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Final Supplemental Watershed Plan No. 1 and Environmental Assessment

Tri-Valley Watershed
Wasatch County, Utah

Lead Federal Agency:
USDA Natural Resources Conservation Services

Sponsoring Local Organization:
Wasatch County | Utah Department of Agriculture and Food

June 2026

Utah State Office
Natural
Resources
Conservation
Service
nrcs.usda.gov/

Final

Supplemental Watershed Plan No. 1 and Environmental Assessment for the

Tri-Valley Watershed Project

Tri-Valley Watershed
Wasatch County, Utah

Lead Agency: United States Department of Agriculture-Natural Resources Conservation Service (NRCS)

Cooperating Agency: None

Sponsoring Local Organizations (SLOs): Wasatch County and Utah Department of Agriculture and Food

Authority: This Supplemental Watershed Plan and Environmental Assessment (Plan-EA) has been prepared under the authority of the NRCS Watershed Protection and Flood Prevention Act [Public Law 83-566 (PL 83-566) Stat. 666 as amended (16 U.S.C Section 1001 et seq.) 1954.

Abstract: The purpose of the Tri-Valley Watershed Project (Project) is to improve agricultural water management for the Daniel Irrigation system and to improve flood prevention along Center Creek near the intersection of Center Creek Road and S 2400 E Street in the Tri-Valley Watershed. There is a need to address pressure and velocity deficiencies for improved water delivery efficiency in the Daniel Irrigation System Lower and Middle Pressure Zones; to reduce issues associated with O&M access and brittle Transite pipe (asbestos cement pipe) in the Daniel Irrigation system; and to improve public safety for ice-induced flood hazards to Center Creek Road caused from freezing-specific capacity restraints along Center Creek. The agricultural water management preferred alternative measures for the Daniel Irrigation System consist of installing 14,115 linear feet of new irrigation pipe, replacing/upsizing 7,810 linear feet of irrigation pipe, replacing 1,660 linear feet of asbestos cement pipe with PVC pipe, and abandoning 12,585 linear feet of asbestos cement pipe in place. Measures for flood prevention along Center Creek were proposed during development of the Plan-EA but were removed from the alternative actions because those measures are being constructed under alternate funding as a separate project. The installation cost for the preferred alternative agricultural water management improvements is estimated at $4,543,000. NRCS would fund $3,390,500 of the installation cost and the SLOs would be responsible for $1,152,500.

Comments: NRCS has completed this Final Plan-EA in accordance with the National Environmental Policy Act (NEPA) and NRCS guidelines and standards. Reviewers provided their comments to NRCS during the allotted Draft Plan-EA review period and the Final Plan-EA was updated to address the comments. Further information may be obtained for this Project by contacting the following NRCS personnel:

Ammon Boswell – NRCS-Utah Watershed Project Manager
1950 West Main Street, Tremonton, Utah 84337
435-459-1621; ammon.boswell@usda.gov

Non-Discrimination Statement: In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at https://www.usda.gov/oascr/how-to-file-a-program-discrimination-complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by:

Mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410;

Fax: (202) 690-7442; or

Email: program.intake@usda.gov.

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SUPPLEMENTAL WATERSHED PLAN AGREEMENT NO. 1

TRI-VALLEY WATERSHED, UTAH
WATERSHED WORK PLAN AGREEMENT (SUPPLEMENT NO. 1)
between

Wasatch County and the Utah Department of Agriculture and Food
(Referred to herein as Sponsors)

and the

Natural Resources Conservation Service,
U.S. Department of Agriculture
(Referred to herein as NRCS)

Whereas, application has heretofore been made to the Secretary of Agriculture by Wasatch County and the Utah Department of Agriculture and Food for assistance in preparing a plan for works of improvement for the Tri-Valley Watershed, Utah, under the authority of the Watershed Protection and Flood Prevention Act, as amended (16 U.S.C. Sections 1001 to 1008, 1010, and 1012; and

Whereas, the responsibility for administration of the Watershed Protection and Flood Prevention Act (Public Law 83-566), as amended, has been assigned by the Secretary of Agriculture to the NRCS; and

Whereas, there has been developed through the cooperative efforts of the Sponsors and the NRCS a Watershed Work Plan and Environmental Assessment for Supplement No. 1 to the Tri-Valley Watershed Plan, hereinafter referred to as the Watershed Project or Plan, which Plan is annexed to and made part of this agreement;

Now, therefore, the Secretary of Agriculture through the NRCS and the Sponsors hereby agree on this Watershed Plan and that the works of improvement for this project will be installed, operated, and maintained in accordance with the terms, conditions, and stipulations provided for in this Watershed Plan and including the following:

1. **Term.** The term of this agreement is for the installation period and evaluated life of the project (52 years) and does not commit the NRCS to assistance of any kind beyond the end of the evaluated life.

2. **Costs.** The costs shown in this plan are preliminary estimates. Final costs to be borne by the parties hereto will be the actual costs incurred in the installation of works of improvement.

3. **Real Property.** The Sponsors will acquire such real property as will be needed in connection with the works of improvement. The amounts and percentages of the real property acquisition costs to be borne by the Sponsors and the NRCS are as shown in the cost-share table in section 5 hereof.

   The Sponsors agree that all land acquired for measures, other than land treatment practices, with financial or credit assistance under this agreement will not be sold or otherwise disposed of for the evaluated life of the project except to a public agency that will continue to maintain and operate the development in accordance with the operation and maintenance agreement.

4. **Uniform Relocation Assistance and Real Property Acquisition Policies Act.** The Sponsors hereby agrees to comply with all of the policies and procedures of the Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 U.S.C. Section 4601 et seq. as further implemented through regulations in 49 CFR Part 24 and 7 CFR Part 21) when acquiring real property interests for this federally assisted project. If the Sponsors are legally unable to comply with the real property acquisition requirements, it agrees that, before any Federal financial assistance is furnished, it will provide a statement to that effect, supported by an opinion of the chief legal officer of the state containing a full discussion of the facts and law involved. This statement may be accepted as constituting compliance.

5. **Cost-Share for Watershed Project Plans.** Table 1- Tri-Valley Watershed Agreement Cost-Share Percentages & Amounts shows the estimated cost-share percentages and amounts for Watershed Project Plan implementation.

Table 1. Tri-Valley Watershed Agreement - Cost-Share Percentages and Amounts

Works of Improvement	**NRCS**		**Sponsors**		**Total Cost**
Cost-Sharable Items	**%**	**Cost**	**%**	**Cost**	
Agricultural Water Management Measures[1/]	75	$2,977,000	25	$993,000	$3,970,000
Mitigation	0	$0	0	$0	$0
Real Property Acquisition Cost	0	$0	0	$0	$0
Project Administration	0	$0	0	$0	$0
Real Estate Appraisal Fees, Legal Fees, Survey Costs, Flowage Easement	0	$0	0	$0	$0
Relocation [2/]	0	$0	0	$0	$0
Sponsors Engineering Costs	0	$0	0	$0	$0
Subtotal: Cost-Sharable Costs	**75**	**$2,977,000**	**25**	**$993,000**	**$3,970,000**
Non-Cost-Sharable Item [3/]	**NRCS**		**Sponsors**		**Total Cost**
	%	**Cost**	**%**	**Cost**	
NRCS Technical Assistance/Engineering	100	$331,000	0	$0	$331,000
Project Administration[4/]	N/A	$82,500	N/A	$82,500	$165,000
Water, Mineral and Other Resource Rights[5/]	0	$0	100	$0	$0
Permits	0	$0	100	$17,000	$17,000
Real Property Rights	0	$0	100	$60,000	$60,000
Relocation, Beyond Required Decent, Safe, Sanitary[6/]	0	$0	100	$0	$0
Non-Project Costs	0	$0	100	$0	$0
Subtotal: Non-Cost-Sharable Costs	**72**	**$413,500**	**28**	**$159,500**	**$573,000**
Grand Total:	**75**	**$3,390,500**	**25**	**$1,152,500**	**$4,543,000**

1/ - The cost-share rate is the percentage of the average cost of installing the practice in the selected plan for the evaluation unit. During project implementation, the actual cost-share rate must not exceed the rate of assistance for similar practices and measures under existing national programs.

