical reports. As summarized below, several components of the Proposed Project had multiple options that were developed and evaluated as part of the PFP technical study. Of the developed project options, one was carried forward as an alternative to be evaluated in this EA, and others were eliminated. The eliminated alternatives are discussed in the PFP technical memoranda referenced below:

- Loafer Pipeline between Spanish Fork Canyon Pipeline and South Utah Valley Regional Treatment Plant (PFP Technical Memorandum 3; Jacobs 2024)
 - Five routes were considered and evaluated.
 - One route was advanced, described below as the Preferred Alternative.
 - Four routes were eliminated due to geological concerns and for having higher relative costs, constructability concerns, or right-of-way concerns.
- Loafer Pipeline Connections between South Utah Valley Regional Water Treatment Plant and ULS Spanish Fork Santaquin Pipeline (PFP Technical Memorandum 4; Jacobs 2024)
 - Six routes were considered between the ULS Spanish Fork Santaquin Pipeline and the South Utah Valley Regional Water Treatment Plant.
 - The preferred route was advanced and is part of the Preferred Alternative as the Loafer Pipeline. The preferred route uses existing road right-of-way and is centrally located in the treatment plant site (Figure 2-1).
 - The other evaluated routes were eliminated due to higher costs and additional impacts related to right-of-way or easement acquisition.
- Nebo Finished Water Pipeline (PFP Technical Memorandum 6; Jacobs 2024)
 - Two to three routes were evaluated for each segment of the Strawberry High Line Finished Water Pipeline.
 - A preferred route was identified that follows the Strawberry High Line Canal right-of-way. This preferred route was advanced as part of the Preferred Alternative (Figure 2-1).

- Other routes located outside the Strawberry High Line Canal right-of-way were eliminated due to additional right-of-way impacts and costs.
- Santaquin-Nephi Pipeline (PFP Technical Memorandum 6; Jacobs 2024)
 - Two to four routes were evaluated for each segment of the Santaquin-Nephi Pipeline.
 - A preferred route was identified that is located primarily in the Summit Ridge Parkway and old U.S. Highway 91 (US-91) right-of-way. This preferred route was advanced as part of the Preferred Alternative (Figure 2-1).
 - Other routes located outside the Summit Ridge Parkway and old US-91 right-of-way were eliminated due to additional right-of-way impacts and costs.

Copies of the reports summarizing the PFP planning process and alternatives development process can be reviewed on the project website (<https://nebowaterproject.cuwcd.gov>).

2.2 Description of Alternatives Carried Forward for Detailed Analysis

The following sections describe the two alternatives carried forward for detailed analysis: the No Action Alternative and the Preferred Alternative. The Preferred Alternative includes multiple options that might or might not be implemented in full or in part, or in combination with other options and alternatives. The Preferred Alternative includes:

- Six Strawberry High Line Pipeline straightening options (Options 1–6). These options are discussed in Section 2.2.3, *Strawberry High Line Pipeline Straightening Options*, and shown in Figure 2-3.
- Two finished water options:
 - Nebo Finished Water Pipeline Option
 - Spanish Fork Santaquin Finished Water Pipeline Option

The finished water options are discussed in Section 2.2.4, *Conveyance of Finished Water*. The Nebo Finished Water Pipeline Option is shown in Figure 2-1. The Spanish Fork Santaquin Finished Water Pipeline Option is shown in Figure 2-4.

2.2.1 No Action Alternative

The No Action Alternative serves as the baseline against which action alternatives are compared to determine the alternatives' effects. The No Action Alternative is often described as “the future

without the proposed major federal action.” Section 1.6, *Existing Water Facilities*, describes existing infrastructure and operating conditions included with the No Action Alternative.

With the No Action Alternative, the Proposed Project would not be implemented. Figure 1-2 above shows the existing water system that would continue with the No Action Alternative. With the No Action Alternative, the JLAs would be unable to modernize their water supply and delivery system to meet future raw and finished water demands. The existing infrastructure and water restrictions would remain the same. The existing Strawberry High Line Canal would remain in place and would continue to provide raw water to the Strawberry High Line Canal Company contract holders. The 1991 Contract Water would still be subject to existing restrictions regarding the time of use in the existing service area (see Appendix 2-B, *Existing and Proposed Nebo Service Area*). The Strawberry High Line Canal Company and Reclamation would face risks involving public safety due to the aging infrastructure associated with the canal. The canal would continue to lose water due to seepage and evaporation. No changes would be made to CUP-BU current operations or water uses.

2.2.2 Preferred Alternative

2.2.2.1 Screening Results

The Preferred Alternative satisfies screening criteria by meeting the project purposes and needs, improving public safety, removing aging infrastructure and enclosing the Strawberry High Line Canal, improving the efficiency of the system (and thereby eliminating seepage losses), and providing water supplies that can help meet current and future water demands in southern Utah County and eastern Juab County.

Additionally, the Preferred Alternative is technically and economically feasible based on the current state of engineering practice and the District’s ability to repay the cost of the Proposed Project, which may include funding obtained pursuant to Section 207 authority in the CUPCA. Therefore, it was carried forward for detailed analysis.

Figure 2-1 provides an overview map of the Preferred Alternative.

2.2.2.2 Preferred Alternative Mitigation Measures and Environmental Commitments

The Preferred Alternative includes many project-specific mitigation measures and best management practices along with regulatory and permit requirements that would minimize impacts. These mitigation measures and environmental commitments are described in Section 3.13, *Mitigation Measures and Environmental Commitments*. The impacts of the

Preferred Alternative summarized in Chapter 3 include and assume implementation of these mitigation measures and environmental commitments.

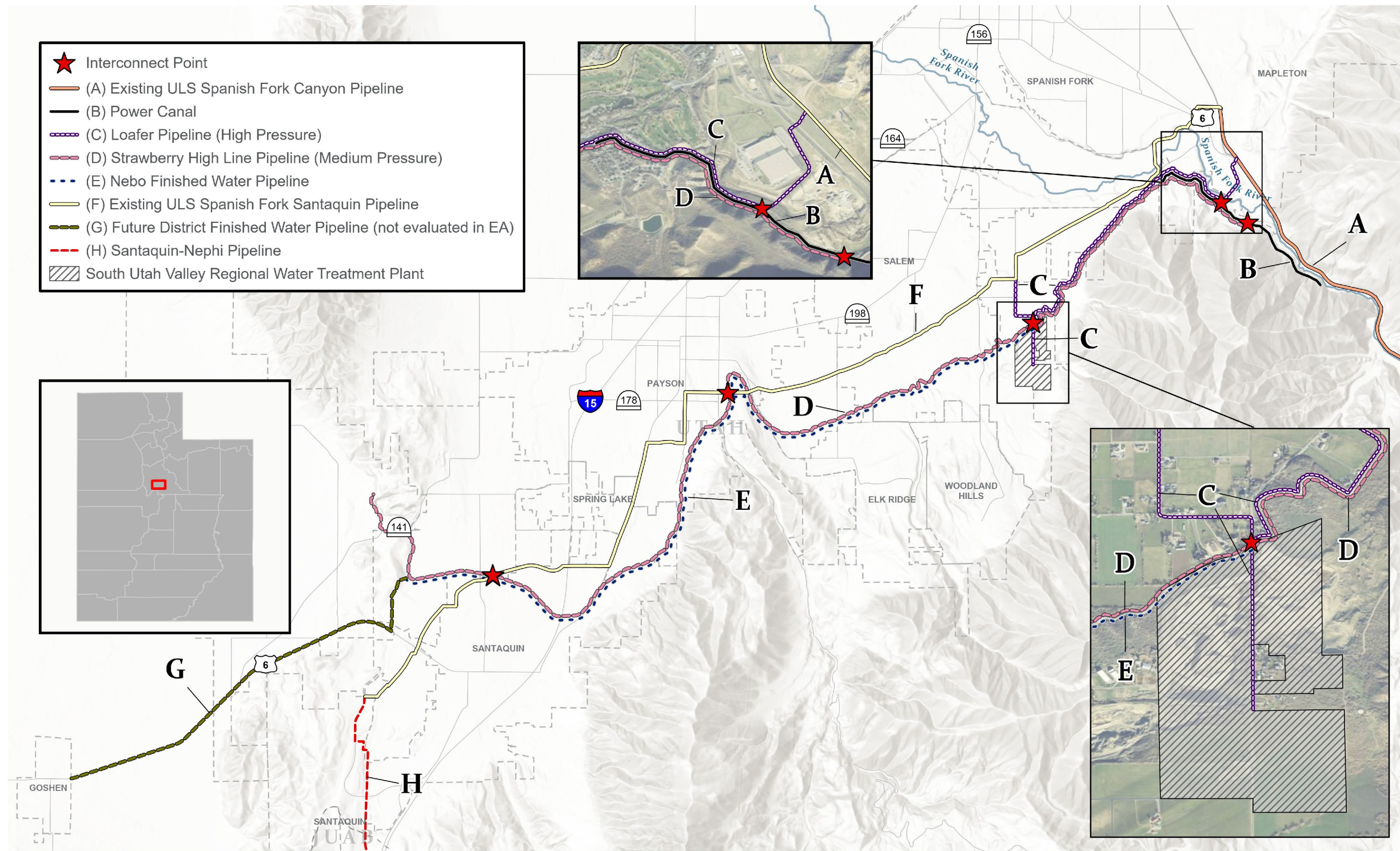
2.2.2.3 Preferred Alternative Proposed Actions

The following proposed actions are included with the Preferred Alternative:

- Strawberry High Line Canal
 - The existing Strawberry High Line Canal would be enclosed with a medium-pressure water pipeline measuring up to 84 inches in diameter. This pipeline would be called the Strawberry High Line Pipeline (see Figure 2-1, segment D). The Strawberry High Line Pipeline would receive water diverted at the Spanish Fork River Diversion, pumped to system operating pressure, beginning at a potential sediment-removal facility adjacent to the Power Canal (shown as an interconnect point in Figure 2-1). The pipeline would continue parallel to the Power Canal, then enter the Strawberry High Line Canal right-of-way, connect to the South Utah Valley Regional Water Treatment Plant site, and continue to Genola.
 - Water diverted into the Strawberry High Line Pipeline could include recaptured instream flow water (as defined in Section 1.5.6, *Instream Flows*), SVP high-flow Spanish Fork River water, and natural Spanish Fork River water. The Strawberry High Line Pipeline would also be able to convey CUP-BU water (in addition to the 1991 Contract Water).
 - The District would modify or relocate the existing turnouts from the Strawberry High Line Canal to turnouts from the Strawberry High Line Pipeline and reconnect them to the Strawberry High Line Canal Company laterals. These changes to laterals would also require license agreements with the United States and are analyzed in this EA.
- Loafer Pipeline
 - A high-pressure water pipeline measuring up to 72 inches in diameter would be connected to the Spanish Fork Canyon Pipeline, the Spanish Fork Santaquin Pipeline, and the South Utah Valley Regional Water Treatment Plant. This pipeline would be called the Loafer Pipeline (see Figure 2-1, segment C).
 - The Loafer Pipeline would have two interconnect points to the Strawberry High Line Pipeline: one in the Power Canal right-of-way and one near the South Utah Valley Regional Water Treatment Plant.
 - The Loafer Pipeline would be built within an existing Mapleton-Springville Lateral right-of-way, Power Canal right-of-way, and Strawberry High Line Canal right-of-

- way. Additionally, a portion of the Loafer Pipeline (7,600 linear feet) would be installed between the Spanish Fork Santaquin Pipeline and the South Utah Valley Regional Water Treatment Plant using public road rights-of-way in 1700 East, 10000 South, and 400 East in Salem.
- The majority of the 1991 Contract Water may be delivered from Strawberry Reservoir through the Diamond Fork System and the Spanish Fork Canyon Pipeline into the Loafer Pipeline. The 1991 Contract Water delivered in the Strawberry High Line Pipeline would be pressurized and cleaner than water currently delivered from the Power Canal or Strawberry High Line Canal because it would not be mixed with the lower-quality Spanish Fork River water.
 - The Loafer Pipeline could carry CUP-BU water and/or 1991 Contract Water.
 - Existing ULS Spanish Fork Santaquin Pipeline
 - A connection would be made between the Spanish Fork Santaquin Pipeline and the Loafer Pipeline near 100 North 400 East in Salem.
 - The Spanish Fork Santaquin Pipeline would include at least two potential interconnect points to the Strawberry High Line Pipeline: one in Payson and the other in Santaquin (see Figure 2-1, “Interconnect Point”).
 - The Spanish Fork Santaquin Pipeline would convey both CUP-BU water and 1991 Contract Water.
 - South Utah Valley Regional Water Treatment Plant
 - The District would construct a water treatment plant near 800 South 1700 East in Salem in phases. This would be a District-owned facility on District property. The total site acreage would be about 255 acres.
 - Raw water from Strawberry Reservoir or the Spanish Fork River (subject to compliance with state water right administration) could be treated at the water treatment plant at the request of contract holders. The treatment plant could provide finished water to southern Utah County and eastern Juab County.

Figure 2-1
Preferred Alternative





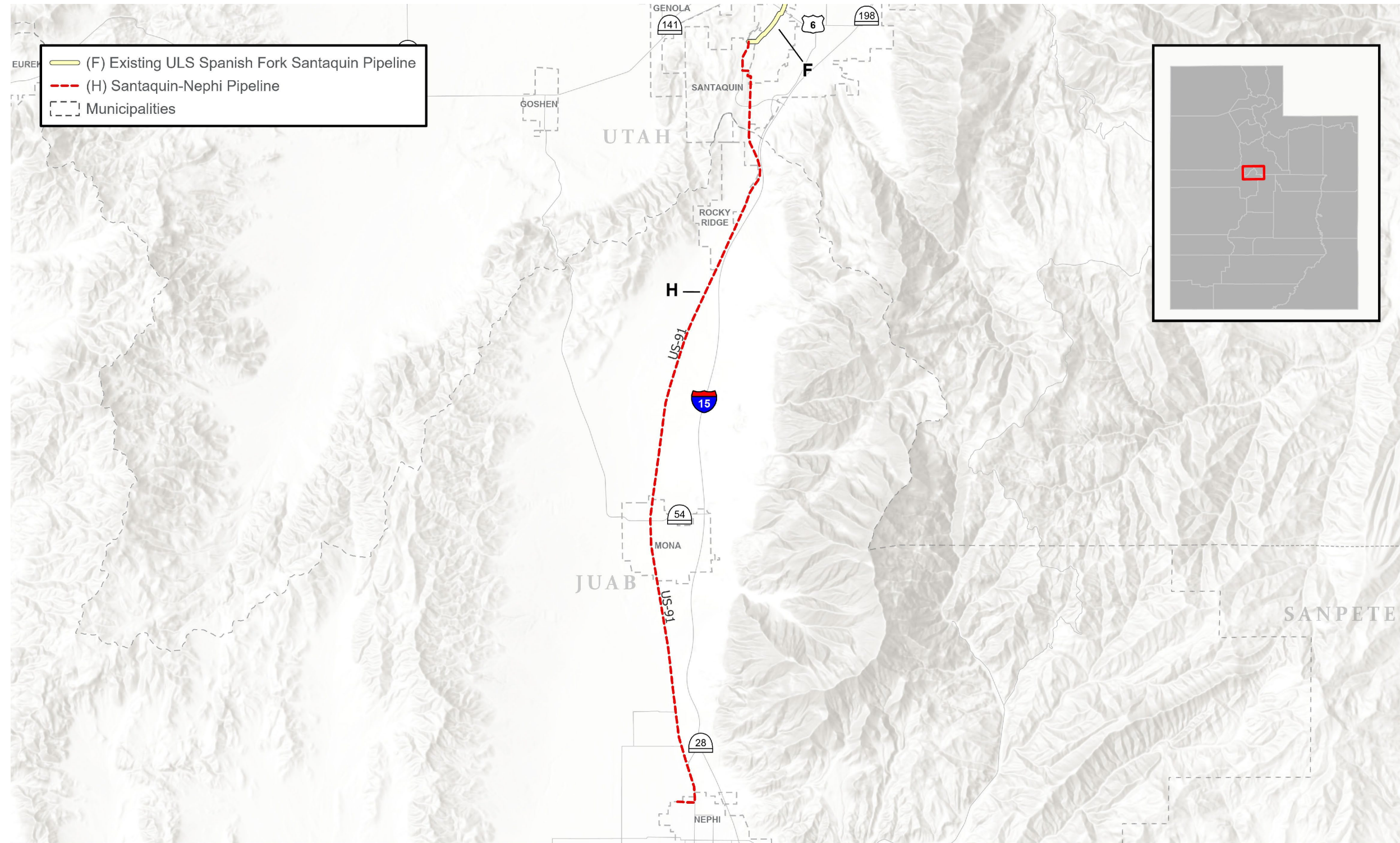
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PREFERRED ALTERNATIVE

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Figure 2-2
Santaquin-Nephi Pipeline



PREFERRED ALTERNATIVE SANTAQUIN-NEPHI PIPELINE

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- Santaquin-Nephi Pipeline
 - A federal or District pipeline (up to 36 inches in diameter) would be constructed between Santaquin and Nephi (see Figure 2-2 above, segment H).
 - The Santaquin-Nephi Pipeline would start at the south end of the Spanish Fork Santaquin Pipeline and go west to Summit Ridge Parkway. The pipeline would then go south to Rocky Ridge, Mona, and Nephi Summit Ridge Parkway right-of-way, parallel the railroad right-of-way, and then use the old US-91 right-of-way. Federal easements would be acquired from underlying landowners. A Santaquin-Mona Pipeline was previously analyzed as part of the 2004 ULS EIS to take water for the then-endangered, now-threatened June sucker to Mona Reservoir. The reservoir was to serve as a refugia for the fish. It has subsequently been determined that Mona Reservoir is not a suitable refugia for June sucker. The Santaquin-Nephi Pipeline would modify the alignment of the proposed ULS Santaquin-Mona Pipeline and extend it to Nephi.
- Construction of a Multi-use Trail
 - Utah County would provide funding to the District to construct an approximately 20-mile multi-use trail on the federally owned right-of-way on top of the Strawberry High Line Pipeline and Power Canal to the Spanish Fork River Diversion. The county would maintain the trail under a license agreement with the United States.
- Changes to Operations and Water Uses
 - The 1991 Contract Water would be allowed to be used at any time of year for any M&I use (subject to compliance with state water right administration). Currently, the 1991 Contract Water can be used for agricultural and outdoor M&I uses, but only during irrigation season. The 1991 Contract Water would be allowed to be treated at the South Utah Valley Regional Water Treatment Plant for any M&I use.
 - CUP-BU water contracted to the South Utah Valley Municipal Water Association would be allowed to be treated at the South Utah Valley Regional Water Treatment Plant for indoor use, and CUP-BU water would be allowed for use year-round.
 - Use of federal facilities for conveyance of non-federal water would be subject to the requirements of the Warren Act of February 21, 1911, Ch. 141, 36 Stat. 925, as amended). Reclamation would enter into Warren Act contracts for any non-federal water proposed for delivery through the Strawberry High Line Pipeline (see Appendix 2-A, *Warren Act Contracts*, for a list of contracts). Existing agreements under the Warren Act for the conveyance of non-federal water in federal facilities would be assigned to Interior, and new applications may be submitted to Interior in

- the future as needed. Associated water right changes would be addressed in accordance with state law.
- The Strawberry High Line Canal return flows specified in the 1921 Contract between Reclamation and the Strawberry High Line Canal Company would be relinquished by the Strawberry High Line Canal Company to the Secretary of the Interior for CUP-BU purposes by mutual cancellation of the 1921 Contract.
 - In accordance with Section 207 of P.L. 102-575, the water conserved by enclosing the Strawberry High Line Canal would be retained by the District for CUP-BU purposes.
 - Service Area Updates:
 - CUP-BU water would be allowed to be delivered to eastern Juab County in the Utah Lake drainage basin.
 - The 1991 Contract Water would be allowed to be delivered within the Utah Lake drainage basin extending as far north as the northern boundary of Springville, subject to the limitations on place of delivery identified in delivery contracts. This is considered the “Proposed NWP Service Area” (see Appendix 2-B, *Existing and Proposed Nebo Service Area*).
 - Strawberry High Line Pipeline Legal, Administrative, and Contractual Changes
 - The Strawberry High Line Pipeline would be a feature of the CUP-BU (administered by Interior) and would fulfill the water delivery operations of the Strawberry High Line Canal. With the Strawberry High Line Pipeline being a feature of the CUP-BU, the District would assume OM&R responsibility for the Strawberry High Line Pipeline. Modified or relocated turnouts for the Strawberry High Line Canal Company laterals may also be located in the U.S. government–owned property and would require license agreements with the United States.
 - Pertinent parties would enter into all necessary contracts and agreements to facilitate the implemented alternative.
 - Reclamation would transfer the title for the Strawberry High Line Canal laterals from Reclamation to the Strawberry High Line Canal Company pursuant to 43 USC Section 2901, *et seq.* This action is being analyzed as part of this EA.
 - 2004 Definite Plan Report and Existing Environmental Documents
 - The District, with the approval of Interior and consent of Congress, would supplement the 2004 Definite Plan Report to be consistent with the outcome of this current NEPA analysis. The Proposed Project tiers to and supplements parts of the

- 2004 ULS EIS. The ULS EIS Records of Decision were signed by Interior and the Mitigation Commission in 2004 and 2005. Because the ULS NEPA documents (Final EIS and Records of Decision) are older than 5 years, the JLAs evaluated their alternatives, resources addressed, and the changed conditions since they were completed. The JLAs determined that there have not been significant changes to the alternatives considered and the resources evaluated.
- Assignment of SVP Facilities, Contracts, and Administrative Responsibilities Currently Assigned to the Strawberry Water Users Association
 - The JLAs, in coordination with the Strawberry Water Users Association, would assign OM&R responsibilities of the features of the SVP currently operated and maintained by the Strawberry Water Users Association to the CUP-BU. All pertinent parties would enter into necessary contracts and agreements to facilitate the implemented alternative.
 - The District would assume OM&R responsibility for the features currently operated and maintained by the Strawberry Water Users Association. Subsequent to Congressional approval of the proposed supplement to the 2004 Definite Plan Report, federal obligations associated with SVP facilities currently operated and maintained by the Strawberry Water Users Association, including contractual responsibilities, oversight, and management, would be assigned to Interior in perpetuity.
 - Reclamation would transfer title to the three SVP power-generation facilities (Payson Power Plant and Spanish Fork Upper and Lower Power Plants) from Reclamation to the District pursuant to 43 USC Section 2901, *et seq.* In order to meet the requirements of the John D. Dingell Act (2019), a qualifying entity for title transfer must be the current operator of the facility and have the capacity to continue to manage the facility. Prior to title transfer, the District would assume responsibility for all aspects of OM&R of the SVP power-generation facilities (structures, functions, equipment, and personnel) and would have the same fundamental capability for continued power generation as the Association which has operated the facilities for decades. If the District completes this action first, it would meet the qualifying entity requirement and, if approved through this NEPA action, would then accept title to the SVP power-generation facilities.

2.2.3 Strawberry High Line Pipeline Straightening Options

The proposed Strawberry High Line Pipeline would be located in the existing Power Canal and Strawberry High Line Canal rights-of-way, with the exception of six areas in which the JLAs will consider options that could remove curves in the Strawberry High Line Pipeline alignment (see Figure 2-3):

- In Salem northeast of the South Utah Valley Regional Water Treatment Plant (Option 1 and Option 2)
- In Salem west of the South Utah Valley Regional Water Treatment Plant (Option 3)
- In Salem at the Woodland Hills Drive crossing (Option 4)
- In Salem between 100 East and 250 East (Option 5)
- In Payson, across P Mountain (also called Little Mountain) at the same location where the ULS Spanish Fork Santaquin Pipeline crosses P Mountain (Option 6)

2.2.4 Conveyance of Finished Water

There are two options for the conveyance of finished water for the Proposed Project:

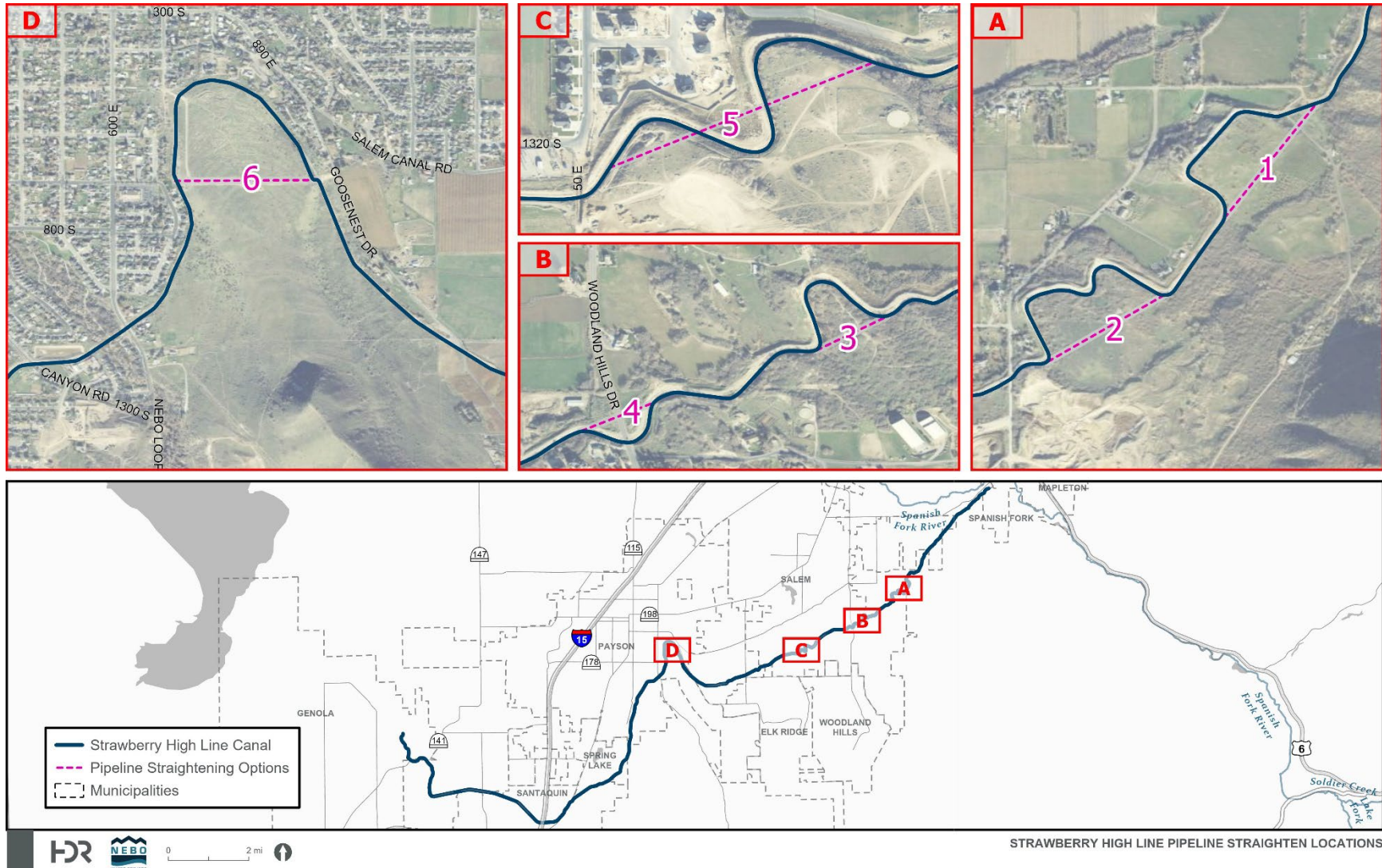
- Preferred Alternative: Nebo Finished Water Pipeline Option
- Spanish Fork Santaquin Finished Water Pipeline Option

2.2.4.1 Preferred Alternative: Nebo Finished Water Pipeline Option

The Preferred Alternative would include two pipelines in the Strawberry High Line Canal right-of-way between the South Utah Valley Regional Water Treatment Plant and Santaquin: the Strawberry High Line Pipeline and the Nebo Finished Water Pipeline (see Figure 2-1 above, segment E).

Under the Preferred Alternative, the ULS Spanish Fork Santaquin Pipeline would be maintained as a raw water pipeline. The Strawberry High Line Pipeline (raw water up to 84 inches in diameter) and the Nebo Finished Water Pipeline, which would be a District-owned pipeline (up to 78 inches in diameter), would be installed in the Strawberry High Line Canal right-of-way under a license agreement with the United States. This action is being analyzed as part of this EA. Finished water turnouts would also be built on the Nebo Finished Water Pipeline.

Figure 2-3
Strawberry High Line Pipeline Straightening Sections



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2.2.4.2 Spanish Fork Santaquin Finished Water Pipeline Option

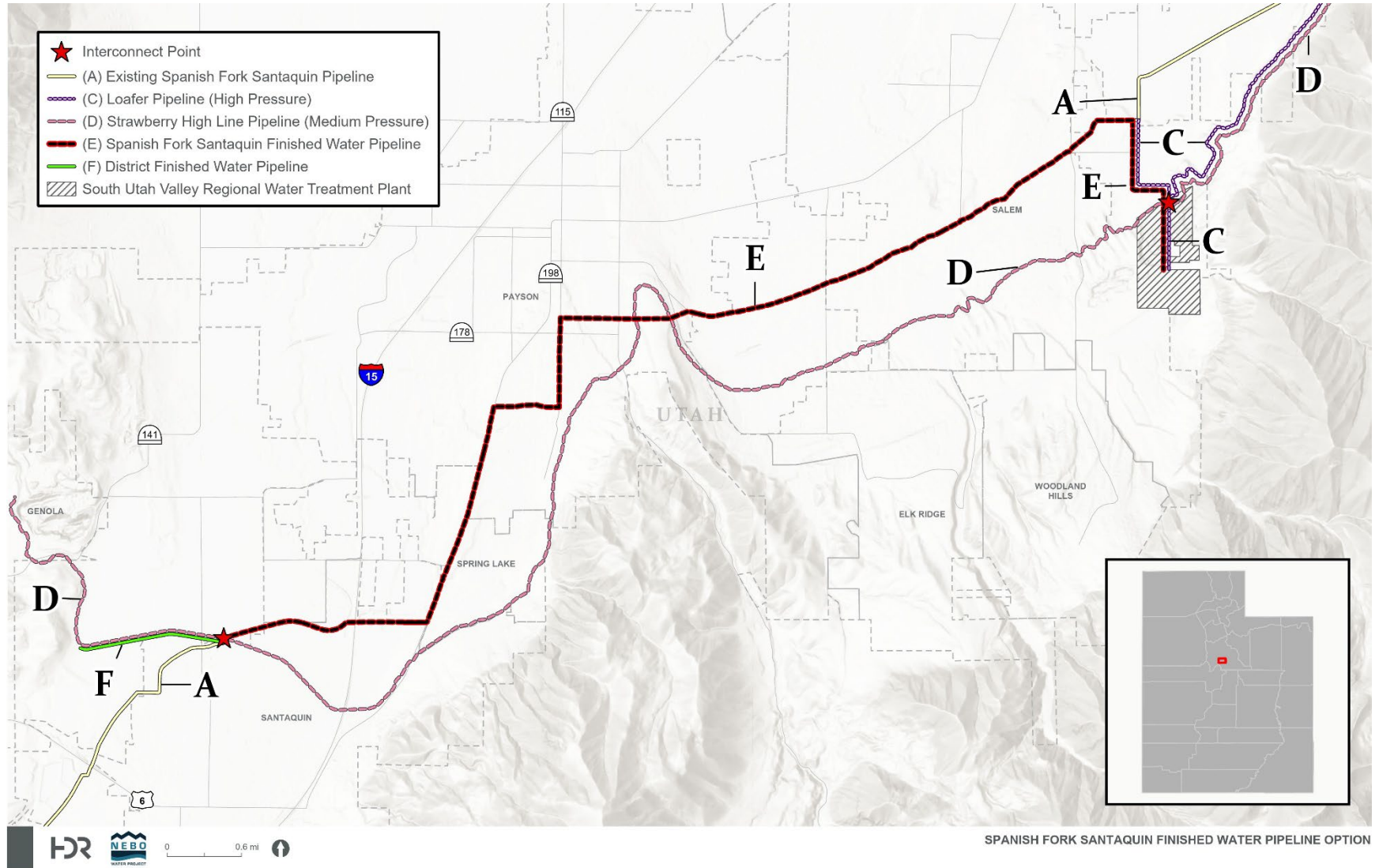
The Spanish Fork Santaquin Finished Water Pipeline Option, which is not the preferred option, would include all the actions described in Section 2.2.2, *Preferred Alternative*, but instead of the Nebo Finished Water Pipeline (described in Section 2.2.4.1, *Preferred Alternative: Nebo Finished Water Pipeline Option*) conveying finished water from the South Utah Valley Regional Water Treatment Plant, the existing ULS Spanish Fork Santaquin Pipeline would be repurposed to convey finished water for this option.