2 /- Investigation of the watershed project area indicates that no displacements will be involved under present conditions. However, in the event

that displacement becomes necessary at a later date, the cost of relocation assistance and payments will be cost-shared in accordance with the percentages shown.

3/ - If actual Non-Cost-Sharable item expenditures vary from these figures, the responsible party will bear the change.

4/ - The Sponsors and NRCS will each bear the costs of project administration that each incurs. Sponsors costs for project administration include relocation assistance advisory service.

5/ - The Sponsors will acquire with other than Watershed Protection and Flood Prevention Act funds, such real property as will be needed in connection with the works of improvement. The value of real property is eligible as in-kind contributions toward the sponsors' share of the works of improvement costs. In no case will the amount of an in-kind contribution exceed the sponsors' share of the cost for the works of improvement. The maximum cost eligible for in-kind credit is the same as that for cost sharing.

6/ - Relocation payments for the cost of improvements beyond decent, safe and sanitary requirements is a non-project cost ineligible for assistance under the act.

6. **Land Treatment Agreements.** The Sponsors will obtain agreements from owners of not less than 50 percent of the land above each multiple-purpose and floodwater-retarding structure. These agreements must provide that the owners will carry out farm or ranch conservation plans on their land. The Sponsors will ensure that 50 percent of the land upstream of any retention reservoir site is adequately protected before construction of the dam. The Sponsors will provide assistance to landowners and operators to ensure the installation of the land treatment measures shown in the Watershed Plan. The Sponsors will encourage landowners and operators to continue to operate and maintain the land treatment measures after the long-term contracts expire, for the protection and improvement of the watershed.

7. **Floodplain Management.** Before construction of any project for flood prevention, the Sponsors agree to participate in and comply with applicable Federal floodplain management and flood insurance programs.

8. **Water and Mineral Rights.** The Sponsors will acquire or provide assurance that landowners or resource users have acquired such water, mineral, or other natural resources rights pursuant to State law as may be needed in the installation and operation of the works of improvement.

9. **Permits.** The Sponsors will obtain and bear the cost for all necessary Federal, State, and local permits required by law, ordinance, or regulation for installation of the works of improvement.

10. **NRCS Assistance.** This agreement is not a fund-obligating document. Financial and other assistance to be furnished by the NRCS in carrying out the plan is contingent upon the fulfillment of applicable laws and regulations and the availability of appropriations for this purpose.

11. **Additional Agreements.** A separate agreement will be entered into between the Sponsors and the NRCS before either party initiates work involving funds of the other party. Such agreements will set forth in detail the financial and working arrangements and other conditions that are applicable to the specific works of improvement.

12. **Amendments.** This plan may be amended or revised only by mutual agreement of the parties hereto, except that the NRCS may deauthorize or terminate funding at any time if it determines that the Sponsors has failed to comply with the conditions of this agreement or when the program funding or authority expires. In this case, the NRCS must promptly notify the Sponsors in writing of the determination and the reasons for the deauthorization of project funding, together with the effective date. Payments made to the Sponsors or recoveries by the NRCS must be in accordance with the legal rights and liabilities of the parties when project funding has been deauthorized. An amendment to incorporate changes affecting a specific

measure may be made by mutual agreement between the Sponsors and the NRCS having specific responsibilities for the measure involved.

13. **Prohibitions.** No member of or delegate to Congress, or resident commissioner, may be admitted to any share or part of this plan, or to any benefit that may arise therefrom; but this provision may not be construed to extend to this agreement if made with a corporation for its general benefit.

14. **Operation and Maintenance (O&M).** The Sponsors will be responsible for the operation, maintenance, and any needed replacement of the works of improvement by performing the work or arranging for such work, in accordance with an O&M Agreement. An O&M agreement will be entered into before Federal funds are obligated and will continue for the project life 50 years. Although the Sponsors' responsibility to the Federal Government for O&M ends when the O&M agreement expires upon completion of the evaluated life of measures covered by the agreement, the Sponsors acknowledge that continued liabilities and responsibilities associated with works of improvement may exist beyond the evaluated life.

15. **Emergency Action Plan.** Prior to construction, the Sponsors must prepare an Emergency Action Plan (EAP) for each dam or similar structure where failure may cause loss of life or as required by state and local regulations. The EAP must meet the minimum content specified in NRCS Title 180, National Operation and Maintenance Manual (NOMM), Part 500, Subpart F, Section 500.52, and meet applicable State agency dam safety requirements. The NRCS will determine that an EAP is prepared prior to the execution of fund obligating documents for construction of the structure. EAPs must be reviewed and updated by the Sponsors annually.

16. **Nondiscrimination Provisions**. In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

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    USDA is an equal opportunity provider, employer, and lender.

By signing this agreement, the recipient assures the USDA that the program or activities provided for under this agreement will be conducted in compliance with all applicable Federal civil rights laws, rules, regulations, and policies.

17. **Certification Regarding Drug-Free Workplace Requirements (7 CFR Part 3021)**. By signing this Watershed Agreement, the Sponsors are providing the certification set out below. If it is later determined that the Sponsors knowingly rendered a false certification, or otherwise violated the requirements of the Drug-Free Workplace Act, the NRCS, in addition to any other remedies available to the Federal Government, may take action as authorized under the Drug-Free Workplace Act.

Controlled substance means a controlled substance in Schedules I through V of the Controlled Substances Act (21 U.S.C. Section 812) and as further defined by regulation (21 CFR Sections 1308.11 through 1308.15);

Conviction means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

Criminal drug statute means a Federal or non-Federal criminal statute involving the manufacturing, distribution, dispensing, use, or possession of any controlled substance;

Employee means the employee of a grantee directly engaged in the performance of work under a grant, including: (i) all direct charge employees; (ii) all indirect charge employees unless their impact or involvement is insignificant to the performance of the grant; and, (iii) temporary personnel and consultants who are directly engaged in the performance of work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g., volunteers, even if used to meet a matching requirement; consultants or independent contractors not on the grantees' payroll; or employees of sub-recipients or sub-contractors in covered workplaces).

Certification:

A. The Sponsors certify that they will or will continue to provide a drug-free workplace by:

(1) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition.

(2) Establishing an ongoing drug-free awareness program to inform employees about:
   (a) The danger of drug abuse in the workplace;
   (b) The grantee's policy of maintaining a drug-free workplace;
   (c) Any available drug counseling, rehabilitation, and employee assistance programs; and
   (d) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

(3) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (1).

(4) Notifying the employee in the statement required by paragraph (1) that, as a condition of employment under the grant, the employee must:
   (a) Abide by the terms of the statement; and

(b) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction.

(5) Notifying the NRCS in writing, within 10 calendar days after receiving notice under paragraph (4)(b) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice must include the identification numbers of each affected grant.

(6) Taking one of the following actions, within 30 calendar days of receiving notice under paragraph (4) (b), with respect to any employee who is so convicted.

(a) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

(b) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (1), (2), (3), (4), (5), and (6).

B. The Sponsors may provide a list of the sites for the performance of work done in connection with a specific project or other agreement.

C. Agencies must keep the original of all disclosure reports in the official files of the agency.

18. Certification Regarding Lobbying (7 CFR Part 3018) (for projects > $100,000)

A. The Sponsors certifies to the best of their knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Sponsors, to any person for influencing or attempting to influence an officer or employee of an agency, Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned must complete and submit Standard Form LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The Sponsors must require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub- grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients must certify and disclose accordingly.

B. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C., Section 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

19. Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions (7 CFR Part 3017).

A. The Sponsors certifies to the best of their knowledge and belief, that they and their principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(2) Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph A(2) of this certification; and

(4) Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

B. Where the Sponsors are unable to certify to any of the statements in this certification, such prospective participant must attach an explanation to this agreement.

20. Clean Air and Water Certification. (Applicable if this agreement exceeds $100,000, or a facility to be used has been subject of a conviction under the Clean Air Act (42 U.S.C. Section 7413(c)) or the Federal Water Pollution Control Act (33 U.S.C. Section 1319(c)) and is listed by EPA, or is not otherwise exempt.)

A. The Sponsors signatory to this agreement certifies as follows:

(1) Any facility to be utilized in the performance of this proposed agreement is ( ), is not (X) listed on the Environmental Protection Agency List of Violating Facilities.

(2) To promptly notify the NRCS-State administrative officer prior to the signing of this agreement by the NRCS, of the receipt of any communication from the Director, Office of Federal Activities, U.S. Environmental Protection Agency, indicating that any facility which is proposed for use under this agreement is under consideration to be listed on the Environmental Protection Agency List of Violating Facilities.

(3) To include substantially this certification, including this subparagraph, in every nonexempt sub-agreement.

B. The Sponsors signatory to this agreement agrees as follows:
   (1) To comply with all the requirements of section 114 of the Clean Air Act as amended (42 U.S.C. Section 7414) and section 308 of the Federal Water Pollution Control Act (33 U.S.C. Section 1318), respectively, relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, issued there under before the signing of this agreement by the NRCS.
   (2) That no portion of the work required by this agreement will be performed in facilities listed on the EPA List of Violating Facilities on the date when this agreement was signed by the NRCS unless and until the EPA eliminates the name of such facility or facilities from such listing.
   (3) To use their best efforts to comply with clean air standards and clean water standards at the facilities in which the agreement is being performed.
   (4) To insert the substance of the provisions of this clause in any nonexempt sub-agreement.

C. The terms used in this clause have the following meanings:
   (1) The term "Air Act" means the Clean Air Act, as amended (42 U.S.C. Section 7401 et seq.).
   (2) The term "Water Act" means Federal Water Pollution Control Act, as amended (33 U.S.C. Section 1251 et seq.).
   (3) The term "clean air standards" means any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, or other requirements which are contained in, issued under, or otherwise adopted pursuant to the Air Act or Executive Order 11738, an applicable implementation plan as described in section 110 of the Air Act (42 U.S.C. Section 7414) or an approved implementation procedure under section 112 of the Air Act (42 U.S.C. Section 7412).
   (4) The term "clean water standards" means any enforceable limitation, control, condition, prohibition, standards, or other requirement which is promulgated pursuant to the Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under an approved program, as authorized by section 402 of the Water Act (33 U.S.C. Section 1342), or by a local government to assure compliance with pretreatment regulations as required by section 307 of the Water Act (33 U.S.C. Section 1317).
   (5) The term "facility" means any building, plant, installation, structure, mine, vessel, or other floating craft, location or site of operations, owned, leased, or supervised by a sponsor, to be utilized in the performance of an agreement or sub- agreement. Where a location or site of operations contains or includes more than one building, plant, installation, or structure, the entire location will be deemed to be a facility except where the Director, Office of Federal Activities, Environmental Protection Agency, determines that independent facilities are collocated in one geographical area.

21. Assurances and Compliance. As a condition of the grant or cooperative agreement, the Sponsors assure and certify that it is in compliance with and will comply in the course of the agreement with all applicable laws, regulations, Executive orders and other generally applicable requirements, including those set out below which are hereby incorporated in this agreement by reference, and such other statutory provisions as a specifically set forth herein.

State, Local, and Indian Tribal Governments: OMB Circular Nos. A-87, A-102, A-129, and A-133; and 7 CFR Parts 3015, 3016, 3017, 3018, 3021, and 3052.

Nonprofit Organizations, Hospitals, Institutions of Higher Learning: OMB Circular Nos. A-110, A-122, A-129, and A-133; and 7 CFR Parts 3015, 3017, 3018, 3019, 3021 and 3052.

22. **Examination of Records.** The Sponsors must give the NRCS or the Comptroller General, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to this agreement, and retains all records related to this agreement for a period of three years after completion of the terms of this agreement in accordance with the applicable OMB Circular.

23. **Signatures**

Sponsor: Wasatch County		
By:		
Title:	County Manager	
Date:	6/1/26	
Address:	25 N Main St. Heber City, UT	Zip Code: 84032

The signing of this plan was authorized by a resolution of the governing body of Wasatch County, adopted at a meeting held on 5/20/26

~~TARRA COOPER~~ Address ~~25 N MAIN ST HEBERCITY UT~~ 84032

Secretary [or other Title]

Date: 6/1/26

Sponsor: Utah Department of Agriculture and Food	
By:	Troy Forrest
Title:	Deputy Commissioner
Date:	12/8/2025
Address:	4315 S 2700 W Taylorsville UT Zip Code: 84129

The signing of this plan was authorized by resolution of the governing body of the Utah Department of Agriculture and Food, adopted at a meeting held on _____.

Secretary [or other Title]

Date: 12/8/2025

Address 4315 S. 2700 W.
Taylorsville, Utah 84129

USDA United States Department of Agriculture
Natural Resources Conservation Service

Approved By:	ARELYS ORTIZ Digitally signed by ARELYS ORTIZ DN: c=US, o=U.S. Government, ou=Department of Agriculture, cn=ARELYS ORTIZ, 0.9.2342.19200300.100.1.1=12001002846597 Date: 2026.06.25 13:25:56 -06'00'
	Arelys Ortiz
itle:	Acting State Conservationist Utah
Date:	6/25/2026

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Summary (Office of Management and Budget Fact Sheet)

S-1 Title of Proposed Action

Final Supplemental Watershed Plan No. 1 and Environmental Assessment (Plan-EA) for the Tri-Valley Watershed Project (Project)

S-2 Watershed Name

Tri-Valley Watershed

S-3 County, State

Wasatch County, Utah

S-4 Congressional District

Utah Congressional District 3

S-5 Sponsoring Local Organizations

The Sponsoring Local Organizations (SLOs) for the Project are Wasatch County and Utah Department of Agriculture and Food.

S-6 Cooperating Agency

None

S-7 Authority

This Plan-EA has been prepared under the authority of United States Department of Agriculture Natural Resources Conservation Service (NRCS) Watershed Protection and Flood Prevention Act [Public Law 83-566 (PL 83-566) Stat. 666 as amended (16 U.S.C Section 1001 et. Seq.) 1954 and in accordance with Section 102(2)(c) of the National Environmental Policy Act of 1969, Public Law 91-190, as amended.

S-8 Purpose and Need for Action

The purpose of the Project is to improve agricultural water management for the Daniel Irrigation system and to improve flood prevention along Center Creek near the intersection of Center Creek Road and S 2400 E Street in the Tri-Valley Watershed. There is a need to address pressure and velocity deficiencies for improved water delivery efficiency in the Daniel Irrigation System Lower and Middle Pressure Zones; to reduce issues associated with O&M access and brittle Transite pipe (asbestos cement pipe) in the Daniel Irrigation system; and to improve public safety for ice-induced flood hazards to Center Creek Road caused from freezing-specific capacity restraints along Center Creek.

S-9 Description of Preferred Alternative

The agricultural water management preferred alternative measures for the Daniel Irrigation System consist of installing 14,115 linear feet of new irrigation pipe, replacing/upsizing 7,810 linear feet of irrigation pipe, replacing 1,660 linear feet of asbestos cement pipe with PVC pipe, and abandoning 12,585 linear feet of asbestos cement pipe in place. Measures for flood prevention along Center Creek were proposed during development of the Plan-EA but were removed from alternative actions because those measures are being constructed under alternate funding as a separate project.