With this option, the section of the Strawberry High Line Pipeline between the South Utah Valley Regional Water Treatment Plant and Santaquin would have a larger diameter (compared to the Strawberry High Line Pipeline under the Preferred Alternative: Nebo Finished Water Pipeline Option). This would allow the Strawberry High Line Pipeline to convey the raw water currently delivered through the Spanish Fork Santaquin Pipeline.

Below is a summary of actions associated with the Spanish Fork Santaquin Finished Water Option:

- A finished water pipeline measuring up to 60 inches in diameter would be installed between the treatment plant and the ULS Spanish Fork Santaquin Pipeline using the same 1700 East, 10000 South, and 400 East alignment as the Loafer Pipeline (see Figure 2-4, segment E).
- Between the South Utah Valley Regional Water Treatment Plant and Santaquin, the existing ULS Spanish Fork Santaquin Pipeline would be flushed, disinfected, tested, and converted to a finished water pipeline (see Figure 2-4, segment E).
- The ULS Spanish Fork Santaquin Pipeline raw water turnouts between the treatment plant and Santaquin would be (1) disconnected from the ULS Spanish Fork Santaquin Pipeline and reconnected to the Strawberry High Line Pipeline, (2) vacated and relocated to the Strawberry High Line Pipeline, or (3) converted to finished water turnouts.
- A District finished water pipeline would be constructed at an interconnect point on the ULS Spanish Fork Pipeline to convey finished water west of Santaquin (see Figure 2-4, segment F). A license agreement with the United States would be required for this interconnect.
- Finished water turnouts would be built on the finished water segment of the ULS Spanish Fork Santaquin Pipeline or converted from the existing raw water turnouts.

Figure 2-4
Spanish Fork Santaquin Finished Water Option



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2.2.5 Potential Timing of Construction

Assuming completion of environmental compliance and other legal requirements, the improvements listed above for the Preferred Alternative could begin as early as 2027. The JLAs anticipate that constructing the Strawberry High Line Pipeline would likely begin in 2027, and the pipeline would become operational by 2032.

2.3 Federal Agency Decisions

The following sections summarize the decisions to be made by federal agencies acting as JLAs for the Proposed Project. The proposed actions are described in more detail in Section 2.2.2, *Preferred Alternative*, of this EA.

2.3.1 Bureau of Reclamation

The items to be decided on by Reclamation are the following:

- Whether to approve a change of the timing of water deliveries and season of use (year-round) for the 1991 Contract Water
- Whether to mutually cancel the 1921 Contract in cooperation with the Strawberry High Line Canal Company, relinquishing the associated return flows to Interior for CUP-BU purposes
- Whether to assign Strawberry High Line Pipeline facilities from the SVP (administered by Reclamation) to the CUP-BU (administered by Interior), based on Congressional approval of the 2004 Definite Plan Report. The District would be assigned OM&R and other contractual responsibilities associated with these facilities, and Interior would assume the federal contract responsibilities
- Whether to assign those facilities currently managed by the Strawberry Water Users Association from the SVP (administered by Reclamation) to the CUP-BU (administered by Interior), based on Congressional approval of the 2004 Definite Plan Report. The District would be assigned OM&R and other contractual responsibilities associated with these facilities, and Interior would assume the federal contract responsibilities
- Whether to transfer the title for the Strawberry High Line Canal laterals from Reclamation to the Strawberry High Line Canal Company
- Whether to execute a title transfer for the SVP power-generation facilities from Reclamation to the District
- Whether to enter into Warren Act contracts with any entities with non-federal water seeking to use federal facilities for storage and/or conveyance of non-federal water
- Whether to acquire lands and interest in lands in the name of the United States for construction of pipelines and associated facilities
- Whether to issue a license agreement to Utah County to authorize the construction, operation and maintenance of a trail within the federal right-of-way corridor

- Whether to authorize construction of a right-of-way or boundary fence on either or both sides of the federal right-of-way as needed for project purposes

The decisions would be the same for any of the options for the Preferred Alternative. These actions would be pursuant to the Reclamation Act of June 17, 1902 (32 Stat. 388), and the acts that amend or supplement the Reclamation Act, including but not limited to the Reclamation Project Act of 1939 (53 Stat. 1187) and Section 1 of the Warren Act of February 21, 1911 (P.L. 61-406; 43 USC Section 523).

2.3.2 U.S. Department of the Interior – Central Utah Project Completion Act Office

The decisions to be made by Interior are:

- Whether to approve a change of the timing of water deliveries and season of use (year-round) for the 1991 Contract Water
- Whether to approve changes to the water timing and use for CUP-BU water contracted under the ULS
- Whether to approve changes to the ULS pipelines, turnouts, and easements, including the Santaquin-Nephi Pipeline if it is constructed as a federal pipeline
- Whether to approve construction of pipelines to replace the Strawberry High Line Canal as a water conservation project under the authority of Section 207 of the CUPCA and include these facilities as a feature of the CUP-BU with OM&R and other associated contract responsibility assigned to the District. Interior would assume the federal contract responsibilities
- Whether to include those facilities currently managed by the Strawberry Water Users Association as features of the CUP-BU with OM&R and other associated contract responsibility assigned to the District. Interior would assume the federal contract responsibilities
- Whether to acquire lands and interest in lands in the name of the United States, and/or for construction of pipelines and associated facilities
- Whether to approve submittal to Congress of a supplement to the 2004 Definite Plan Report to be consistent with the outcome of this current NEPA analysis

The decisions would be the same for any of the options for the Preferred Alternative. These actions would be pursuant to the statutes that authorize the Central Utah Project (CUP; 43 USC Section 620); the CUPCA (P.L. 102-575, Titles II through VI); the Reclamation Act of June 17, 1902 (32 Stat. 388); the acts that amend or supplement the Reclamation Act, including but not limited to the Reclamation Project Act of 1939, Section 14 (43 USC Section 389); and Section 1 of the Warren Act of February 21, 1911 (P.L. 61-406; 43 USC Section 523).

2.3.3 Utah Reclamation Mitigation and Conservation Commission

The Mitigation Commission was created under the CUPCA to ensure that the fish, wildlife, and recreation impacts of the CUP are mitigated. The decision to be made by the Mitigation Commission is:

- Whether to approve the mitigation commitments after reviewing the alternatives and options; approval of the Preferred Alternative would result in a supplement to the 2004 Definite Plan Report

The Mitigation Commission will cooperate with the other JLAs to execute the necessary contracts and agreements to construct and operate the selected alternative in accordance with the statutory and environmental commitments in this EA and will reiterate the JLAs' previous binding environmental commitments included in the ULS Record of Decision and EIS and the 2004 Definite Plan Report.

The decisions would be the same for any of the options for the Preferred Alternative. These actions would be pursuant to the statutes that authorize the CUP (43 USC Section 620) and the CUPCA (P.L. 102-575, Titles II through VI).

2.3.4 Central Utah Water Conservancy District

The decisions to be made by the District are:

- Whether to approve construction of pipelines to replace the Strawberry High Line Canal as a water-conservation project under the authority of Section 207 of the CUPCA and include these facilities as a feature of the CUP-BU with OM&R and other associated contract responsibility assigned to the District
- Whether to accept the OM&R and other contractual responsibilities for the Strawberry High Line Pipeline facilities
- Whether to accept the OM&R and other contractual responsibilities associated with the SVP facilities currently managed by the Strawberry Water Users Association
- Whether to accept a title transfer for the SVP power-generation facilities from Reclamation to the District
- Whether to approve changes to the water timing and use for CUP-BU water contracted under the ULS
- Whether to approve changes to the ULS pipelines, turnouts, and easements, including the Santaquin-Nephi Pipeline if it is constructed as a federal pipeline
- Whether to approve submittal to Congress of a supplement to the 2004 Definite Plan Report to be consistent with the outcome of this current NEPA analysis
- Whether to fund the portions of the project that would be the responsibility of the District
- Whether to cooperate with the other JLAs to execute the necessary contracts and agreements to construct and operate the selected alternative in accordance with the statutory and environmental commitments in this EA

The decisions would be the same for any of the options for the Preferred Alternative. These actions would be pursuant to the statutes that authorize the CUP (43 USC Section 620) and the CUPCA (P.L. 102-575, Titles II through VI).

Chapter 3. Affected Environment and Environmental Consequences

This chapter describes the existing conditions in the study area and how these conditions would be affected by the No Action Alternative, Preferred Alternative, and options under the Preferred Alternative. Existing conditions were identified based on literature and data file searches; the PFP planning study; coordination with federal, state, and local agencies; and field investigations. Other technical research used to inform the EA but not discussed in this document is included in the project records.

For most resources, the study area includes the permanent, temporary, and indirect impact areas described below along with a buffer (meaning the study area is usually larger than the impact areas). The study area also includes additional areas for potential components evaluated in earlier stages of the project that are not part of the Preferred Alternative described in this EA.

The Preferred Alternative impact areas are shown on figures in Appendix 3-D.1, *Proposed Action*. The impact areas are the following:

- **Permanent Impact Areas.** These include areas that are on property owned or that would be acquired by the JLAs for water infrastructure use and have project activities where there would be permanent aboveground improvements (such as the treatment plant, pumping stations, settlement ponds, and multi-use trail). The permanent impact area also includes the Strawberry High Line Canal right-of-way, where the Loafer Pipeline and Strawberry High Line Pipeline would be constructed with the Preferred Alternative.
- **Temporary Impact Areas.** These are areas where new pipelines would be installed on properties not owned by the JLAs. These also include areas such as river crossings or diversion modifications where the above ground conditions of the impacted areas would be restored to similar conditions after construction of the Preferred Alternative.
- **Indirect Impact Areas.** These include the segment of the Spanish Fork River between Diamond Fork Creek and the Spanish Fork River Diversion where there would not be any ground disturbance, but there would be less import water in the summer with the Preferred Alternative.

The relevant impact areas and any exceptions to the study area are described at the beginning of each resource section for the resources evaluated in detail.

The impacts of the Preferred Alternative summarized in Chapter 3 include and assume implementation of these mitigation measures and environmental commitments described in Section 3.13, *Mitigation Measures and Environmental Commitments*.

3.1 Resources Not Analyzed in Detail

The resources listed in Table 3-1 either are not present in the study area or do not have a reasonable probability of being affected by the Preferred Alternative.

**Table 3-1
Resources Evaluated but Not Analyzed in Detail**

Resource	Rationale for Not Analyzing in Detail
Hazardous materials	Based on a review of the Utah Division of Environmental Response and Remediation’s databases, there are no recorded hazardous materials sites in the study area. One recorded environmental incident on 10000 S. High Oak View Drive in Salem in 2021 has been remediated. Records show that an underground petroleum storage tank was present on one of the parcels for the planned South Utah Valley Regional Water Treatment Plant. No known active hazardous materials sites would be affected by the Preferred Alternative. Two Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites, UTD980635635 (Keigley Quarry US Steel Corporation; owned by Staker) located on the north side of Goshen Gap, and UTD988074175 (Santaquin Drum Site; owned by Sunroc) located east of the Union Pacific Railroad tracks near the Utah County–Juab County boundary, are within 0.25 mile of the Project study area. The District would consider conducting Phase I Environmental Site Assessments if the Preferred Alternative could potentially affect these sites based on final design.
Prime and unique farmlands and farmlands of statewide importance	The majority of the Preferred Alternative would not cause the acquisition, modification, degradation, or disruption of prime and unique farmlands in the area. Although segments of the Strawberry High Line Canal are designated as prime or unique farmlands, this land is used for water infrastructure, not as farmland. The Strawberry High Line Pipeline Straightening Options 1 and 2 would impact 10.73 acres of land designated by the Natural Resources Conservation Service (NRCS) as “prime farmland if irrigated” that are located in an area designated as “rural” by the U.S. Census Bureau. The impacts to these prime farmlands are anticipated to be temporary during the installation of the Strawberry High Line and Loafer Pipelines, and no long-term impacts or removal of farmland are anticipated.
Utah Agriculture Protection Areas	Several parcels adjacent to the study area have been designated as Utah Agriculture Protection Areas. The Preferred Alternative would not acquire,

Resource	Rationale for Not Analyzing in Detail
	modify, degrade, or disrupt land designated as an Agriculture Protection Area.
Wilderness and wild and scenic rivers	There are no designated wilderness areas or wild and scenic rivers in the study area.
Paleontological resources	According to the letter received from the Utah Geological Survey on February 18, 2026, there are no known fossil localities in the study area, and the formations in the study area have a low potential for containing fossil remains. A copy of this letter is provided in Appendix 3-E.2, <i>Utah DNR Paleontology Correspondence</i> .
Water rights	All existing water rights would be maintained under the Preferred Alternative. Water right changes under the Preferred Alternative would be addressed in accordance with state law.
Floodplains	The Preferred Alternative would have three crossing locations in mapped floodplains: Dry Creek and Peteetneet Creek drainages in Payson and the Spanish Fork River in unincorporated Utah County. In Payson, the Preferred Alternative would remove the Strawberry High Line Canal and install two pipelines: the Strawberry High Line Pipeline and the Nebo Finished Water Pipeline. Additionally, the Preferred Alternative would add a paved multi-use trail along the enclosed Strawberry High Line Canal right-of-way. The JLAs would obtain the applicable floodplain development permits from Payson City or Utah County.
Economics	The Preferred Alternative would not have property impacts to existing businesses. There would be no adverse impacts to the local economy, business access, or tax revenues. The improved water operations resulting from the Preferred Alternative would beneficially contribute to the economy of Utah and Juab Counties.
Visual Resources	<p>The Preferred Alternative would cause short-term visual impacts while pipelines are installed using an open-trench technique. Once construction is complete, the pipelines would be buried, and there would be no permanent adverse impacts to visual resources. Disturbed areas would be reclaimed, regraded, and revegetated once construction is complete.</p> <p>The South Utah Valley Regional Water Treatment Plant would be a new facility constructed in phases on multiple vacant parcels south of the Strawberry High Line Canal near 1700 East in Salem. The design and layout of this treatment plant would be determined during the final design process and is not available as of the publication of this EA. The majority of the land at the planned treatment plant site was historically used as a gravel pit or for livestock grazing and agricultural uses.</p> <p>A multi-use trail would be licensed, constructed, and maintained on the federally owned right-of-way adjacent to or on top of the proposed</p>

Resource	Rationale for Not Analyzing in Detail
	Strawberry High Line Pipeline after the pipeline is installed. The trail would be paved and would include signs where the trail crosses local streets. The JLAs anticipate that new fencing would be installed at the property boundaries for the Strawberry High Line Pipeline to delineate the federal property and prevent encroachment.
Indian Trust Assets	Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States for Indian tribes or individuals. The National Historic Preservation Act Section 106 consultation letters sent on May 21, 2025 (see Appendix 3-E.3, <i>DOI Tribal Consultation</i>), included a request to identify any ITAs that could be present in the study area. A list of the consulted tribes is included in Appendix 4-A, <i>Scoping Summary Report</i> . As of this EA's publication, Interior has received one response—from the Northern Arapaho Tribe of the Wind River Reservation—requesting a copy of the cultural resources inventory (but not identifying any known ITAs). Interior will provide a copy of the requested inventory to the Tribe. As of this EA's publication, no ITAs have been identified in the study area. Therefore, neither the No Action Alternative nor the Preferred Alternative (including any finished water or straightening options) would have foreseeable negative impacts on ITAs.

3.2 Hydrology

The hydrology study area includes all three impact areas (permanent, temporary, and indirect).

3.2.1 Affected Environment

3.2.1.1 Spanish Fork River Baseline Hydrology

The Spanish Fork River begins at the confluence of Soldier Creek and Thistle Creek. It flows northwest through Spanish Fork Canyon and the southern part of Utah County before discharging into Utah Lake (see Figure 1-1 above). Its largest tributary, Diamond Fork Creek, enters the Spanish Fork River about 2.25 miles downstream of its origin.

The SVP altered the hydrology of the Utah Lake drainage basin by introducing a large, long-term trans-basin import of water from the Strawberry River (in the Colorado River Basin) into the Utah Lake drainage. The CUP-BU enlarged Strawberry Reservoir, increasing the amount of water being transferred from the Colorado River Basin to the Bonneville Basin.

In addition to increasing the total water volume in the Utah Lake drainage basin, the SVP and CUP-BU have altered the timing and distribution of flows in the watershed. Water storage in Strawberry Reservoir allows releases to be managed based on agricultural and municipal demand rather than natural snowmelt runoff patterns. This regulation shifts water availability toward the

summer growing season, affecting streamflow characteristics in the Spanish Fork River and contributing to more sustained inflows to Utah Lake during dry periods.