S-10 Resource Information

Table S-1 lists the relevant resource information for the Project.

Table S - 1. Existing Resource Information

Feature	Description
Site Site 1 (Daniel Irrigation System) Site 2 (Center Creek)	Latitude / Longitude (WGS84) 40.470787° / -111.414418° 40.478181° / -111.375942
Hydrologic Unit Number	1602020303 (Lake Creek-Provo River)
Climate[1]	July average high/low: 89°F / 50°F January average high/low: 37°F / 13°F Annual mean precipitation/snowfall: 22.21 inches / 80.3 inches
Watershed Topography	Mountain and valley terrain with high elevation mountains and sediment filled valleys Elevation Range 5,280 to 9,800 feet
Tri-Valley Watershed Area	380 square miles 243,283 acres
Land Uses (Tri-Valley Watershed)[2]	Open Water: 5,016 acres (2%) Undeveloped Public Land: 88,407 acres (36%) Undeveloped Private Land: 114,784 acres (47%) Developed: 15,507 acres (7%) Agriculture: 19,489 (8%)
Land Ownership (Warner Draw Watershed)[3]	Private: 62% State: 13% Federal: 25%
Population (Wasatch County)[4]	35,808
Demographics (Wasatch County)[4]	White: 85% Black: <0.1% American Indian and Alaska Native: <0.3% Asian: 1.4% Native Hawaiian and Pacific Islanders: <0.1% Other: 6% Two or More Races: 7%
Farms Present (Wasatch County)[5]	537
Land in Farms (Wasatch County)[5]	103,438 acres
Average Farm Size (Wasatch County)[4]	193 acres
Relevant Resource Concerns	See Table S-4

[1] Source: Western Regional Climate Center 2016

[2] Source: U.S. Geological Survey 2019. Undeveloped land consists of barren land, forests, wetlands, shrub/scrub lands, and herbaceous lands. Developed lands consist of low-high intensity developed areas and developed open space areas. Agricultural land consists of cultivated crops and pasture/hay areas.

[3] Source: Utah Geospatial Resource Center 2022

[4] Source: U.S. Census Bureau 2023

[5] Source: USDA 2022

S-11 Alternative Plans Considered

A description of the alternatives analyzed in detailed study and associated installation and operation and maintenance (O&M) costs are included below. The installation costs for the alternatives were prepared to equal levels of detail judged appropriate for identification of the National Economic Efficiency (NEE) alternative. Installation costs include construction, real property rights, engineering, permitting, and administration, as applicable. Natural resource rights, replacement in-kind, and relocation payments are not applicable to this Project.

No Action Alternative

The No Action Alternative considers the actions that would take place if no federal action or federal funding were provided for the Project. The No Action Alternative would not improve the Daniel Irrigation system. There are no installation costs associated with this alternative. The annual O&M costs of the Daniel Irrigation system are estimated at $30,400, with an additional $70,000 average annualized cost for repairing pipe breaks in deteriorating pipe sections.

Daniels Irrigation Improvements Alternative

This alternative would Install 11,420 linear feet of new irrigation pipe, replace/upsize 6,145 linear feet of irrigation pipe, replace 7,350 linear feet of cement pipe with PVC pipe, and abandon 6,900 linear feet of asbestos cement pipe in place in the Daniels Irrigation system. The total installation cost is estimated at $4,363,000 with annual O&M estimated at $30,400.

Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)

This alternative would Install 14,115 linear feet of new irrigation pipe, replace/upsize 7,810 linear feet of irrigation pipe, replace 1,660 linear feet of asbestos cement pipe with PVC pipe, and abandon 12,585 linear feet of asbestos cement pipe in place. It would also install a new interconnection to the Central Utah Water Conservancy District's pipeline with a valve vault to better control water delivery. The total installation cost is estimated at $4,543,000 with annual O&M estimated at $30,400.

S-12 Project Costs and Funding Source

The Daniel Irrigation Modified Alignment Alternative was selected as the preferred alternative for the Project. The breakdown of the estimated installation cost for the preferred alternative is provided in Table S-2. NRCS provides PL 83-566 funding for construction and engineering. The SLOs are responsible for real property rights, permitting, and costs associated with their own administrative time to install the Project. NRCS is also responsible for their own administrative time to install the Project measures.

Table S - 2. Estimated Project Installation Cost

Item	PL 83-566 Funds		Other Funds		Total	
Construction	$2,977,000	75%	$993,000	25%	$3,970,000	87.4%
Engineering	$331,000	100%	-	0%	$331,000	7.3%
Permits	-	0%	$17,000	100%	$17,000	0.4%
Real Property Rights	-	0%	$60,000	100%	$60,000	1.2%
Project Administration	$82,500	N/A	$82,500	N/A	$165,000	3.6%
Total	**$3,390,500**	**75%**	**$1,152,500**	**25%**	**$4,543,000**	**100%**

S-13 Project Benefits

The monetary benefits of the preferred alternative include agricultural damage reduction and avoided O&M and replacement costs. These benefits were calculated using a discount rate of 2.5% annualized over 50-years and a 52-year period of analysis. Annual benefits are estimated at $189,000. The preferred alternative also provides non-monetary benefits consisting of long-term reduction in hazardous materials and improved public safety from removal or abandonment of asbestos cement pipe.

S-14 Net Economic Benefits

Net economic benefits were calculated by comparing the annual preferred alternative costs to the annual benefits (Table S-3).

Table S - 3. Estimated Annual Net Economic Benefits

Total Annual Benefits	Total Annual Costs	Benefit-Cost Ratio	Net Economic Benefits
$189,000	$158,000	1.2	$31,000

S-15 Period of Analysis

The period of analysis is the time required for installation of the Project plus the evaluated life (project life) of the Project. All alternatives were evaluated with a period of analysis of 52 years (50-year project life plus 2 years for installation).

S-16 Project Life

The Project would meet a life of 50-years.

S-17 Environmental Impacts

Table S-4 lists the resources of concern and associated environmental consequences associated with the preferred alternative. Resources that would not be affected by the preferred alternative are not listed in this table.

Table S - 4. Summary of Resource Concerns and Impacts

Resource Concern	Summary of Concern	Environmental Consequence
Soils		
Upland Erosion	Disturbance to soils from alternative measures	Ground disturbance from construction activities would increase erosion potential on 3.25 acres of land outside of existing developed or paved areas. These short-term direct impacts would be negligible based on implementation BMPs[1] and restoration/stabilization of disturbed areas after construction completion. No long-term impacts are expected.
Prime and Unique Farmland	Prime and Unique Farmland is present in the project area	Direct short-term impacts to approximately 0.76 acres of soil classified as “prime farmland if irrigated” and 2.43 acres of soils classified as “farmland of statewide importance” would occur during construction. Short-term impacts would be negligible based on construction timing outside of the irrigation season, minimal area disturbed, and restoration of disturbed farmlands after construction.

Resource Concern	Summary of Concern	Environmental Consequence
Water		
Surface Water Quality	Construction activities to occur near and in surface water	This alternative would have a direct short-term potential to increase sediment load in surface water of Daniels Creek during construction. Short-term direct impacts to water quality would be negligible with the implementation of BMPs[1] that reduce sediment entering waters and activities would not violate federal or state water quality rules and regulations. No long-term impacts are expected.
Waters of the U.S. & Wetlands	Disturbance within jurisdictional waters of the U.S. and wetlands	Temporary disturbance in 20 linear feet of Daniels Creek and 0.18 acres of emergent wetland would occur. Direct short-term impacts to wetlands would be negligible based on the disturbance alignment along an existing pipe fill corridor through the wetlands, timing of construction outside of the growing season, restoration after construction, and implementation of avoidance/minimization measures. Short-term direct Impacts to Daniels Creek would also be negligible based on avoided disturbance to the channel bed and restoration of the channel banks after construction. No long-term impacts or loss of waters of the U.S. or wetlands are expected.
Water Quantity and Flow	Reduced water delivery from irrigation deficiencies	Daniel Irrigation system would experience direct long-term benefits for water delivery efficiency with a 23% increase in delivery of water to irrigated croplands. Measurable changes to flow conditions in natural stream channels are not expected.
Floodplain Management	Work in floodplains	Alternative measures would have no change to FEMA[1] SFHAs[1] and no change to floodplain management would occur.
Air		
Air Quality	Emissions from construction activities	There would be no measurable adverse effects to air quality or GHGs[1] based on no requirements for air quality permits, negligible GHG[1] emissions below the EPA[1] reportable limits, the location of the Project outside of nonattainment or maintenance areas, implementation of BMPs[1], and the short duration of construction.
Plants		
Noxious Weeds and Invasive Plant Species	Increased potential for establishment of invasive plant species on disturbed soils	Short-term direct impacts would occur from disturbance on 3.25 acres of undeveloped land that would put the area at risk for invasion of noxious weeds and invasive plants. Short-term impacts would be negligible based on the existing dominant presence of noxious weeds/invasive plants/non-native problematic weeds, implementation of BMPs[1], reseeding with a weed-free mix, and development of a PCRP[1]. Long-term impacts are not expected.

Resource Concern	Summary of Concern	Environmental Consequence
Riparian areas	Disturbance in riparian areas	Direct short-term impacts would occur from temporary disturbance to approximately 0.03 acres of riparian area along Daniels Creek. Removal of trees is not anticipated to complete alternative measures and disturbed areas would be restored after construction completion. Short-term impacts would be negligible based on, timing of construction outside of the growing season, minor amount of area disturbed, and restoration after construction. No long-term impacts to riparian areas are expected.
Animals		
Wildlife and Wildlife Habitat	Disturbance to wildlife habitat	Approximately 3.24 acres of habitat would be temporarily disturbed with 0.03 acres of than in Daniels Creek. No excavation/fill is proposed in water, but construction equipment may pass through the channel when little to no flow is present with negligible impacts to aquatic habitat. Disturbed areas would be restored upon construction completion, and no long-term impacts are expected. Short-term direct impacts from construction disturbance would be minor to negligible based on low habitat quality in and adjoining heavily developed/disturbed areas, minimal amount of area disturbed, construction timing, and restoration of disturbed areas.
Special Status Animal Species	Construction disturbance in suitable habitat	A BA[1] was prepared and concluded the Project would have No Effect to ESA[1]-listed species (Appendix E). The BA[1] was submitted to the USFWS[1] to comply with Section 7 Consultation (Appendix A). State SGCN[1] (bald eagle, northern leopard frog, Columbia spotted frog, southern leatherside chub, and Bonneville cutthroat trout) have the potential to occur in the Project area. Based on construction timing, preconstruction surveys, and avoidance/minimization measures, short-term direct impacts to the species would be negligible. No long-term impacts to state SGCN[1] are expected.
Migratory Birds/Bald and Golden Eagles	Construction disturbance in suitable habitat	Migratory birds and bald eagles could be present in the Project area. Preconstruction surveys would be performed, and spatial buffers would be established as necessary in coordination with USFWS[1] and NRCS. Based on the short duration of construction, timing of construction in areas with habitat, implementation of avoidance/minimization measures, minimal suitable low-quality habitat disturbed, and abundant better suited higher quality habitat outside of the Project area, direct short-term construction impacts to migratory birds, eagles, and bird habitat are expected to be minor to negligible. No long-term impacts to birds or habitat are expected.

Resource Concern	Summary of Concern	Environmental Consequence
Human		
Socioeconomics	Decreased hay crop yields from irrigation system deficiencies and costly O&M	No water deficit would remain benefiting crop yield over the long term. Crop yield would increase by 0.8 tons per acre, equivalent to an annual gain in net return on hay of $119,000 (amortized and discounted). O&M for avoided asbestos cement pipe repairs would decrease costs by $70,000 annually.
Historic Properties/ Cultural Resources / Native American Religious Concerns	Historic properties are located within the APE[1]	The alternative was determined by NRCS to have No Adverse Effect to the four historic properties eligible for listing in the NRHP[1] that are within the APE[1], and the determination was submitted to the SHPO[1] and Tribes/THPOs[1] on March 24, 2023 to comply with Section 106 of the NHPA[1]. The SHPO[1] concurred with the determination in a letter dated March 29, 2023 (Appendix A). No Native American religious concerns were identified by Tribes during consultation, pursuant to EO 13007, EO 13175, the NHPA[1,] and the AIRFA[1]. Refer to Section 7.1.3 of the Plan-EA for a list of tribes consulted, dates of consultation, and responses received from tribes.
Hazardous Materials	Handling and disposal of asbestos containing material	Based on compliance with all applicable state and federal regulations for abandonment, removal, and disposal of asbestos cement pipe, direct short-term adverse impacts from these hazardous materials are not expected. Long-term indirect beneficial impacts would occur that would reduce potential exposure to asbestos-containing material from abandonment and replacement of the asbestos cement pipe sections.
Public Health and Safety	Measures to improve public health and safety	Alternative measures would have long-term indirect benefits to public health and safety from reduced potential for exposure to asbestos-containing materials.
Transportation Infrastructure	Measures proposed along transportation corridors.	Minor direct short-term impacts are expected that could slow down or delay travel times through the vehicle travel corridors. After construction completion the roadways would be reopened to normal vehicle traffic and no long-term adverse impacts are expected.
Noise	Construction activities would produce noise	Minor direct short-term impacts are expected during construction, but BMPs would be in place and there would be no violations of applicable noise programs/regulations. There would be no long-term noise impacts.

1 BMPs = Best Management Practices; FEMA = Federal Emergency Management Agency, SFHA '= Special Flood Hazard Area, GHG = Greenhouse Gasses, EPA = U.S. Environmental Protection Agency, PCRP = Post-Construction Restoration Plan; ESA = Endangered Species Act; BA = Biological Assessment; USFWS = U.S. Fish and Wildlife Service; SGCN = Species of Greatest Conservation Need; NRHP = National Register of Historic Places, APE = Area of Potential Effect, SHPO = State Historic Preservation Office; THPO = Tribal Historic Preservation Office, NHPA = National Historic Preservation Act, AIRFA = American Indian Religious Freedom Act.

S-18 Major Conclusions

The preferred alternative meets the purpose and need of the Project, as well as the goals and objectives. The adverse effects from alternative actions are minor to negligible and short-term during construction. Long-term beneficial effects would result from implementing the preferred alternative and long-term adverse impacts are not expected.

S-19 Areas of Controversy and Issues to be Resolved

There are no known areas of controversy. The following are issues to be resolved for the Project:

- Land Easements – Easements on private lands would need to be secured by the SLOs for alternative modifications.
- O&M Agreements would be developed with the SLOs. The new O&M Agreement would be signed before the Project Agreement is signed.

S-20 Evidence of Unusual Congressional or Local Interest

There is no known evidence of unusual congressional or local interest in the Project.

S-21 In Compliance

Is this report in compliance with the executive orders, public laws, and other statutes governing the formulation of water resource projects? ☒ Yes ☐ No

1.0 Changes Requiring the Preparation of a Supplemental Watershed Plan

1.1 Introduction

As the lead federal agency, the United States Department of Agriculture-Natural Resources Conservation Service (NRCS), along with the Sponsoring Local Organizations (SLOs), Wasatch County and Utah Department of Agriculture and Food (UDAF), is proposing to provide agricultural water management and flood prevention measures within the Tri-Valley Watershed. Measures are proposed at two locations in and near Daniel, Utah (Appendix B – Map B1). This Supplemental Watershed Plan No. 1 and Environmental Assessment (Plan-EA) for the Tri-Valley Watershed Project (Project) evaluates alternatives to address changed conditions and problems identified within the Tri-Valley Watershed.