In addition to natural flows in Sixth Water and Diamond Fork Creeks, minimum instream flows were also established by CUPCA legislation and optimized as part of the Diamond Fork Environmental Update Project (see Section 1.5.6, *Instream Flows*). During irrigation season, minimum instream flows are met with a combination of natural hydrology and the delivery of 1991 Contract Water. During irrigation season, the majority of the 1991 Contract Water is released from the Spanish Fork Flow Control Structure into Diamond Fork Creek just above the confluence with the Spanish Fork River. This water artificially increases the flow in the Spanish Fork River during the summer, based on agricultural water right demands, for 4 miles of the river between the Diamond Fork Creek confluence and the Spanish Fork River Diversion.

The first 390 cfs of Spanish Fork River natural flows are allocated under the Dunford Decree. Under normal operations during the summer, all natural flows are diverted for agricultural water rights.

The Spanish Fork River Diversion can be dry-dammed (meaning all water is diverted from the river) with the exception of a small amount of water that is allowed to bypass the diversion to be delivered to the East Bench Canal (which is also a dry dam) or at times of poor water quality from storm runoff. The Spanish Fork River is essentially dry-dammed for 4.3 miles (below the Spanish Fork River Diversion), until the flows that were not diverted into the Strawberry High Line Canal at the Power Canal forebay are either diverted after going through the Upper Spanish Fork Hydroelectric Facility or returned to the Spanish Fork River after going through the Lower Spanish Fork Hydroelectric Facility. After the Lower Spanish Fork Hydroelectric Facility, the water is either diverted at Spanish Fork City Dam or continues in the Spanish Fork River. Spanish Fork City Dam can also be dry-dammed. Lakeshore Dam and Huff Dam are downstream of Spanish Fork City Dam before the Spanish Fork River enters Utah Lake and can also be dry-dammed.

In the winter, the Diamond Fork Creek instream flows reach the Spanish Fork River and stay in the river for 4 miles before being diverted by Spanish Fork River Diversion for power generation at the Upper and Lower Spanish Fork Hydroelectric Facilities (the river is usually dry-dammed). The Spanish Fork River's natural flows and water that is supplemented to provide the Diamond Fork Creek instream flows are returned to the Spanish Fork River below the Upper and Lower Spanish Fork Hydroelectric Facilities.

Agricultural return flows from 1991 Contract Water and the CUP-BU further influence basin hydrology. Return flows are diverted water that returns to the natural system after its intended use. Some of the diverted water applied to agricultural land percolates to groundwater or returns

to surface streams, eventually reaching Utah Lake. M&I indoor water after its use is treated at a wastewater treatment facility before being discharged to Utah Lake. These return flows contribute to lake levels and baseflow conditions but also complicate hydrologic accounting and water rights administration.

Overall, the SVP and the CUP-BU have altered the Utah Lake drainage basin from a system driven primarily by local precipitation and runoff into one influenced by imported and regulated water supplies.

3.2.1.2 Rainfall-runoff Hydrology

Existing pluvial flows from upland drainage areas in Utah County are currently being captured and conveyed in the open channel of the Strawberry High Line Canal. Although the Strawberry High Line Canal is not maintained as a flood-control facility or used for flood management, the canal does intercept small amounts of stormwater runoff and contains those flows.

The Strawberry High Line Canal presents a flood risk to the residential development below the canal due to geological instability in the area.

3.2.2 Environmental Consequences

3.2.2.1 No Action Alternative

Under the No Action Alternative, the 1991 Contract Water delivered from Strawberry Reservoir would continue to be discharged at the Spanish Fork Flow Control Structure and conveyed in the Spanish Fork River between Diamond Fork Creek and the Spanish Fork River Diversion. The water volumes in the Spanish Fork River in this reach would not change from existing conditions.

In the winter, the Diamond Fork Creek instream flows would continue to be conveyed in the Spanish Fork River and stay in the river for 4 miles before the Spanish Fork River Diversion for power generation at the Upper and Lower Spanish Fork Hydroelectric Facilities. The Spanish Fork River's natural flows and water that is supplemented to provide the Diamond Fork Creek instream flows would continue to be returned to the Spanish Fork River below the Upper and Lower Spanish Fork Hydroelectric Facilities.

Return flows would not change from existing conditions with the No Action Alternative but are anticipated to increase over time as water uses convert from agricultural to M&I.

The canal would continue to convey small amounts of unauthorized stormwater runoff from upland areas and would continue to present a flood risk to development downstream due to the aging canal infrastructure and geological instability.

The geological risk, and risk due to aging infrastructure, increase the possibility of flooding the encroaching communities if the canal embankment were to breach.

3.2.2.2 Preferred Alternative

The impacts of the Preferred Alternative to hydrology would be due to changes in the timing and use of the 1991 Contract Water and CUP-BU water (for example, converting agricultural water to M&I water and allowing year-round M&I use rather than just during irrigation season). The changes in timing and use could affect aquifer recharge patterns, stream flow volumes, and return flow volumes and timing.

Spanish Fork River between Diamond Fork Canyon and Spanish Fork River Diversion.

Flows in the Spanish Fork River between Diamond Fork Canyon and the Spanish Fork River Diversion have been a combination of natural runoff and import water delivered from Strawberry Reservoir that includes both 1991 Contract Water to meet agricultural demands and CUP-BU water for instream flows.

As part of the Preferred Alternative, import water from Strawberry Reservoir contracted with Strawberry High Line Canal Company and other irrigation companies may be conveyed using the Diamond Fork System, the Spanish Fork Canyon Pipeline, the Loafer Pipeline, and the Strawberry High Line Pipeline. The import water that would be conveyed in the Spanish Fork River between the Diamond Fork Creek confluence and the Spanish Fork River Diversion would be the water required to meet minimum instream flows in Sixth Water and Diamond Fork Creeks. Thus, to conservatively estimate Spanish Fork River flows in this reach for the Preferred Alternative, flows delivered to the Strawberry High Line Canal Company and irrigation companies were subtracted from the flows measured at U.S. Geological Survey (USGS) gage 10150500 (Spanish Fork at Castilla, Utah), except for the amount delivered for instream flows.

Under the Preferred Alternative, there would be no change to the peak flows that occur during spring runoff or the winter minimum flows in this reach. The changes to water volumes would occur between April and September.

As shown in Table 3-2 and Appendix 1-A, *Spanish Fork River Historical Data Technical Report*, the 1991 Contract Water (which includes the water volumes identified as Strawberry High Line Canal Company and irrigation companies in Appendix 1-A) contributed, on average, about 5% of the Spanish Fork River flows during April, about 25% during May, about 51% during June, about 65% during July and August, and about 59% during September between October 2016 and September 2024 (water year 2017 through water year 2024). Under the Preferred Alternative, the average monthly water flow in the Spanish Fork River (using 2017 to 2024 historic data) could decrease by about 74 to 250 cfs between May and September. With

these reductions in water volumes, the JLAs estimate that the water level could decrease by about 0.23 to 0.78 foot between May and September (for more information about these calculations, see Appendix 3-A, *Spanish Fork Gage Height Technical Memorandum*).

Table 3-2
Spanish Fork River Flows 2017 to 2024

Month	Natural Flows (cfs) (All Import Water Removed)	No Action Alternative (2017 to 2024 Average Monthly Flow) (cfs)	Preferred Alternative Projected Average Monthly Flow ^a (cfs)	Reduction in Flow under the Preferred Alternative (cfs)	Percentage Reduction in Flow under the Preferred Alternative
January	58.9	80.8	80.8	0	0%
February	67.7	89.1	89.1	0	0%
March	100.6	122.3	122.3	0	0%
April	267.9	297.9	291.7	-6.23	-5%
May	459.4	563.8	489.4	-74.46	-25%
June	205.8	447.1	238.9	-208.15	-51%
July	102.1	390.2	140.1	-250.13	-65%
August	82.2	332.5	119.8	-212.66	-64%
September	63.2	244.1	100.1	-143.93	-59%
October	72.0	96.5	96.5	0	0%
November	58.6	79.8	79.8	0	0%
December	55.6	77.4	77.4	0	0%

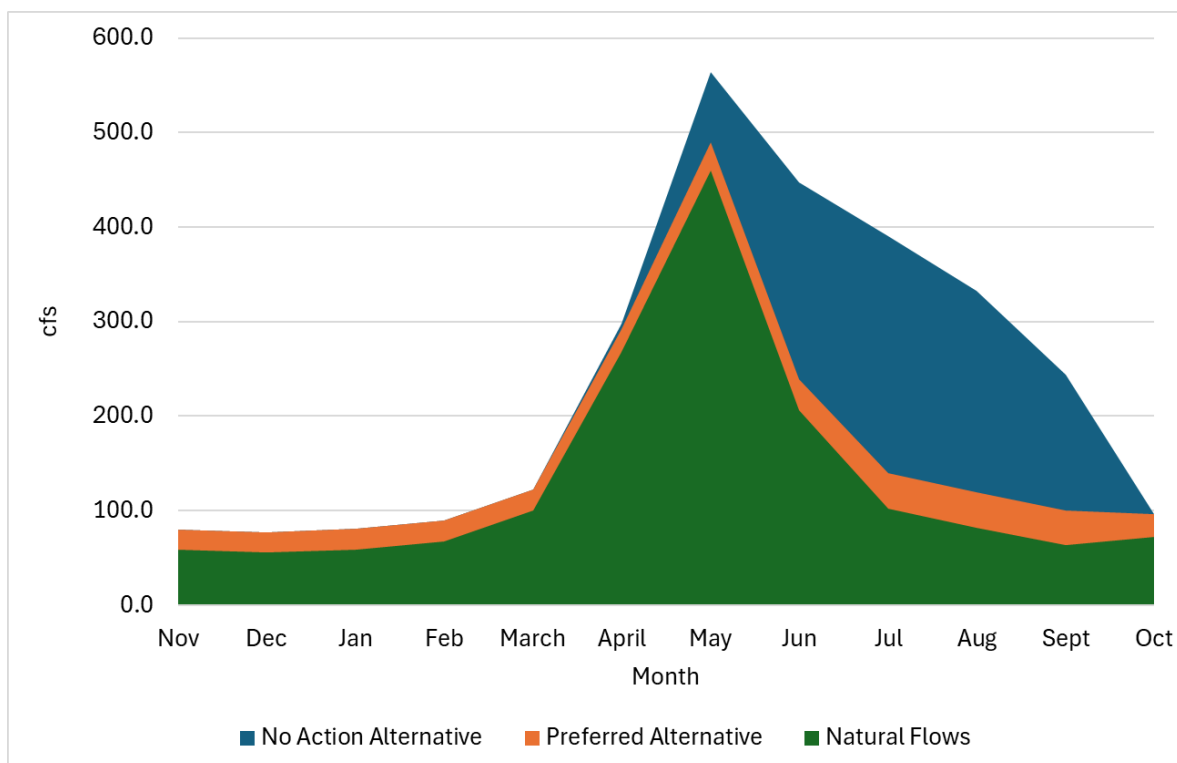
Source: Appendix 1-A, *Spanish Fork River Technical Report*

^a Preferred Alternative Average Monthly Flow is calculated using the average monthly flows from the 2017 to 2024 period and removing the import water from Strawberry Reservoir that goes to the Strawberry High Line Canal Company and irrigation companies. It includes the Diamond Fork Creek instream flow water.

Although there would be reductions to the quantity of water in the Spanish Fork River between April and September, the Preferred Alternative would be more representative of natural hydrologic conditions prior to the SVP. For over 100 years, the Spanish Fork River below the Diamond Fork Creek confluence has been artificially supplemented due to 1991 Contract Water and import instream flow water from Strawberry Reservoir being discharged to and conveyed in the Spanish Fork River. As shown in Table 3-2 above and Figure 3-1 below, the water volumes under the Preferred Alternative would still be greater than the natural flows. Based on the information above and with the mitigation measures and environmental commitments

(in Section 3.13, *Mitigation Measures and Environmental Commitments*), the Preferred Alternative’s impacts to the Spanish Fork River hydrology would not be significant.

Figure 3-1
Monthly Average Flows in Spanish Fork River from 2017 to 2024



Water quality impacts from the reduction in flows in the Spanish Fork River are discussed in Section 3.4, *Water Quality*. Impacts to wetlands, riparian areas, threatened and endangered species, and wildlife resources from the reduction in flows in the Spanish Fork River are discussed in Section 3.5, *Wetlands and Other Waters of the United States*; Section 3.6, *Riparian Areas, Vegetation, and Noxious Weeds*; Section 3.7, *Threatened and Endangered Species*; and Section 3.8, *Wildlife Resources*, respectively.

Spanish Fork River below Spanish Fork River Diversion to Utah Lake. Section 1.5.6, *Instream Flows*, describes the instream flows delivered from Strawberry Reservoir to Sixth Water and Diamond Fork Creeks to supplement the natural flows. During the non-irrigation season, the water released from Strawberry Reservoir to meet the instream flow requirements is CUP-BU import water. From 2015 to 2019, the District, the Mitigation Commission, and Interior conducted a study to evaluate Sixth Water and Diamond Fork Creeks’ instream flows and to identify flow regimes that would improve their ecological function (Wilcock and others 2019). In 2022, an Environmental Assessment was prepared and a FONSI was signed that adjusted the

instream flows on Sixth Water and Diamond Fork Creeks based on the results of the study (District and others 2022). During the instream flow study and the NEPA process, import water delivered from Strawberry Reservoir was lowered to conduct the instream flow analysis in the creeks and due to valve issues at the Sixth Water Flow Control Structure. The figures and tables in Appendix 1-A, *Spanish Fork River Historical Data Technical Report*, show these lower import water deliveries.

During the non-irrigation season, flows in the Spanish Fork River between 2017 and 2024 averaged 77 to 122 cfs, which is a combination of water natural to the drainage basin (averaging 56 to 101 cfs) and import water delivered from Strawberry Reservoir to meet minimum instream flows in Sixth Water and Diamond Fork Creeks (average of 26 cfs with a range between 21 and 31 cfs depending on natural hydrologic conditions).

Projections show that, as the population increases, M&I indoor demand increases (Jacobs 2021). At some point in the future, the non-irrigation-season import water delivered from Strawberry Reservoir would be diverted at the Spanish Fork River Diversion, as it currently is, but then would be sent to the South Utah Valley Regional Water Treatment Plant and used for M&I indoor purposes. This water would no longer return to the river after passing through the Upper and Lower Spanish Fork Hydroelectric Facilities and would not continue on to Utah Lake.

Therefore, under the Preferred Alternative, flows in the Spanish Fork River below the Upper and Lower Spanish Fork Hydroelectric Facilities would be reduced during non-irrigation season by an average of 26 cfs, which would represent about a 20% to 33% decrease in non-irrigation flows compared to the No Action Alternative. All natural flows during the non-irrigation season would continue to be discharged and conveyed in the Spanish Fork River and continue to Utah Lake.

Based on the information above and with the mitigation measures and environmental commitments (in Section 3.13, *Mitigation Measures and Environmental Commitments*), the Preferred Alternative would maintain all natural hydrology for the Spanish Fork River below the Spanish Fork City Dam during non-irrigation season, and these impacts would not be significant.

3.2.2.2.1 Strawberry Reservoir Impacts

Based on the explanation above concerning the Preferred Alternative changing the timing and use of water as land use converts from agriculture to M&I, the Strawberry Reservoir elevations would generally be higher because the demand would be spread more equally throughout the year (see Figure 9 and Table 9 in the Nebo Regional Water Project RiverWare Modeling memo in Appendix 3-B, *PWRE Modeling Technical Memorandum*). This is considered a beneficial impact.

3.2.2.2.2 Utah Lake Return Flow and Elevation Impacts

An increase in Utah Lake return flows is anticipated as the higher consumptive agricultural water use is converted to the lower consumptive M&I indoor uses. For the Utah Lake return flow analysis, the modeling assumed that 80% of the indoor M&I water and 35% of the agricultural water returns to the natural system (see Table 4 in the Precision Water Resource Engineers memo in Appendix 3-B). After indoor M&I water is used, it is treated at a wastewater treatment plant and discharged to Utah Lake without additional depletions.