The Project is being authorized through the Watershed and Flood Prevention Operations Program, which helps urban and rural communities protect, improve, and develop land resources in watersheds up to 250,000 acres in size. This Plan-EA was prepared for NRCS to comply with the U.S. Department of Agriculture (USDA) requirements of the National Environmental Policy Act (NEPA) of 1969 and its implementing regulations at 7 CFR Part 1b; the Principles, Requirements, and Guidelines for Federal Investments in Water Resources (PR&G) (CEQ 2013 and 2014); and NRCS policy and guidelines (NRCS 2010 and 2016a). The Plan-EA assists NRCS in determining if the selected alternative would have a significant impact on the quality of the human environment and if preparation of an Environmental Impact Statement is required.

1.1.1 Plan-EA Format and Procedures

This document combines an NRCS Supplemental Watershed Plan to an existing Areawide Watershed Plan and an Environmental Assessment into one product. The format of this document follows the plan format outline that must be followed for Supplemental Watershed Project Plans as outlined in the NRCS National Watershed Program Manual (NWPM) Parts 500 through 506 (NRCS 2015), and as guided by the NRCS National Watershed Program Handbook (NWPH), Parts 600 through 606 (NRCS 2014). The planning and decision-making process followed PR&G (CEQ 2013 and 2014), the PR&G eight step evaluation process (refer to the PR&G Analysis Report included in Appendix E), and the nine-step planning procedures from the National Planning Procedures Handbook (NRCS 2021a).

Areawide Watershed Plans are voluntary, comprehensive plans for a watershed or other large geographic area. Planning policy for them requires consideration of all natural resources within a planning area, as well as social and economic considerations. Areawide Watershed Plans are developed through a voluntary locally led effort to achieve the following:

- Assess natural resource conditions and needs,
- Set goals,
- Identify programs,
- Alternative actions and other resources to solve those needs,
- Develop proposals and recommendations to solve those needs,
- Implement solutions, and
- Measure success

The NRCS planning process consists of nine steps, divided into three phases covering development, implementation, and evaluation of an Areawide Conservation Plan. The nine-step planning process was considered and incorporated into this Plan-EA as identified below.

Phase 1 - Collection and Analysis

- Step 1 - Identify Problems and Opportunities: Problems and opportunities were identified during the Project scoping process and are included in Section 2.2 (Support for Purpose and Need and Watershed Problems). Input from the Sponsors, agencies, the public, organizations, and tribes were solicited as described in Sections 3.0 (Scope of the Plan-EA) and Section 7.3.2 (Project Scoping) to help identify problems and opportunities. Engineering analysis was completed to further identify and evaluate problems as documented in the engineering technical memorandums (TMs) included in Appendix E.
- Step 2 - Determine objectives: The purpose and need statement for the project was formulated with the problems and opportunities in consideration. Where the "purpose" identifies the fundamental reason why the action is being proposed and the "need" describes the problem/s that the proposed action is intended to address and explains the underlying causes of the problem/s. The purpose and need statement and information supporting the purpose and need is included in Section 2.0 (Purpose and Need).
- Step 3 – Inventory Resources: Resources relevant to the proposed action were determined during the scoping process as described in Section 3.0 (Scope of the Plan-EA). The existing conditions of resources determined to be relevant are documented in Section 4.0 (Affected Environment).
- Step 4 – Analyze Resource Data: The environmental baseline conditions for resources to be evaluated against alternative actions were identified and are included in Section 4.0 (Affected Environment). The best available data and science was used to inventory the existing resource conditions at the level and scale of analysis determined reasonable for evaluating alternatives and impacts.

Phase 2 Decision Support

- Step 5 – Formulate Alternatives: Project alternatives were formulated in consideration of the federal objective as set forth in the Water Resources Development Act of 2007, the PL 83-566 general purposes, and the Project purpose and need. Alternatives were formulated following procedures outlined in the NWPM, NWPH, and PR&G. Alternatives formulated are described in Section 5.0.
- Step 6 – Evaluate Alternatives: The effects of alternatives included in detailed study were determined for each resource relevant to the proposed action. The evaluation of alternatives is included in Section 6.0 (Environmental Consequences) and assessed the proposed alternatives against the baseline data presented in Section 4.0 (Affected Environment).
- Step 7 - Make Decisions: A National Economic Efficiency (NEE) alternative, also identified as the Project preferred alternative, was selected based on the evaluation performed. The selection was made for the alternative that best maximized public benefits (environmental, economic, and social) with appropriate consideration of costs. Section 8.0 (Preferred Alternative) provides information on the decision-making process for selection of the preferred alternative.

Phase 3 Application and Evaluation (Future Work)

- Step 8 – Implement the Plan: The Plan-EA is the first phase of three phases to be completed for implementation of the preferred alternative. After the Final Plan-EA is completed, phase 2 would consist of final design, and phase 3 installation of the Project measures.
- Step 9 – Monitor the Plan: After the installation of measures from phase 3, NRCS and the Sponsors would evaluate the effectiveness of the plan in solving the resource concerns. Adjustments to the plan would be made as needed.

1.2 Tri-Valley Watershed Background

The Tri-Valley Watershed covers approximately 243,283 acres in Wasatch and Summit Counties, Utah (Appendix B – Map B1). The original Watershed Work Plan (Plan) for the Tri-Valley Watershed (Wasatch Soil Conservation District et al. 1997) was developed for water conservation measures to conserve water for fish habitat and water quality improvements for domestic purposes, recreation, cold water aquatic life, and agriculture. The Plan identified that many tributaries of the Provo River were de-watered or had variable flows due to irrigation water diversions, which caused severely limiting suitability of those tributaries for fish habitat. Additionally, several streams within the watershed did not meet state water quality standards for the designated uses. The plan proposed new irrigations systems, conversion of irrigation systems to sprinkler irrigation, land treatment, and land management measures

The 1997 Plan proposed to conserve water by upgrading on-farm irrigation systems from surface irrigation to sprinkler irrigation and to create and enhance fish habitat and riparian areas in the watershed. More specifically, the recommended plan implemented 3,700 acres of improved irrigation systems, a secondary system for Heber City, 21 animal waste systems, 4 miles of streambank protection, 2,400 acres of improved grazing, and 1,300 acres of range seeding.

1.3 Supplemental Watershed Plan Changes

Changes to the Plan are being proposed for the Daniel Irrigation system and Center Creek to address irrigation system deficiencies and public health and safety concerns in the Tri-Valley Watershed.

The Daniel Irrigation Company delivers irrigation water to users in and around the Town of Daniel through a pressurized system. The irrigation system was converted in the 1970s from open canal flood irrigation to pressurized irrigation. The system includes four pressure zones, two of which (Middle and Lower Pressure Zone) were included for study as part of this Plan-EA. The Middle Pressure Zone (MP Zone) and Lower Pressure Zone (LP Zone) are currently experiencing pressure and velocity deficiencies (refer to Section 2.2.1 for deficiencies), limiting the ability to effectively deliver irrigation water to users. Additionally, they contain problematic sections of brittle Transite pipe (asbestos cement pipe). The brittle pipe increases operation and maintenance (O&M) issues and the placement of the main trunkline through private agricultural lands creates complications with access for O&M. Improvements to the irrigation system are needed to address system deficiencies for delivery of irrigation water, to remove hazards and O&M issues related to the asbestos cement pipe, and to alleviate pipeline access conflicts.

Public safety concerns have also been identified near the intersection of Center Creek Road and S 2400 E Road from Center Creek bank overtopping flows due to icing in the creek channel. This has caused shallow flooding to the roadway and adjacent lands, and icing hazards on the roadway. Measures are needed to reduce the ice-induced flooding hazards along this segment of Center Creek.