The Preferred Alternative would deliver to East Juab County up to 6,000 AF of water conserved by piping the Strawberry High Line Canal. Initially, Utah Lake return flows and the lake's elevation would be slightly lower due to the 6,000 AF of conserved water being delivered to Juab County. However, as agricultural demand decreases and M&I indoor demand increases, the return flows to Utah Lake increase and lake elevation increases. Figure 22 and Table 10 in the Nebo Regional Water Project RiverWare Modeling memo in Appendix 3-B show the return flows to Utah Lake increasing and the lake elevation fluctuating less than under the No Action Alternative over time due to increased M&I indoor use. This is considered a beneficial impact.

3.2.2.2.3 Stormwater and Flood Risk

Stormwater conveyance would also be modified under the Preferred Alternative. During final design, the District would coordinate with the local municipalities to account for and address stormwater runoff that is currently intercepted by the Strawberry High Line Canal that would not be intercepted by the enclosed pipeline under the Preferred Alternative so as to not cause additional potential flooding to the communities that are located below the canal and pipeline.

The Preferred Alternative would reduce flood risk to adjacent development by containing the canal flows in a pipeline. This is considered a beneficial impact.

3.2.2.2.4 Strawberry High Line Pipeline Straightening Options and Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would have the same impacts to hydrology as the Preferred Alternative.

3.3 Groundwater

The groundwater study area includes only the permanent impact area; the focus is on the areas near the existing Strawberry High Line Canal where there could be reductions in incidental recharge.

3.3.1 Affected Environment

The Strawberry High Line Canal impacts groundwater hydrology through leakage in its unlined segments. Seepage losses from the canal provide a source of incidental recharge to the underlying alluvial and shallow bedrock aquifers along the canal alignment, particularly where permeable soils and fractured materials are present. This recharge can locally elevate groundwater levels, support base flow in nearby streams and springs, and contribute to shallow groundwater storage that can be used by wells downgradient. Over time, sustained canal leakage can create linear zones of enhanced recharge that artificially influence groundwater flow directions and hydraulic gradients near the canal. Utah law does not require a senior canal or appropriator to continue operating in an inefficient manner to preserve incidental seepage or return flows that could affect groundwater levels.

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

With the No Action Alternative, the leakage from the Strawberry High Line Canal would continue and would likely increase as the canal's condition deteriorates. Groundwater levels and conditions near the canal would remain similar to existing conditions.

3.3.2.2 Preferred Alternative

The impacts of the Preferred Alternative assessed in this section are related to how enclosing the Strawberry High Line Canal would alter groundwater recharge and, consequently, water supply to regional groundwater users. For over 100 years, seepage from the Strawberry High Line Canal has artificially or incidentally elevated groundwater levels near the canal. Enclosing the Strawberry High Line Canal would reduce or eliminate leakage, resulting in less groundwater recharge and effectively eliminating evaporation from the canal. Reducing this incidental recharge could result in local declines in groundwater levels or changes in groundwater–surface water interactions, depending on site-specific hydrogeologic conditions and the degree to which canal seepage currently contributes to replenishment of the aquifer.

Using the Southern Utah Valley Groundwater Flow Model (SUGFM), initially constructed in 1995 by USGS and the Utah Department of Natural Resources (Brooks and Stolp 1995), groundwater in the Utah Lake drainage area was analyzed to determine the expected impacts

from the Preferred Alternative. The model simulates groundwater conditions in southern Utah Valley and Goshen Valley, covering portions of the Spanish Fork River and Utah Lake watersheds. It was most recently updated in 2020 to support groundwater management and safe yield estimates (HAL 2020). The updated model covers the period 1949 to 2024 and incorporates transient simulations to account for historical and projected variations in recharge, pumping, and surface water–groundwater interactions.

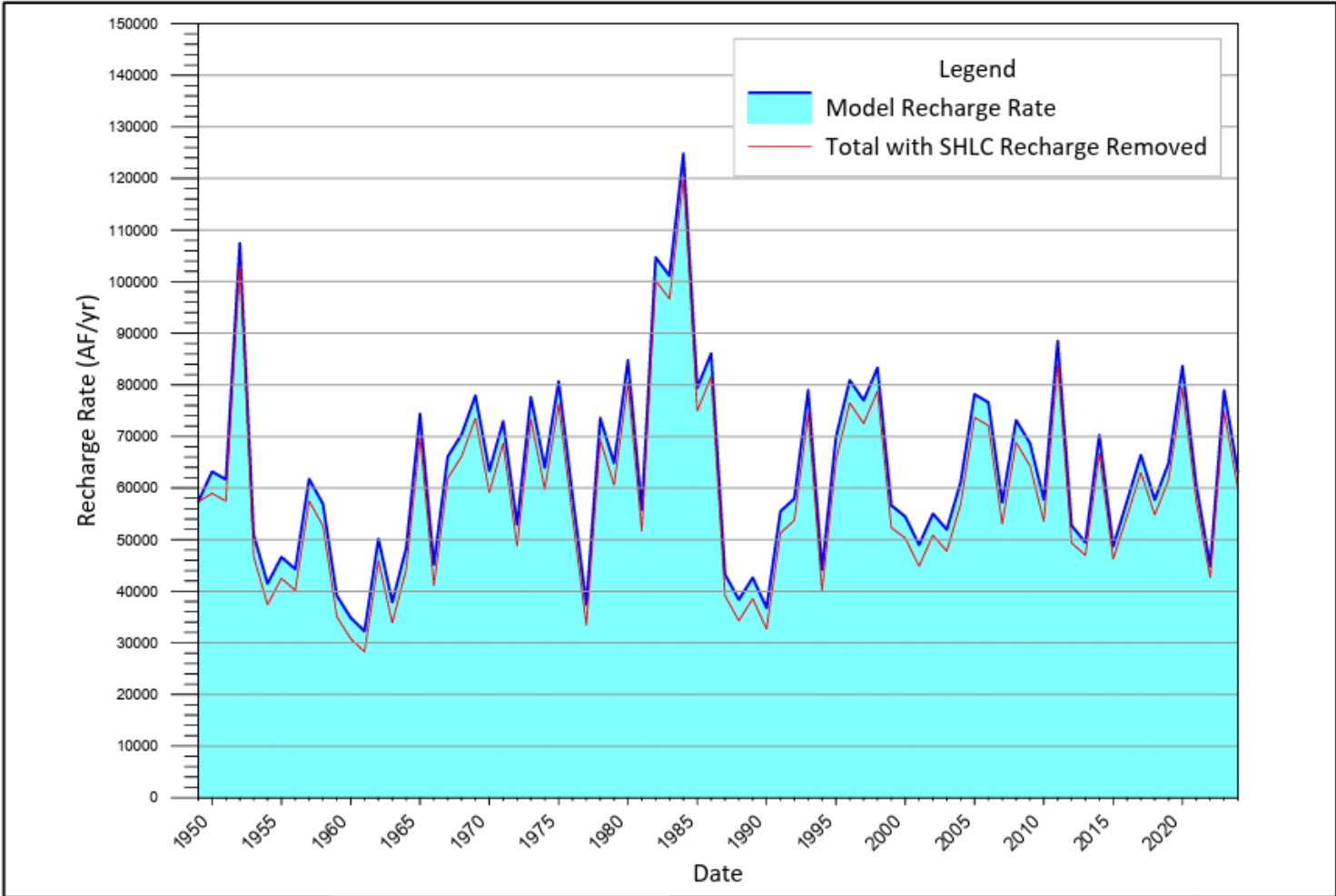
The model includes groundwater inflows (recharge) from precipitation, agricultural return flows, and seepage from canals, ditches, and other surface water features. Simulated seepage from the Strawberry High Line Canal averaged about 4,064 acre-feet per year from 1949 to 2024. A 100-year simulation was compiled using the last reported value for pumpage, carried forward unchanged for the simulation period. Recharge rates were set to average values from 1949 to 2024, and streamflow rates were set to average values over the transient calibration period. Figure 3-2 shows that there would be minor changes to the model recharge rates without the seepage from the Strawberry High Line Canal. The results of this modeling are summarized in a 2025 report (Clear Creek Associates 2025).


The greatest simulated impacts coincide with the unlined segments of the canal (located in the Payson area and the area between Salem and Moark Junction) that are responsible for most of the current leakage. The groundwater model simulates that influence on the water table lessens with distance from the canal and is no longer evident beyond about 3 miles.

The modeling predicts that the decrease in groundwater levels would occur within the first 25 years of enclosing the canal, so that water table elevations in 2050 are nearly identical to those in 2125. Pumping rates for wells in southern Utah Valley and Goshen Valley remained constant throughout the simulation and appeared to be unaffected by the declines in water table elevations. Similarly, because the water table along the Strawberry High Line Canal is typically far below the surface, the declines in water table elevations would have little impact on surface water features. More details and assumptions are included in a 2025 report (Clear Creek Associates 2025).

Although there could be reductions to the groundwater levels near the Strawberry High Line Canal, the impacts would be minor because the Preferred Alternative would be more representative of natural groundwater conditions for the area around the canal. For over 100 years, seepage from the Strawberry High Line Canal has artificially elevated groundwater levels near the canal.

Figure 3-2
Simulated Change in Groundwater Model Recharge Rate with and without Strawberry High Line Canal



	8777 North Gainey Center Drive Suite 250 Scottsdale, Arizona 85258 (480) 659-7131	Annual Model Recharge Rates with/without Strawberry Highline Canal 1949-2024 South Utah Valley Groundwater Flow Model	FIGURE 11
	March 20, 2026		

3.3.2.2.1 Strawberry High Line Pipeline Straightening Options and Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would have the same impacts to groundwater as the Preferred Alternative because the canal would still be piped.

Summary. Utah law does not require a senior canal or appropriator to continue operating in an inefficient manner to preserve incidental seepage or return flows that could affect groundwater levels. Based on the information above and with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*, the Preferred Alternative's impacts to groundwater would not be significant.

3.4 Water Quality

The water quality study area includes all three impact areas (permanent, temporary, and indirect).

3.4.1 Affected Environment

Under the authority delegated by the U.S. Environmental Protection Agency (EPA) to enforce the Clean Water Act, the Utah Department of Environmental Quality (UDEQ) sets standards for water quality to protect, restore, and preserve water quality in the state. These standards include the determination of beneficial uses (uses of water that provide benefits to people and other forms of life) and an antidegradation policy.

Table 3-3 lists the surface water assessment units in the evaluation area and the beneficial uses, impairments, and total maximum daily load (TMDL) status for each assessment unit.

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

With the No Action Alternative, the 1991 Contract Water delivered from Strawberry Reservoir would continue to be discharged to and conveyed in the Spanish Fork River between Diamond Fork Creek and the Spanish Fork River Diversion. Water quality in the Spanish Fork River would not change. Table 3-3 below and Appendix 3-C, *Water Quality Supporting Information*, have more detailed information about the No Action Alternative's water quality. As shown below in Table 3-3, the segment of the Spanish Fork River downstream of the Spanish Fork River Diversion is impaired for *Escherichia coli* (*E. coli*), and Soldier Creek, an upstream tributary of the Spanish Fork River, is impaired for total phosphorus due to the presence of highly erodible soils in the upstream watershed (UDEQ 2006).

**Table 3-3
Surface Water Beneficial Uses, Impairments, and TMDL Status in the Evaluation Area**

Water Body Assessment Unit and Reach	Beneficial Uses	Impairments	TMDL Status
Spanish Fork River-2: Moark Junction Diversion ^a to the confluence of Thistle Creek and Soldier Creek	2B, 3A, 4	None	NA
Spanish Fork River-1: Utah Lake to the Moark Junction Diversion ^a	2B, 3B, 3D, 4	<i>E. coli</i>	TMDL needed
Diamond Fork-1 ^b : Diamond Fork Creek from Spanish Fork River to Three Forks	2B, 3A, 4	None	NA
Beer Creek (Utah County): Beer Creek from 4850 West (in NE1/4NE1/4 sec. 36, T.8.S., R.1.E.) to headwaters (including tributaries such as Peteetneet Creek)	2B, 3C, 4	<i>E. coli</i> , dissolved oxygen, benthic macroinvertebrates bioassessments	TMDL needed

Sources: Utah Division of Water Quality 2024; Utah Administrative Code (UAC) R317-2-13, Classification of Waters of the State, as in effect September 22, 2025

Definitions: *E. coli* = *Escherichia coli*; NA = not applicable

Beneficial use definitions: 2B: Infrequent primary-contact recreation; 3A: Cold-water fishery/aquatic life; 3B: Warm-water fishery/aquatic life; 3C: Non-game fish and other aquatic life; 3D: Waterfowl, shore birds, and other water-oriented wildlife (includes aquatic organisms in their food chains); 4: Agricultural uses

^a The Moark Junction Diversion is called the Spanish Fork River Diversion in this study.

^b Diamond Fork Creek is not in the evaluation area, but it affects Project water quality.

Utah County and the cities of Spanish Fork, Salem, and Payson have each been issued a municipal separate stormwater sewer system (MS4) permit under the Utah Pollutant Discharge Elimination System (UPDES); this permit allows discharging stormwater to waters of the state.

3.4.2.2 Preferred Alternative

3.4.2.2.1 Spanish Fork River Impacts

Spanish Fork River between Spanish Fork River Diversion and Spanish Fork City Dam. In the future, after the South Utah Valley Regional Treatment Plant has been built and there is demand for additional indoor water, the Diamond Fork Creek instream flows could be diverted at the Spanish Fork River Diversion and treated at the treatment plant and would not return to the river below the Upper and Lower Spanish Fork Hydroelectric Facilities as they do now during the winter. The removal of all of the instream flows would represent 20% to 33% of the total flows of the No Action Alternative. These assumptions would represent the most conservative or worst-case assumptions. This reduction of water quantity downstream of the diversion would not impact water quality in this segment of the river. Because the water quality would have already

mixed with the natural Spanish Fork River water above the Spanish Fork River Diversion, the water quality would be the same where it returns to the river below the hydroelectric facilities. Section 3.2, *Hydrology*, provides a description of water volume changes in the Spanish Fork River.

Spanish Fork River between Diamond Fork Creek and Spanish Fork River Diversion. The main effect on water quality under the Preferred Alternative would be a result of the water volume changes that would occur in the Spanish Fork River. These changes would make the water quality in the Spanish Fork River below the Diamond Fork Creek confluence more representative of the natural water quality. For over 100 years, this reach has artificially had higher water quantity volumes during irrigation season due to the 1991 Contract Water from Strawberry Reservoir being discharged to and conveyed in the Spanish Fork River. These higher volumes resulted in water quality improvement compared to natural flows. Some degree of water quality improvement over the natural flows would still be provided because the Diamond Fork Creek instream flows would remain in the river between the Diamond Fork Creek confluence and the Spanish Fork River Diversion. The EA assumptions, which assume that all import water from Strawberry Reservoir (except for the instream flows) is kept in the Spanish Fork Canyon Pipeline and not discharged into the Spanish Fork River, are also conservative or worst-case assumptions.

It is difficult to determine with certainty what the resulting water quality will be due to these seasonal flow reductions in the Spanish Fork River between the Spanish Fork Flow Control Structure and the Spanish Fork River Diversion would be. These aquatic systems are highly dynamic, and water quality is driven by physical, chemical, and biological processes. This section qualitatively analyzes the expected water quality impacts for a number of parameters. Appendix 3-C, *Water Quality Supporting Information*, provides additional information regarding the expected impacts, including some water quality data that has been collected by the District. In general, the 1991 Contract Water from Strawberry Reservoir and Diamond Fork Creek flows has water quality that is better than the natural water quality of Spanish Fork Creek.

Pathogens. As shown above in Table 3-3, the segment of the Spanish Fork River downstream of the Spanish Fork River Diversion is impaired for *Escherichia coli* (*E. coli*). It is unknown whether sources of *E. coli* upstream of the Spanish Fork River Diversion might be contributing to the *E. coli* impairment downstream of the diversion. The reduction of water from Strawberry Reservoir that is available for mixing could increase pathogen concentrations in both Spanish Fork River assessment units.

Water Temperature. The decreased flow and lower water depth in the Spanish Fork River would be exposed to the same amount of solar radiation from the sun, which could elevate water

temperatures. The lower water depth could also increase the magnitude of temperature swings because less instream water would heat up faster during the day and cool down faster overnight.

Turbidity. Turbidity is likely to increase due to the reduction of lower-turbidity water available for mixing with the higher-turbidity water that naturally occurs in the Spanish Fork River upstream of the Diamond Fork Creek confluence. To a lesser extent, the anticipated decrease in velocity could decrease turbidity through less stream bank erosion that can occur with higher flows.

pH. Levels of pH in the Spanish Fork River would remain about the same because pH levels are similar across all water sources.