2.0 Purpose and Need

2.1 Purpose and Need Statement

The purpose of the Project is to improve agricultural water management for the Daniel Irrigation system and to improve flood prevention along Center Creek near the intersection of Center Creek Road and S 2400 E Street in the Tri-Valley Watershed. There is a need to address pressure and velocity deficiencies for improved water delivery efficiency in the Daniel Irrigation System Lower and Middle Pressure Zones; to reduce issues associated with O&M access and brittle Transite pipe (asbestos cement pipe) in the Daniel Irrigation system; and to improve public safety for ice-induced flood hazards to Center Creek Road caused from freezing-specific capacity restraints along Center Creek.

2.2 Support for Purpose and Need and Watershed Problems

2.2.1 Daniel Irrigation System

The Daniel Irrigation MP Zone distributes water to users from Middle Pond servicing approximately 752 acres of land and the LP Zone distributes water to users from the Lower Pond servicing approximately 475 acres (Appendix B – Map B1). Within the two service areas, approximately 990 acres of land is irrigated crops (586 acres in the MP Zone and 404 acres in the LP Zone) which make up the benefitted area (Appendix B, Map B6). Water is provided to the systems from Central Utah Water Conservancy District (CUWCD) who is the wholesale water provider that operates/maintains the main water trunklines. Daniel Irrigation Company operates/maintains the distribution system to deliver irrigation water to users within the service areas. The primary crop within these service areas is alfalfa.

Modeling was performed by Bowen Collins and Associates (BC&A) for the MP Zone to determine system pressures and velocity (see Technical Memorandum included in Appendix E [BC&A 2022a]) and identified the deficiencies listed below. These deficiencies limit the ability of the water users to adequately use their irrigation water right and improvements to the system are needed to address the deficiencies. When the system was installed in the 1970's, only 75 percent of the users had converted to pressurized irrigation and the system was designed to meet that demand. Now 100 percent of the users have converted to pressurized irrigation which has resulted in lower pressures. The smaller diameter pipe sizing and increased demand increases velocities through the system resulting in pressure deficiencies. Daniel Irrigation noted an approximate 10 percent water deficit to crops causing an estimated 10 percent reduction in crop yield.

- Velocity Deficiencies: Portions of the system have maximum velocities exceeding the NRCS maximum velocity criteria of 5 feet per second (fps) for sprinkler irrigation outlined in the NRCS Conservation Practice Standard (CPS) for Irrigation Pipeline Code 430 (NRCS 2023). Deficient segments include 18,155 linear feet of pipe. These high velocities have resulted in high head loss and reduced system pressure.

- Pressure Deficiency: The recommended pressure for the system is 40 pounds per square inch (psi) per NRCS National Engineering Handbook (NEH) Part 652 Irrigation Guide (NRCS 1997) and NEH Part 623 for Sprinkler Irrigation (NRCS 2016b). All delivery junctions in the MP Zone do not meet the minimum recommended pressure.

In addition to the system deficiencies listed above, sections of the MP and LP Zones contain asbestos cement pipe. This includes approximately 7,760 linear feet of pipe in the MP Zone and 6,485 linear feet of pipe in the LP Zone. The MP Zone segment of asbestos cement pipe is also located at the back of agricultural fields which has created access issues for pipe repairs and maintenance. Asbestos cement pipe corrodes and degrades over time leading to loss of pipe mechanical strength or pipe softening. The pipe is approximately 50 years old, is approaching the end of its service life due to pipe softening, and is in poor condition resulting in pipe failures and increased O&M issues. Daniel irrigation has experienced 10 asbestos cement pipe breaks within the last 25 years. The number of breaks has increased over time with four breaks occurring over 15 years (1997 to 2012) and six breaks occurring over the latter 10 years (2012-2022). When asbestos material becomes friable it increases the potential for human exposure to asbestos. Asbestos fibers are hazardous to health if inhaled and to a lesser extent, ingested. The pipe breaks have also resulted in loss of water service. It is estimated that pipe breaks and loss in service to repair them result in an average water deficit to crops of 8 percent (see PR&G Analysis Report in Appendix E for details). Additionally, the increasing pipe breaks are a costly burden on the irrigation company. Improvements are needed along asbestos cement pipe sections in the system to reduce public health risks, decrease costly pipe failures, improve water delivery, and extend the life of the system.

Irrigation water delivery issues associated with seepage have also resulted in water delivery losses. Middle Pond is not currently able to divert the full water right delivered by CUWCD through Daniels Creek during portions of the irrigation season. When additional water cannot be diverted into Middle Pond because it is already full, Daniel Irrigation allows the water to flow downstream in Daniels Creek so it can be diverted into the Lower Pond. However, water seeps into the ground as it travels through Daniels Creek infiltrating before reaching the Lower Pond and the water is lost. This results in an estimated water deficit of 5 percent.

The irrigation system is estimated to have a combined water deficit of 23 percent from the pressure deficiencies and water supply reliability issues described above. The reduced water delivery has resulted in loss in crop productivity within the Daniel Irrigation MP and LP Zone service areas with an estimated reduced yield of 2.7 tons of hay per acre of the 3.5 tons per acre full yield (0.8 tons per acre loss). Refer to the PR&G Analysis Report included in Appendix E for additional information on assumptions and calculations for water deficits and losses in crop yield. Improvements to the irrigation system could increase crop productivity by 0.8 tons of hay per acre over 990 acres of land and substantially reduce the O&M cost burden on Daniel Irrigation.

2.2.2 Center Creek

Flooding and icing over Center Creek Road had been documented to occur near its intersection with S 2400 E Street on a regular basis, during winter months only. The benefitted area of the road corridor is depicted in Appendix B, Map B6. Center Creek through this section is intermittent due to upstream diversion of water between June and October for irrigation water storage. Outside of the irrigation season (November through April), water flows through this section

primarily from snowmelt runoff and discharge from an upstream spring. Shallow flooding occurs along Center Creek outside of the irrigation season near the intersection of Center Creek Road and S 2400 E. This flooding occurs due to freezing water in the channel reducing channel capacity, or from ice jams. Figure 2-1 below shows icing of Center Creek and shallow flooding on Center Creek Road. Public safety is a concern from roadway icing. Past measures performed to warn vehicle traffic of this hazard have included temporary hazard traffic signage/barriers installed seasonally. Measures are needed at this location to alleviate this ice-induced flooding and the associated public safety hazard.

Figure 2-1. Center Creek Ice-Induced Flooding

3.0 Scope of the Plan-EA

A scoping process was completed to identify relevant resources or environmental concerns to be analyzed in detail and to determine which resources or concerns could be eliminated from detailed study. Resource concerns were identified for the Project based on required scoping concerns outlined in the NWPM Section 501.24 B (NRCS 2015) and from any additional concerns identified by the public, the SLOs, or agencies during the scoping meeting and/or other planning or public meetings.

A scoping meeting for the Project was held on February 12, 2020, at the Senior Center building in Heber, Utah. The meeting provided opportunities for the public, SLOs, tribes, agencies, and any other attendees to express specific concerns and their relevance to the proposed action. Ten comments were received during the announced open comment period (January 29, 2020, through March 2, 2020) for the Project. A Scoping Report that provides a summary of the scoping process and comments received can be found in Appendix A. Multiple sites were examined during the

scoping process which included reducing flooding from Center Creek and Lake Creek for a 100-year flood, Daniel Irrigation System Improvements, and addressing ice buildup concerns along Center Creek. The flood reduction for a 100-year flood for Center Creek and Lake Creek was removed from further evaluation for this Plan-EA during the scoping process due to complications and logistics in determining a feasible concept design. Note that only three of the ten scoping comments received are applicable to the sites evaluated in this Plan-EA (Daniel Irrigation system and the icing concerns for Center Creek).