Nutrients (Nitrogen and Phosphorus). Phosphorus and nitrogen concentrations are likely to increase because the Spanish Fork River would not benefit from mixing with the 1991 Contract Water from Strawberry Reservoir that has lower phosphorus and nitrogen concentrations.

Dissolved Oxygen. The concentration of dissolved oxygen in the Spanish Fork River could decrease with decreased velocity because there would be less natural aeration (mixing with air due to turbulence). Decreased water volumes could provide less support to naturally occurring plants, which provide oxygen to the system through photosynthesis. Increased temperature and nutrient concentrations could also decrease the dissolved oxygen concentrations. Elevated nutrient levels can cause high algae growth and, when the algae die, oxygen is consumed as the organisms decompose.

Solids (Dissolved [TDS] and Suspended [TSS]). Both TDS and TSS concentrations are likely to increase because the Spanish Fork River would not benefit from mixing with the 1991 Contract Water from Strawberry Reservoir that has lower concentrations of TDS and TSS.

3.4.2.2.2 Impacts to Beer Creek Assessment Unit

Other surface water bodies that are in the Beer Creek assessment unit, such as Peteetneet Creek, could experience minor impacts near the Strawberry High Line Pipeline corridor. Impacts would be limited to stormwater discharges during project construction and would be mitigated by the implementation of a stormwater pollution protection plan (SWPPP) and best management practices (BMPs) to control soil erosion and sediment discharges.

3.4.2.2.3 Strawberry High Line Pipeline Straightening Options and Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would have the same impacts to water quality as the Preferred Alternative because the water quantity, sources, and associated issues would be the same as addressed above.

Summary. Based on the information above and with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*, the Preferred Alternative's impacts to water quality would not be significant. The Preferred Alternative would not add any new sources of pollutants to the Spanish Fork River, and the water quality of the Spanish Fork River would be more representative of the natural water quality.

3.5 Wetlands and Other Waters of the United States

The wetlands and other waters of the United States study area includes all three impact areas (permanent, temporary, and indirect). Wetland delineation was completed for the permanent and indirect impact areas only. HDR prepared an aquatic resources delineation report for the Proposed Project (HDR 2026a).

This resource is protected via two acts: Section 10 of the Rivers and Harbors Act (1899) and Section 404 of the Clean Water Act (CWA) of 1972, as amended. Because there are no navigable waters in the study area, the JLAs do not anticipate that a Section 10 permit would be required for the Preferred Alternative. The U.S. Army Corps of Engineers (USACE) regulates work in, on, or over waters of the United States via the CWA, which authorizes USACE to require permits for discharging dredge and fill material into waters of the United States. Aquatic resources are jurisdictional waters of the United States if they meet the definitions in regulations to implement the CWA (33 *Code of Federal Regulations* [CFR] Section 328.3 and 40 CFR Section 120.2). This EA determines whether a CWA Section 404 permit would be required for affecting wetlands and/or other surface waters.

3.5.1 Affected Environment

The entire delineation survey area is about 1,184 acres and contains a total of 78.36 acres of aquatic resources. These resources consist of 14.67 acres of palustrine wetlands, 2.89 acres of perennial streams, 0.07 acre of intermittent streams, 0.02 acre of ephemeral streams, 40.42 acres of canals, 20.26 acres of open-water ponds, and 0.03 acre of ditches. Ephemeral streams and most open-water ponds, canals, and ditches in the survey area are not likely jurisdictional but the jurisdictional status of delineated aquatic resources is subject to determination by USACE. The characteristics of delineated aquatic resources, including information used to help determine jurisdictional status, are summarized in the aquatic resources delineation report for the Proposed Project (HDR 2026a).

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

The No Action Alternative would have no effect on waters of the United States.

3.5.2.2 Preferred Alternative

The Preferred Alternative would cause direct permanent impacts to canals and ditches (39.40 acres) that would be likely non-jurisdictional or would be exempt from CWA permitting (USACE and EPA 2020). The Preferred Alternative would have 0.04 acre of permanent impacts to a wetland that is likely non-jurisdictional, and 0.03 acre of permanent impacts and 1.30 acres of temporary impacts would occur to likely jurisdictional streams. In addition, the Preferred Alternative would indirectly impact about 0.01 acre of wetlands from installing pipelines. The temporary impacts would occur to intermittent streams and one perennial stream during construction, but the impacted streams would be restored after construction. Impacts to jurisdictional streams would require stream alteration permits that would provide both state approval and authorization under CWA Section 404. The expected impacts to aquatic resources are described in more detail in Appendix 3-D.2, *Wetland Tables*.

In addition, the Spanish Fork River and wetlands adjacent to the river could be indirectly impacted by reductions in stream flow and water levels during irrigation season in the river (see Section 3.2, *Hydrology*; Appendix 1-A, *Spanish Fork River Technical Report*; and Appendix 3-A, *Spanish Fork Gage Height Technical Memorandum*). With the reduction in average May-to-September monthly water flows and the subsequent decrease in water level from the removal of water that is not natural to the Spanish Fork River, wetlands adjacent to the Spanish Fork River could experience drier conditions or, over time, could shift farther instream as stream morphology adjusts to the new flows.

3.5.2.2.1 Strawberry High Line Pipeline Straightening Options and Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would have the same impacts to wetlands as the Preferred Alternative because there are no wetlands in the straightening option study areas.

Summary. Based on the information above, the Preferred Alternative's impacts to wetlands and waters of the United States would not be significant. Impacts to jurisdictional wetlands would be minor, and indirect impacts to wetlands upstream of the Spanish Fork River Diversion would be uncertain and mitigated with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*.

3.6 Riparian Areas, Vegetation, and Noxious Weeds

The riparian areas, vegetation, and noxious weeds study area includes all three impact areas (permanent, temporary, and indirect).

3.6.1 Affected Environment

The section of the survey area in Spanish Fork Canyon is composed primarily of riparian corridors along the Spanish Fork River and Diamond Fork Creek and wetland areas near Diamond Fork Creek. The section of the survey area between Spanish Fork and Rocky Ridge is composed of developed and undeveloped uplands, a small wetland, and riparian corridors along the Spanish Fork River, Peteetneet Creek, Dry Creek, and canals. More details, including lists of the dominant species that were observed during field surveys, are provided in the biological resources evaluation (HDR 2026b) that was prepared for the Proposed Project.

Noxious weed species observed during field surveys include Canada thistle (*Cirsium arvense*), Russian olive (*Elaeagnus angustifolia*), and cheatgrass (*Bromus tectorum*).

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

The No Action Alternative would have no effect on riparian areas, vegetation, or noxious weeds. Any artificial conditions created by the increased trans-basin water supply starting more than 100 years ago would continue.

3.6.2.2 Preferred Alternative

The Preferred Alternative would impact riparian areas and existing vegetation. In addition, the Preferred Alternative would alter stream flows and water levels in the Spanish Fork River, and this alteration of stream flows could indirectly impact riparian vegetation along the Spanish Fork River.

Riparian Areas. Installing the pipelines and associated features for the Preferred Alternative would disturb ground. This installation could permanently impact about 0.37 acre of riparian area along the Strawberry High Line Canal where it crosses Peteetneet Creek and would temporarily impact about 0.43 acre of riparian area along the Spanish Fork River where the Loafer Pipeline would be installed (see Appendix 3-D.3, *Riparian Impact Figures*).

In addition, although riparian vegetation identified along the Spanish Fork River between Diamond Fork Creek and the Spanish Fork River Diversion would not be directly filled or disturbed by the Preferred Alternative, reductions in stream flow and water levels from the

removal of water that is not natural to the Spanish Fork River could indirectly alter the riparian vegetation. See Section 3.2, *Hydrology*, for more information regarding how the Preferred Alternative would alter stream flows and water levels in the Spanish Fork River. The full extent and timing of the potential indirect effects of reduced hydrology on riparian vegetation are uncertain and cannot be quantified at this time.

Existing Vegetation. Constructing the South Utah Valley Regional Water Treatment Plant would disturb ground, permanently removing existing vegetation where the treatment plant would be located. The Preferred Alternative would impact existing vegetation in all areas where excavation, grading, and staging occur, including where pipelines are installed. After construction, most areas would be regraded, revegetated, and restored to existing conditions. For the Strawberry High Line Pipeline, a new multi-use trail would be constructed above the new pipeline, and the other parts of the Strawberry High Line Canal right-of-way would be revegetated.

Noxious Weeds. Construction could facilitate the spread of invasive plants and noxious weeds by disturbing ground and removing existing vegetation. Areas that are disturbed during construction will be treated to control noxious weeds and will be revegetated after construction. Topsoil will be preserved and replaced after pipelines are installed, and disturbed areas will be reseeded with appropriate vegetation.

3.6.2.2.1 Strawberry High Line Pipeline Straightening Options

There would be additional impacts to the existing vegetation and noxious weeds in the Strawberry High Line Pipeline Straightening Options areas due to construction disturbance. After construction, the disturbed areas would be regraded, revegetated, and restored to existing conditions, and the contractor would follow BMPs to minimize the spread of noxious weeds. There would not be additional impacts to riparian areas with the Strawberry High Line Pipeline Straightening Options because no additional existing riparian areas would be disturbed. No multi-use trail would be constructed in the Strawberry High Line Pipeline Straightening Options areas.

3.6.2.2.2 Nebo Finished Water Pipeline and Spanish Fork Santaquin Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would have the same impacts to riparian areas, existing vegetation, and noxious weeds as the Preferred Alternative because no additional exiting riparian area would be disturbed.

Summary. Based on the information above and with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*, the Preferred Alternative’s impacts to riparian areas, vegetation, and noxious weeds would not be significant. Impacts to riparian areas, vegetation, and noxious weeds would be minor, and indirect impacts to riparian areas upstream of the Spanish Fork River Diversion would be uncertain and mitigated with the mitigation measures and environmental commitments in Section 3.13.

3.7 Threatened and Endangered Species

The threatened and endangered species study area includes all three impact areas (permanent, temporary, and indirect).

3.7.1 Affected Environment

The survey area in Spanish Fork Canyon is composed primarily of riparian corridors along the Spanish Fork River. The section of the survey area between Spanish Fork and Rocky Ridge is composed of developed and undeveloped uplands, a small wetland, and riparian corridors along the Spanish Fork River, Peteetneet Creek, Dry Creek, and canals. The section of the survey area between Rocky Ridge and Nephi is composed of developed and undeveloped uplands.

The USFWS Information for Planning and Consultation (IPaC) system identified three federally listed species that might occur in the survey area for threatened and endangered species and/or might be affected by the Proposed Project: two bird species, Mexican spotted owl (*Strix occidentalis*) and yellow-billed cuckoo (*Coccyzus americanus*), and one plant species, Ute ladies’-tresses (*Spiranthes diluvialis*). The IPaC report also identified two insect species that are proposed to be listed under the ESA: monarch butterfly (*Danaus plexippus*) and Suckley’s cuckoo bumble bee (*Bombus suckleyi*). The survey area does not include designated or proposed critical habitat for these species.

Potentially suitable habitat does not exist in the survey area for Mexican spotted owl. Potentially suitable habitat exists in the survey area for yellow-billed cuckoo, Ute ladies’-tresses, monarch butterfly, and Suckley’s cuckoo bumble bee. More details are provided in the *Biological Resources Evaluation* (HDR 2026b) that was prepared for the Proposed Project and is available on the project website (<https://nebowaterproject.cuwcd.gov>).

3.7.2 Environmental Consequences

3.7.2.1 No Action Alternative

The No Action Alternative would have no effect on threatened or endangered species or their habitats.

3.7.2.2 Preferred Alternative

Potential effects from the Preferred Alternative on monarch butterfly, Suckley's cuckoo bumble bee, Ute ladies'-tresses, and yellow-billed cuckoo are discussed in the subsections below.

Monarch Butterfly. Milkweed is an essential feature of quality monarch habitat. Although milkweed plants were observed growing in the survey area, the proposed critical habitat for this species is outside the survey area. The Preferred Alternative would not jeopardize the continued existence of monarch butterflies.

Suckley's Cuckoo Bumble Bee. Potentially suitable nesting and foraging habitat exists in the survey area. Ground disturbance would eliminate potential nesting sites, and vegetation removal would eliminate potential foraging material.

Suckley's cuckoo bumble bees have not been observed in the United States since 2016 (USFWS 2024), and critical habitat has not been proposed for this species. Given the broad nature of potentially suitable nesting and foraging habitat, the lack of observations in the United States, and the fact that critical habitat has not been proposed, the Preferred Alternative would not jeopardize the continued existence of Suckley's cuckoo bumble bees.

Ute Ladies'-tresses. There are known Ute ladies'-tresses populations in the Diamond Fork Creek drainage. However, these areas would not be impacted by the Preferred Alternative.

A total of 0.40 acre of potentially suitable habitat was identified on stream terraces along the banks of the Spanish Fork River. No Ute ladies'-tresses were observed during field work in fall 2025 (which was outside the flowering period). These areas would not be directly filled or disturbed by the Preferred Alternative, but reductions to stream flow during the summer could alter the potentially suitable habitat in and adjacent to the Spanish Fork River. See Section 3.2, *Hydrology*, for more information regarding how the Preferred Alternative would alter stream flows and water levels in the Spanish Fork River.

Ute ladies'-tresses require a year-round hydrologic regime that supplies consistent soil moisture without prolonged inundation. Stream terraces with potentially suitable Ute ladies'-tresses habitat adjacent to the Spanish Fork River are dominated by herbaceous plant species with shallow root systems. With the reduction in average May-to-September monthly water flows

from the removal of water that is not natural to the Spanish Fork River and the subsequent decrease in water level, these terraces could experience drier conditions or, over time, could shift farther instream as stream morphology adjusts to the new flows.

Yellow-billed Cuckoo. Potentially suitable habitat was identified in patches of multilayered riparian vegetation along the Spanish Fork River. These areas would not be directly filled or disturbed by the Preferred Alternative, but reductions in stream flow from the removal of water that is not natural to the Spanish Fork River could indirectly alter riparian vegetation closest to the river over time. No yellow-billed cuckoo were observed during field work in fall 2025. See Section 3.2, *Hydrology*, for more information regarding how the Preferred Alternative would alter stream flows and water levels in the Spanish Fork River. The full extent and timing of the potential indirect effects of reduced hydrology on riparian vegetation closest to the river are uncertain and cannot be quantified at this time.

The JLAs have requested USFWS review and concurrence with the determination that the Preferred Alternative may affect, but is not likely to adversely affect, Ute ladies'-tresses or yellow-billed cuckoo (see Appendix 3-E.4, *USFWS Letter*).

3.7.2.2.1 Strawberry High Line Pipeline Straightening Options and Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would have the same impacts to threatened and endangered species as the Preferred Alternative. There are no areas of proposed critical habitat for monarch butterflies, and no potential suitable habitat for Ute ladies'-tresses or yellow-billed cuckoo, that would be impacted by these options.

Summary. Based on the information above and with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*, the Preferred Alternative's impacts to threatened and endangered species would not be significant. Potential indirect impacts to Ute ladies'-tresses or yellow-billed cuckoo habitat upstream of the Spanish Fork River Diversion would be uncertain and mitigated with the mitigation measures and environmental commitments in Section 3.13.

3.8 Wildlife Resources

The wildlife resources study area includes all three impact areas (permanent, temporary, and indirect).

3.8.1 Affected Environment

The section of the survey area located in Spanish Fork Canyon is composed primarily of riparian corridors along the Spanish Fork River. The section of the survey area between Spanish Fork and Rocky Ridge is composed of developed and undeveloped uplands, a small wetland, and riparian corridors along the Spanish Fork River, Peteetneet Creek, and canals in the survey area. The section of the survey area between Rocky Ridge and Nephi is composed of developed and undeveloped uplands.

The survey area includes areas mapped as elk (*Cervus canadensis*), moose (*Alces alces*), and mule deer (*Odocoileus hemionus*) habitat. Additionally, potentially suitable nesting and foraging habitat for migratory birds exists in tree and shrub communities along the riparian corridors of the Spanish Fork River, the East Bench Canal, the South Field Canal, and segments of the Strawberry High Line Canal, as well as along various canal and stream corridors in the survey area. Suitable foraging and nesting habitat is also present in the wetland areas near Diamond Fork Creek and in upland shrub communities distributed throughout the survey area.

The USFWS Environmental Conservation Online System (ECOS) identified five species under conservation agreement that are known to occur in Utah and Juab Counties: one amphibian species, Columbia spotted frog (*Rana luteiventris*); one bird species, greater sage-grouse (*Centrocercus urophasianus*); and three fish species, Bonneville cutthroat trout, Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*), and least chub (*Iotichthys phlegethontis*). There is no suitable habitat in the survey area for greater sage-grouse, Colorado River cutthroat trout, or least chub. Potentially suitable habitat exists in the survey area for Columbia spotted frog and Bonneville cutthroat trout.

Utah Division of Wildlife Resources (UDWR) biologists have stated that there is a sizeable population of native minnow species in the Spanish Fork River from the confluence with Diamond Fork Creek downstream to the Spanish Fork River Diversion. This population includes mountain sucker (*Catostomus platyrhincus*), speckled dace (*Rhinichthys osculus*), mottled sculpin (*Cottus bairdii*), redbelt shiner (*Richardsonius balteatus*), and potentially northern leatherside chub (*Lepidomeda copei*).

More details are provided in the *Biological Resources Evaluation* (HDR 2026b) that was prepared for the Proposed Project and is available on the project website (<https://nebowaterproject.cuwcd.gov>).

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

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

3.8.2.2 Preferred Alternative

The Preferred Alternative could affect potentially suitable habitat for Columbia spotted frog and Bonneville cutthroat trout as well as other fish species, migratory birds, and big-game wildlife species.

Columbia Spotted Frog. Columbia spotted frogs are highly aquatic and are rarely found far from permanent quiet water. They usually live at the grassy/sedgy margins of streams, lakes, ponds, springs, and marshes and use streamside small mammal burrows as shelter. Breeding typically occurs in small pools or ponds with little or no current surrounded by dense aquatic vegetation. Potentially suitable habitat is located in ponded areas associated with wetlands, open-water ponds, and streams in upper Spanish Fork Canyon.

These potentially suitable habitat areas would not be filled or disturbed by the Preferred Alternative, but reductions in stream flow and water level could alter the potentially suitable habitat in and adjacent to the Spanish Fork River. See Section 3.2, *Hydrology*, for more information regarding how the Preferred Alternative would alter stream flows and water levels in the Spanish Fork River.

With the reduction in average summer monthly water flows and subsequent decrease in water level, potentially suitable Columbia spotted frog habitat could experience drier conditions or, over time, could shift farther instream as stream morphology adjusts to new flows.

Bonneville Cutthroat Trout. Habitat for Bonneville cutthroat trout ranges from high-elevation streams with coniferous and deciduous riparian trees, to low-elevation streams in sage-steppe grasslands containing herbaceous riparian zones, to lakes. Bonneville cutthroat trout spawn annually during the spring and early summer (late April into June) at temperatures ranging from about 39 to 50 degrees Fahrenheit (UDWR 2000). Bonneville cutthroat trout require the presence of well-sorted gravels with minimal fine sediments as well as cool, well-oxygenated water for successful spawning.

Bonneville cutthroat trout are known to occur in the Spanish Fork River, Diamond Fork Creek, and Peteetneet Creek. Diamond Fork Creek would not be directly filled or have any changes to flows with the Preferred Alternative.

About 0.01 acre of Peteetneet Creek would be temporarily impacted by the Preferred Alternative through replacement of an existing culvert. This section of the creek receives intermittent water flows and provides marginal habitat for Bonneville cutthroat trout; therefore, any impacts to Bonneville cutthroat trout at this location are expected to be negligible. About 0.52 acre of the Spanish Fork River would be temporarily impacted where the existing Spanish Fork River Diversion would be modified to improve removal of sediment before water is diverted into the Strawberry Power Canal. About 0.08 acre of the Spanish Fork River would also be temporarily impacted where the Loafer Pipeline would be constructed under the Spanish Fork River. Construction work in and around streams could temporarily impede fish passage, increase sedimentation, and reduce water quality.

Additionally, reductions in summer stream flows could indirectly alter potentially suitable habitat for Bonneville cutthroat trout in a portion of the Spanish Fork River. Reduced flows could alter the stream morphology and riparian vegetation; increase water temperature, turbidity, and phosphorus levels; and decrease the concentration of dissolved oxygen (for more information about water quality impacts, see Section 3.4.2.2, *Preferred Alternative*, in Section 3.4, *Water Quality*) all of which could harm spawning and rearing conditions. Additionally, reduced stream flows could create barriers to fish movement, which could fragment or reduce available habitat.

Native Minnow Species and General Aquatic Species. Supplemental flows in the Spanish Fork River from the confluence with Diamond Fork Creek and the Spanish Fork River Diversion have provided a thermal refuge during times of the year when other parts of the Spanish Fork River have increased thermal stress. Supplemental flows have also increased habitat availability and provided refuge habitat to avoid predation. Reductions in summer stream flows would reduce the availability of this refuge habitat, resulting in increased exposure to predation or forcing individuals to seek refuge in other parts of the Spanish Fork River.

Migratory Birds. Potentially suitable nesting and foraging habitat exists in the tree and shrub communities along riparian corridors associated with streams and canals in the survey area. Suitable nesting and foraging habitats are also present in upland shrub communities and in wetland areas throughout the survey area. Removal of trees or shrubs would eliminate these habitats, and construction activities could temporarily disturb avian nesting, hunting, and browsing behavior. Additionally, the Preferred Alternative would reduce stream flow in the Spanish Fork River, which could alter the riparian vegetation closest to the river. The full extent and timing of the potential indirect effects of reduced hydrology on riparian habitat are uncertain and cannot be quantified at this time.

General Terrestrial Species. Constructing the Preferred Alternative would directly impact locations mapped as big-game habitat by UDWR. The UDWR data typically do not remove

features such as canals or roads, and they often do not account for recent developments. Given this, the numbers in this analysis could include areas with land uses that might not support big-game habitat.

Removing the canal would provide a beneficial impact to terrestrial species by removing a hazard that has historically resulted in drowning deaths for wildlife.

About 10.51 acres of year-long, substantial habitat for moose would be temporarily impacted in the areas around the Power Canal; about 6.12 acres of winter/spring, crucial habitat for mule deer would be temporarily impacted where the Strawberry High Line Canal would be enclosed near the town of Spring Lake; and about 31.02 acres of winter/spring, substantial habitat for mule deer would be temporarily impacted by Santaquin-Nephi Pipeline construction. These impacts would be minor given that the pipelines would be installed in areas on the edges of the mapped big-game habitat. The impacted areas are already disturbed by the existing Strawberry High Line Canal, roads, and residential development and the Preferred Alternative would maintain these disturbances.

About 239.55 acres of winter crucial habitat for elk and about 76.64 acres of a known mule deer migration corridor would be directly impacted where the South Utah Valley Regional Water Treatment Plant would be constructed. Although mapped as crucial habitat, the majority of the treatment plant site has historically been used as a gravel pit, and this use likely reduced its suitability as good wildlife habitat. Elk using this area would need to shift their activity to the open space to the north, south, or east. The mule deer migration corridor in this location is considered “low use” (a route used by 0% to 25% of a population) (UDWR 2026). Under the Preferred Alternative, part of the eastern edge of the corridor would be used for the South Utah Valley Regional Water Treatment Plant, while most of the corridor would remain intact. Mule deer would still be able to use this migration corridor; the part near the water treatment plant would narrow slightly. Future conditions at the water treatment plant, including increased noise, lighting, and human activity, could deter elk and mule deer from using the surrounding areas.

In addition, the length of the Strawberry High Line Pipeline would be fenced under the Preferred Alternative. Many areas where the pipeline would be installed are already fenced and are adjacent to residential development or areas converting to suburban development. The effects on wildlife movement would be most impactful in areas that have not been developed adjacent to the mapped habitat for moose, elk, and mule deer and the mule deer migration corridor.

Maps of the moose, elk, and mule deer habitat are provided in the biological resources evaluation (HDR 2026b) that was prepared for the Proposed Project.

Short-term, local impacts to wildlife would occur during construction of the Preferred Alternative due to removal of vegetation, increased noise and activity, construction lighting, and human activity from construction, all of which could temporarily and/or permanently displace individual animals from these areas.

3.8.2.2.1 Strawberry High Line Pipeline Straightening Options and Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would have the same impacts to wildlife resources as the Preferred Alternative because the impacts would occur in the same vicinity and have effects to the same resources described above.

Summary. Based on the information above and with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*, the Preferred Alternative's impacts to wildlife resources would not be significant. The Preferred Alternative's directly impacted areas are already being used for water infrastructure and are low-quality wildlife habitat. Potential indirect impacts to wildlife resources upstream of the Spanish Fork River Diversion would be uncertain and mitigated with the mitigation measures and environmental commitments in Section 3.13.

3.9 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), mandates that the JLAs 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). In compliance with the regulations in Section 106 of the NHPA (36 CFR Section 800.16), the affected environment for cultural resources is referred to as the area of potential effects (APE).

The APE for the proposed action includes the area that could be physically affected by any of the proposed alternatives (the maximum limit of disturbance) and includes the permanent and temporary impact areas. Because there would be no ground disturbance in the indirect impact areas, cultural resource surveys were not conducted for these areas, and no impacts to cultural resources in the indirect impact areas are anticipated from the Preferred Alternative.

3.9.1 Affected Environment

Section 106 compliance for the Proposed Project involved three separate but related projects and subsequent consultations with the State Historic Preservation Office (SHPO), the first being

Reclamation's literature review and cultural resource inventory (U25BE0626) for the Strawberry High Line Canal submitted to SHPO in January 2026.

Second, Logan Simpson Design conducted a literature review and cultural resource inventory (U26LI0164) for the Project APE that extended beyond the Strawberry High Line Canal (Logan Simpson 2026). In addition to the above cultural resource inventories, Reclamation completed a Class I report for the proposed title transfer of the Strawberry High Line Canal Laterals to the Strawberry High Line Canal Company.

The cultural resource inventories identified a total of 54 isolated finds and 33 archaeological sites in the Project APE. These 33 sites are listed in Appendix 3-D.4, *Cultural Properties*. The isolated finds were determined to be ineligible for inclusion in the NRHP. Sixteen of the 33 archaeological sites are determined or recommended as eligible for inclusion in the NRHP.

3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

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

3.9.2.2 Preferred Alternative

The Preferred Alternative would impact the characteristics of the eligible sites (listed below in Table 3-4) that make them significant and would, therefore, have an **adverse effect** on historic properties according to 36 CFR Section 800.16(i). The Preferred Alternative would have **no adverse effect** on nine historic properties and **no effect** on four other historic properties. The Class I and Class III inventories identified and evaluated the cultural resources listed in Appendix 3-D.4, *Cultural Properties*.

SHPO concurred with Reclamation's determination of eligibility for the Strawberry High Line Canal on January 23, 2026. Reclamation will consult with SHPO regarding the adverse effects of the three aforementioned projects as a single grouped mitigation effort. This consultation is ongoing at the time of publication of this EA.

3.9.2.2.1 Strawberry High Line Pipeline Straightening Options and Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would not have additional impacts to cultural resources because no additional cultural resources are in the study areas for these options.

Summary. Based on the information above and with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*, the Preferred Alternative’s impacts to cultural resources would not be significant. The only cultural resources with an adverse effect either need to be replaced (Strawberry High Line Canal) or are being transferred out of federal ownership and would not be directly impacted (Strawberry High Line Canal laterals, and Upper and Lower Spanish Fork and Payson Hydroelectric Facilities).

**Table 3-4
Impacts to Archaeological Sites**

Site/Resource	NRHP Eligibility	Finding of Effect	Description of Effect
Strawberry High Line Canal (42UT473) and associated laterals and infrastructure	Eligible (Criteria A, C, and D)	Adverse effect	Piping the historic property would impact its historic integrity. Title transfer of the laterals from Reclamation to the Strawberry High Line Canal Company would move the resources out of federal oversight and regulation.
Spanish Fork Hydroelectric Facility (42UT475/42UT474)	Eligible (Criteria A and C)	Adverse effect	Title transfer from Reclamation to District would move this resource out of federal oversight and regulation.
Payson Hydroelectric Facility (42UT476)	Eligible (Criteria A and C)	Adverse effect	Title transfer from Reclamation to District would move this resource out of federal oversight and regulation.

3.10 Recreation

The recreation study area includes all three impact areas (permanent, temporary, and indirect).

3.10.1 Affected Environment

Existing Recreation Resources. As shown in Appendix 3.D-5, *Recreation*, existing recreation resources that intersect the study area include four local parks (Spanish Fork River Park, Canyon View Park, Spanish Oaks Recreation Area, and Sunset Trails Park) and several existing paved multi-use trails, including the Spanish Fork River Trail and the Hollow Park Trail.

Based on a review of the Land and Water Conservation Fund (LWCF) map for Utah (UDNR 2025), one public park in the study area received funding from the Land and Water Conservation Fund Act: Canyon View Park in Spanish Fork.

UDWR conducted river restoration projects on the Spanish Fork River in the vicinity of Spanish Fork River Park to improve fish habitat, stabilize banks, and improve angling opportunities. Supplemental river flows from Diamond Fork Creek have supported trout populations in the area, particularly downstream of the confluence with Diamond Fork Creek, which supports increased angling opportunities.

Planned Recreation Resources. Several planning agencies in the study area currently collaborate on multi-use trail infrastructure. These consist of Utah County, local municipalities, the Mountainland Association of Governments (the metropolitan planning organization that covers Utah County), and UDOT's Trails Division. UDOT's Trails Division oversees the Utah Trail Network, a network of existing and planned paved multi-use trails across the state that provide accessible and safe infrastructure for people of all ages and abilities.

As shown in Appendix 3.D-5, the planned trail along the Strawberry High Line Canal alignment is the High Line Canal Trail, which is identified in *Utah's Unified Transportation Plan* as a Phase 1 need with Phase 2 funding (project ID M-U-2023-A-87). This trail would improve connectivity and provide additional recreation opportunities for residents and visitors (UDOT, UTA, and others 2023).

3.10.2 Environmental Consequences

3.10.2.1 No Action Alternative

The No Action Alternative would not impact existing recreation resources. With the No Action Alternative, the High Line Canal Trail would not be constructed as part of the Proposed Project.

3.10.2.2 Preferred Alternative

The Preferred Alternative would positively impact recreation by providing an approximately 20-mile regional trail that would be a significant new resource to the communities in the region. The ground disturbance would occur in previously disturbed areas within the right-of-way, and there would be no impact to the surrounding areas. The Preferred Alternative would be consistent with existing active transportation plans. Utah County would fund the construction of and maintain the multi-use High Line Canal Trail on the federally owned right-of-way through a license agreement. Utah County plans to have future trailheads for the High Line Canal Trail on adjacent properties in Spanish Fork, Salem, Elk Ridge, Payson, Spring Lake, and Santaquin. Utah County plans to construct grade-separated crossings for the trail at higher-volume roads where feasible and if funding is available. There would be no impacts to Canyon View Park from the Preferred Alternative. There could be temporary construction closures on Hollow Park Trail where it intersects the proposed High Line Canal Trail.

The High Line Canal Trail would be subject to temporary closures to protect public health in locations where agricultural producers are spraying various chemicals on their orchards. These temporary closures would be coordinated through Utah County.

Reductions in Spanish Fork River flows below the Diamond Fork confluence could impact recreational angling opportunities through loss of fishable areas or reduced trout populations.

3.10.2.2.1 Strawberry High Line Pipeline Straightening Options

To avoid steep grades and private property concerns, this option under the Preferred Alternative would keep the planned High Line Canal Trail on the existing Strawberry High Line Canal alignment and would not use the Strawberry High Line Pipeline Straightening Options. The exception would be at Woodland Hills Drive in Salem, where an overpass or underpass bridge for the trail would be constructed if funding from Utah County is available.

3.10.2.2.2 Nebo Finished Water Pipeline and Spanish Fork Santaquin Finished Water Pipeline Options

The Nebo Finished Water Pipeline and Spanish Fork Santaquin Finished Water Pipeline Options would have the same impacts to recreation resources as the Preferred Alternative because the trail would be constructed in the same location as described for that alternative.

Summary. Based on the information above and with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*, the Preferred Alternative's impacts to recreation would not be significant. The addition of the multi-use trail would be considered a beneficial impact, and indirect impacts to fishing upstream of the Spanish Fork River Diversion would be uncertain and mitigated with the mitigation measures and environmental commitments in Section 3.13.

3.11 Land Use, Right-of-way, and Impacts to Private Property

The land use, right-of-way, and impacts to private property study area includes the permanent and temporary impact areas. Because there would be no ground disturbance or need for acquisitions or easements in the indirect impact areas, there would not be any impacts to land use or right-of-way in the indirect impact areas from the Preferred Alternative.

3.11.1 Affected Environment

The Strawberry High Line Canal and Strawberry Power Canal are located mostly on land owned by the United States. Current land uses adjacent to the impact boundary of the Preferred

Alternative, the Strawberry High Line Pipeline Straightening Options, and two finished water pipeline options consist of residential properties, agricultural land, undeveloped land, and a gravel pit owned by the District.

3.11.2 Environmental Consequences

Impacts to private property are anticipated to be a combination of fee title acquisition, perpetual easements, and temporary construction easements (TCEs). Fee title or perpetual easements would be obtained to compensate the property owner for construction of Project facilities on the property. The perpetual easement would be obtained by the District and assigned to the United States and would allow ongoing access to a property for maintenance after construction. With a perpetual easement, the property owner would maintain ownership of the property, but there would be ongoing limitations on how the property owner can use it. A TCE would allow the District to temporarily use the property during construction for activities such as construction equipment access and materials staging. After construction, properties with TCEs are typically regraded and revegetated or restored to their preconstruction condition. The District's acquisition of TCEs would not alter property ownership or change how the land is used after construction.

For this analysis, the right-of-way impacts were calculated with GIS software using parcel data for Juab and Utah Counties from 2025 and Reclamation right-of-way information. With the current level of project design, fee title acquisition, perpetual easements, and TCEs are grouped together and jointly associated with each parcel. There are gaps and overlaps in the parcel data, meaning some boundaries are missing or misaligned. The JLAs did not attempt to fix these issues because accurate corrections require survey-grade data that would be collected during final design, and the existing data are sufficient for planning-level analysis. Final impacts would be determined after the final design of the Preferred Alternative and during the right-of-way acquisition process. If the JLAs determine that there are additional impacts that are not analyzed here, the JLAs will conduct additional NEPA compliance.

3.11.2.1 No Action Alternative

The No Action Alternative would not require any acquisition of right-of-way or perpetual easements or TCEs from private properties. The State of Utah and regional land use plans from the Mountainland Association of Governments assume changes in land use in Utah and regionally, including the conversion of agricultural land to residential and commercial use. This conversion is anticipated to continue to occur in southern Utah County and eastern Juab County with the No Action Alternative.

3.11.2.2 Preferred Alternative

Impacts to Private Property. The JLAs identified 48 parcels that would require a combination of fee title acquisition, perpetual easements, and TCEs to implement construction of facilities under the Preferred Alternative. Construction of the Strawberry High Line Pipeline would require fee title acquisition on 2 parcels (owned by the Strawberry Water Users Association), which would total about 0.39 acre. Reclamation is currently working on confirming ownership boundaries along the Strawberry High Line Canal, and it is possible that these parcels on the Strawberry High Line Canal could be determined to be in Reclamation ownership or have an existing Reclamation easement. Construction of sediment-removal facilities and pump stations at the mouth of Spanish Fork Canyon would require fee title acquisition for 3 parcels (2 are owned by the Strawberry Water Users Association and 1 is owned by Spanish Fork City), which could total up to 73.54 acres. The JLAs do not anticipate that all of this acreage would be impacted by the Preferred Alternative. The 2 parcels owned by the Strawberry Water Users Association would need to be purchased to facilitate the administrative changes with the Preferred Alternative. Construction of the Strawberry High Line Pipeline Straightening Options 1 through 6 would require perpetual easements and TCEs on 21 parcels and would total about 12.17 acres. The Santaquin-Nephi Pipeline would require perpetual easements and TCEs on 22 parcels and would total about 36.32 acres. Many of these are city-owned parcels for roads where the pipelines would be installed.

Additional properties needed for construction might be identified in the future by project contractors. Those properties would need to have environmental clearances completed and go through the appropriate easement or acquisition process.

Table 3-5 summarizes the property impacts that would be required for the Preferred Alternative. For impacts to specific parcels and figures that show the property impacts, see Appendix 3-D.6, *Right-of-Way*.

The District would acquire any necessary property interest (including fee title, perpetual easements, and TCEs) and then convey it to the United States in accordance with federal land acquisition laws and regulations.

Table 3-5
Properties Impacted by the Preferred Alternative

Project Element ^a	Total Number of Parcels	Total Acreage
Sediment-removal facilities at the mouth of Spanish Fork Canyon	3	73.54
Strawberry High Line Pipeline	2	0.39
Strawberry High Line Pipeline Straightening Options 1 through 6	21	12.17
Santaquin-Nephi Pipeline	22	36.32
Total	48	122.42

^a The Strawberry High Line Pipeline includes sections of the Nebo Finished Water Pipeline and the Loafer Pipeline.

Indirect Impacts to Land Use. Population projections from the State of Utah and regional land use plans from the Mountainland Association of Governments assume changes in land use in Utah and regionally, including the conversion of agricultural land to residential and commercial use. This conversion is anticipated to continue to occur in southern Utah County and eastern Juab County with or without the Preferred Alternative. The timing of this anticipated development depends on several factors, including the decisions of private property owners, municipal zoning and development requirements, market demand, and the availability of supporting infrastructure (including finished water, sewer, power, and transportation facilities).

The Preferred Alternative would allow the District to treat and distribute finished water to residential and industrial land uses in southern Utah County and eastern Juab County to help meet the demand for finished water. Under the Preferred Alternative, all owners of agricultural property who have contracts for agricultural water would continue to have this water delivered for agricultural purposes. The current agricultural contract holders would not need to sell agricultural water to the District or municipalities for conversion to treated water except at their own discretion. The District and municipalities would also continue to consider other potential water supply options (such as groundwater) to meet the demand for finished water.

3.11.2.2.1 Strawberry High Line Pipeline Straightening Options

The Strawberry High Line Pipeline Straightening Options would impact private property. These impacts are summarized in Section 3.11.2.2, *Preferred Alternative*, and Table 3-5 above.

3.11.2.2.2 Nebo Finished Water Pipeline and Spanish Fork Santaquin Finished Water Pipeline Options

The Nebo Finished Water Pipeline and Spanish Fork Santaquin Finished Water Pipeline Options would have the same impacts to land use, rights-of-way, and private property as the Preferred Alternative.

Summary. Based on the information above and with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*, the Preferred Alternative's impacts to land use, right-of-way, and private property would not be significant. Impacts would be minor and would be fairly compensated pursuant to federal land acquisition laws and regulations.

3.12 Construction (Air Quality, Noise and Vibration, Transportation, and Access)

The construction study area includes the permanent and temporary impact areas. Because there would be no ground disturbance or construction activities in the indirect impact areas, there would not be any construction impacts in the indirect impact areas from the Preferred Alternative.

3.12.1 Environmental Consequences

3.12.1.1 No Action Alternative

With the No Action Alternative, no construction-related impacts would occur.

3.12.1.2 Preferred Alternative

Construction of the Preferred Alternative could cause temporary impacts to air quality, noise and vibration, transportation, and access, including effects from trucks hauling materials to and from the construction site. The following paragraphs describe these construction-related impacts. Required permits and applicable mitigation measures are included in Section 3.13, *Mitigation Measures and Environmental Commitments*.

Air Quality. Construction would cause short-term, local increases in fugitive dust. No long-term air quality impacts are anticipated.

Noise and Vibration. Residents and businesses near the study area could experience temporary noise and vibration during construction due to heavy equipment and truck traffic. No long-term noise or vibration impacts are anticipated.

Water Quality. Water quality near the study area could experience impacts from stormwater runoff from disturbed areas during construction.

Access and Transportation. The Preferred Alternative would cause short-term access and transportation impacts during construction, including temporary lane closures, detours, and access restrictions on local roads or adjacent properties, especially where new pipelines cross or intersect roads or rights-of-way.

The Preferred Alternative pipelines would cross 53 roads, 4 rail lines, and 2 trails in total (Appendix 3.D-7, *Roads, Rail Lines, and Trails Temporarily Closed or Delayed during Construction*). These facilities could experience temporary closures or delays during pipeline construction. Future maintenance access along the pipeline routes could require access roads, easement agreements (for more information, see Section 3.11, *Land Use, Right-of-way, and Impacts to Private Property*), or coordination with local property owners where pipelines would be constructed on parcels not owned by the United States or the District. Long-term impacts to transportation and access are not anticipated after construction.

3.12.1.2.1 Strawberry High Line Pipeline Straightening Options and Finished Water Pipeline Options

The Strawberry High Line Pipeline Straightening Options, Nebo Finished Water Pipeline Option, and Spanish Fork Santaquin Finished Water Pipeline Option would have the same temporary construction impacts as the Preferred Alternative.

Summary. Based on the information above, the Preferred Alternative's construction impacts would not be significant. Construction impacts would be temporary and mitigated with the mitigation measures and environmental commitments in Section 3.13, *Mitigation Measures and Environmental Commitments*.

3.13 Mitigation Measures and Environmental Commitments

This section describes the mitigation measures and environmental commitments being proposed under the Preferred Alternative.

- Project-specific Mitigation Measures
 - The JLAs will organize a Spanish Fork River working group with county, state, and federal agency representatives to review monitoring parameters, monitoring results, and restoration opportunities.
 - To mitigate the reduced quantity of water in the section of the Spanish Fork River between the confluence with Diamond Fork Creek and the Spanish Fork River

- Diversion, the JLAs will conduct up to 3 years of monitoring before and up to 3 years of monitoring after construction to assess the existing and postconstruction conditions of the riparian vegetation, Ute ladies'-tresses, yellow-billed cuckoo, and fishery habitat in this section of the Spanish Fork River.
- The JLAs will reinitiate Section 7 consultation with USFWS if impacts to the Ute ladies-tresses or yellow-billed cuckoo are identified through the monitoring efforts or anticipated as a result of Preferred Alternative.
 - Based on the monitoring data and changes observed with the reduced water volumes, the JLAs, in coordination with UDWR, Trout Unlimited, the Spanish Fork River working group, and other interested parties, will identify and implement mitigation activities that could improve water quality and aquatic habitat on the Spanish Fork River. If these mitigation activities would occur outside the study area, additional surveys and environmental review may be required. Potential mitigation activities could include:
 - Conduct a stream restoration study on the Spanish Fork River beginning at the Spanish Fork River Diversion and moving upstream to include the lower portions of Thistle and Soldier Creeks. The study would assess conditions and evaluate potential restoration actions by river reach.
 - Construct stream-restoration activities such as improving stream banks and enhancing pools and riffles to improve fish habitat and aeration.
 - Plant and maintain water-friendly plants along the riverbanks to provide shade, reduce solar radiation, and reduce sediment loads from bank erosion.
 - Implement stream-restoration and/or water quality improvement projects on sections of the Spanish Fork River or tributaries above the Diamond Fork Creek confluence to assist with efforts to reduce sediment and nutrient loads in the upper watershed drainages of the Spanish Fork River.
 - The High Line Canal Trail would be subject to temporary closures to protect public health in locations where agricultural producers are spraying various chemicals on their orchards. These temporary closures will be coordinated through Utah County.
 - The JLAs will coordinate with the Utah SHPO, the Strawberry High Line Canal Company, and other consulting parties, as appropriate, to develop specific mitigation measures for the archaeological resources that would have adverse effects from the Proposed Project. This consultation is ongoing at the time of publication of this EA.

- Best Management Practices (BMPs)
 - The JLAs will follow standard BMPs to mitigate the impacts during construction. These BMPs address construction impacts related to air quality, noise and vibration, water resources and wetlands, hazardous materials, transportation, stormwater, wildlife, cultural resources, agricultural properties, soils, vegetation and invasive species, and public health and safety. See Appendix 3.D-8, *Construction Best Management Practices*, for a copy of the BMPs.
- Laws and Regulations Related to Private Property
 - The JLAs will provide just compensation for impacted private properties pursuant to the federal Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970 (as amended July 2008) and the Utah Relocation Assistance Act.
- Permits and Approvals (Table 3-6)

**Table 3-6
Summary of Project Permits and Approvals**

Agency and Jurisdiction	Permit, Approval, or Clearance	Relevance
Interior and U.S. Congress	Approval of supplement to the 2004 Definite Plan Report	The supplement to the 2004 Definite Plan Report will be consistent with the outcome of this NEPA analysis
U.S. Army Corps of Engineers: Clean Water Act	Section 404 permit	Permanent or temporary placement and/or removal of material in waters of the United States or the state, including wetlands
Utah Division of Water Quality	Section 401 Certification (if needed)	Needed to address water quality impacts if a Section 404 individual permit is required
Utah Division of Water Rights	Stream Alteration Permit	Construction activities that occur in waters of the state and for all stream crossings
U.S. Fish and Wildlife Service: Endangered Species Act	Section 7 consultation, Letter of Concurrence	Presence of federally listed plant and wildlife species and critical habitat within the impact area, if unable to avoid through siting of project components
State Historic Preservation Officer:	Concurrence on adequacy of identification effort, National	Aligned with federal permits and consultations

Agency and Jurisdiction	Permit, Approval, or Clearance	Relevance
Section 106 of the National Historic Preservation Act	Register of Historic Places eligibility determinations, and Finding of Effect	
Utah Department of Environmental Quality	Utah Pollutant Discharge Elimination System Construction Stormwater General Permit, Air Quality Permit	Land disturbance exceeding thresholds; point source or fugitive emissions permitting
Payson City / Spanish Fork City / Utah County Floodplain / Federal Emergency Management Agency	Floodplain Development Permit, Conditional Letter of Map Revision, Letter of Map Revision	Development or fill placed in regulatory floodplains and the Spanish Fork River
Utah Department of Transportation (UDOT)	Permits and/or Easement Agreement	Crossings under U.S. Highway 6, SR-52, SR-54, I-15, and US-91
Union Pacific Railroad (UP)	Permit or Easement Agreement	Pipeline crossings under UP right-of-way
Cities of Spanish Fork, Salem, Payson, Spring Lake, Santaquin, Mona, and Nephi; the Towns of Genola and Rocky Ridge; and Utah and Juab Counties	Local road closure permits	JLAs and contractors will coordinate with the cities to get permits for any lane closures that are needed on local roads during construction.
Utah Division of Water Rights	Water Right Change Applications	Change in water use and operations as needed

Chapter 4. Consultation and Coordination

4.1 Scoping Process and Results

Scoping was conducted by the JLAs to provide the general public, organizations, state and local governments, and affected federal agencies an opportunity to identify issues and concerns that should be analyzed when preparing this EA. The section summarizes the agency coordination, informational materials, public open houses, and comments received during the scoping period.

4.1.1 Notifications

The public scoping period began on May 23, 2025, and ended on June 27, 2025. Various methods were used to notify the general public of the public scoping period. Copies of the notification materials are included in Appendix 4-A, *Scoping Summary Report*.

4.1.2 Public Open Houses

To provide the public with an opportunity to learn more about the Proposed Project, alternatives, and purpose and needs developed by the JLAs, the study team held two open houses in June 2025. These open houses also provided the public with an opportunity to ask the JLAs questions and provide a public comment.

The first meeting was held on June 10, 2025, in the Banquet Hall of the Payson Municipal Building, located at 439 W. Utah Avenue in Payson. A total of 28 attendees signed in.

The second meeting was held on June 12, 2025, in the commons area of Juab High School, located at 346 East 600 North in Nephi. A total of 22 attendees signed in.

These locations were chosen for convenience of access for stakeholders in southern Utah County and eastern Juab County, where the proposed improvements are located.

All of the materials provided at the open houses were made available for review on the Proposed Project website. Copies of the materials presented at the scoping meetings are included in Appendix 4-A, *Scoping Summary Report*.

4.1.3 Scoping Comments

The scoping period for the Proposed Project began on May 23, 2025, and ended on June 27, 2025. Each comment was reviewed and considered by the JLAs.

A total of 15 comments were received during the scoping process. Most of these comments were from state and federal agencies. To review the scoping comments, see Appendix 4-A, *Scoping Summary Report*.

4.2 Agencies and Organizations Consulted

Scoping notification letters were sent to agencies and tribal stakeholders inviting them to attend the open houses, review the project scoping materials on the Proposed Project website, and provide comments regarding the Proposed Project. A list of the agencies, municipalities, organizations, and federally recognized tribes that were sent letters on May 21, 2025, is included in Section 2.3.1, *Agency and Tribal Scoping Notification Letters*, of Appendix 4-A, *Scoping Summary Report*.

To review the scoping notification letter recipients and the scoping notification letter, see Appendix 4-A.

During the duration of the project, the District has been meeting monthly or more frequently with the Strawberry High Line Canal Company and the Strawberry Water Users Association. The District has also been meeting quarterly or more frequently with Utah County, Spanish Fork City, Salem City, Payson City, Santaquin City, and the East Juab Water Conservancy District.

4.3 Results of Public Review of the EA

This section will be updated after the public comment period on the EA.