A summary of resource concerns and their relevance to the proposed action is provided in Table 3-1 below. Resource items determined to not be relevant to the proposed action have been eliminated from detailed study. Resource items determined to be relevant to the proposed action have been included in detailed studies described in this Plan-EA.

Table 3-1. Resource Concerns Summary

Resource Concern	Relevant[1]?		Rationale
	Yes	No	
Soils			
Upland Erosion	X		Construction disturbance could increase erosion potential.
Sedimentation		X	Sedimentation issues were not identified as a concern in the engineering analysis performed for the Project sites (see Appendix D and TMs in Appendix E.
Prime and Unique Farmland	X		Prime farmland is located within the Project area.
Water			
Surface Water Quality	X		Construction ground disturbance could affect surface water quality.
Water Quantity and Water Flow	X		Deficiencies in the Daniel irrigation system result in reduced water delivery quantities to croplands. Alternative actions modify water flow conditions along Center Creek.
Groundwater		X	There would be no measurable change to groundwater conditions
Waters of the U.S.	X		Waters of the U.S. were identified within the Project area.
Wetlands	X		Wetlands were identified within the Project area.
Regional Water Mgmt. Plans and Coastal Zone Management Areas		X	No regional water management plans have been found for the Project area. Coastal Zone Management Areas are not applicable (N/A) for the Project area.
Floodplain Management	X		Alternative measures would not change any existing Flood Emergency Management Agency (FEMA) flood zone designations. However, alternative measures address ice-induced flooding at an intersection.
Wild and Scenic Rivers		X	None in or near the Project area (NWSRS 2021).
Sole Source Aquifers		X	None in or near the Project area (EPA 2021a).
Air			
Air Quality	X		Construction activities produce emissions and fugitive dust.
Clean Air Act		X	Permits will not be required.

Resource Concern	Relevant[1]?		Rationale
	Yes	No	
Plants			
Special Status Plant Species		X	No Endangered Species Act (ESA)- or state-listed plant species or habitat occur within the Project area. A Biological Assessment (BA) was submitted to the USFWS on May 11, 2022 and December 9, 2024 to comply with ESA Section 7 consultation (Appendix A).
Forest Resources		X	Forested lands are not located in or near the Project area.
Noxious Weeds and Invasive Plant Species	X		Construction disturbance increases the risk of noxious weeds and invasive species becoming established.
Protected Natural Areas		X	No protected natural areas occur within the Project area.
Riparian Areas	X		Riparian areas are present in the Project area.
Animals			
Essential Fish Habitat		X	Essential fish habitat is not present within the Project area.
National Wildlife Refuges / Wilderness Areas		X	There are no Wilderness Areas or National Wildlife Refuges located in or near the Project area based on review of Wilderness Area (Wilderness Connect 2021) and Wildlife Refuge (USFWS 2021a) maps.
Fish and Wildlife Habitat	X		Terrestrial and aquatic habitats are present within the Project area.
Coral Reefs		X	Not applicable
Special Status Animal Species	X		No ESA-listed animal species or habitat are expected to occur within the Project area due to lack of habitat and no known occurrence. A No Effect determination for ESA animal species was submitted to the USFWS on May 11, 2022 and December 9, 2024, to comply with ESA Section 7 consultation (Appendix A). State sensitive species have the potential to occur within the Project area.
Invasive Animal Species		X	No potential for introduction of invasive animal species.
Migratory Birds, Bald Eagles, and Golden Eagles	X		Golden Eagles and their associated habitat are not present in the Project area. Migratory birds, bald eagles and associated habitat are present within the Project area.
Human			
Socioeconomics	X		The Project areas are in populated areas that could be affected by alternative actions.
Historic Properties / Cultural Resources	X		Cultural and historic resources are present within the Area of Potential Effects (APE).
Hazardous Materials	X		Hazardous materials (asbestos) occur within the Project area. Equipment and associated fuels would be working/stored on-site during construction.
Public Health and Safety	X		Public health and safety issues are present in the Project area.
Recreation		X	Recreation activities do not occur on lands within the Project area.
Land Use		X	Land use changes are not anticipated.

Resource Concern	Relevant[1]?		Rationale
	Yes	No	
Visual Resources and Scenic Beauty		X	Areas of scenic beauty are not present within the Project area. Alternative disturbance includes ground and underground work with no vertical elements, is proposed in roadways and disturbed areas, would be restored to preconstruction conditions, and is not expected have a measurable impact to visual quality.
Parklands		X	There are no state or local parks within or near the Project area (Utah Department of Natural Resources [UDNR] 2021).
Transportation Infrastructure	X		Transportation corridors could be affected during construction.
Noise	X		Temporary construction noise is anticipated.
Ecological Critical Areas		X	No ecological critical areas are in or near the Project area.
National Parks and Monuments		X	No national parks or monuments are in or near the Project area (NPS 2021a and NPS 2021b).
Scientific Resources		X	No scientific resources are in the Project area.

1 – Relevant to the Proposed Action

4.0 Affected Environment

The purpose of this section is to describe the resources that could be affected by the proposed alternatives. The intent of describing the affected environment is to define the context in which the impacts could occur. The environmental analysis process has been conducted in compliance with applicable federal, state, and local regulations. Resources relevant to the Project are described in Sections 4.1 through 4.6. The environmental consequences to each of the resources discussed in this section are included in Section 6.0.

The area proposed for disturbance from Project measures is located in and adjoining the Town of Daniel, in Wasatch County, Utah (Appendix B – Map B1). Measures are proposed at two sites, Site 1 (Daniel Irrigation) and Site 2 (Center Creek). The Project area includes approximately 60.7 acres (Appendix B – Map B2) that contains areas proposed for construction access/staging and improvements for alternative measures. Table 4-1 summarizes the physical setting of the Project area.

Table 4-1. Physical Setting Summary

Physical Setting Information		Information Source
Location		
The Project area is located in and near the town of Daniel in Wasatch County, Utah.		N/A
Size		
60.7 acres (Site 1 = 57.5 acres, and Site 2 = 3.2 acres)		Measured from QGIS version 3.16
Topography		
Elevation	5700 to 6000 feet	7.5-Minute Series Topographic Map for Charleston, UT Quadrangle (USGS 2020)
General Topographic Gradient	Sloping west-northwest	

Physical Setting Information		Information Source
Geology		
Geologic Units	**Younger alluvium (Qay)**: Holocene and upper Pleistocene undivided post-Provo shoreline alluvial fan and terrace alluvium. In Heber Valley, sediment is moderately sorted sand, silt, and gravel forming a broad planar surface. Thickness is likely less than 50 feet. **Stream and floodplain alluvium (Qal)**: Holocene sand, silt, clay, and gravel in channels and floodplains. Thickness is 0 to 20 feet, depending on the area. **Alluvial fan deposits, undivided (Qaf)**: Holocene and upper Pleistocene poorly sorted sand, silt, and gravel that is typically deposited at drainage mouths. Thickness is less than 40 feet. **Oquirrh Formation, Wallsburg Ridge Member (lPowr):** Pennsylvanian, Virgilian-Missourian quartzite and sandstone that is thick-bedded and fine- to medium-grained. Thickness is 3,700 feet in the Center Creek quadrangle.	Geologic Map of the Provo 30' x 60' Quadrangle, UT (Constenius et al. 2011)
Soil Characteristics		
Soil Types	Ca, CgA, CgB, CgC, HeA, Hk, Hr, Km, MaB, St, YaB See Section 4.1 below for soil descriptions.	Web Soil Survey (NRCS 2021b)
Land Information		
Land Ownership	Road Right-of-Way: 33.8 acres (56%) Private: 25.0 acres (41%) U.S. Bureau of Reclamation: 1.9 acres (3%)	Wasatch County Parcel Data (Wasatch County 2021) & Aerial Image Review (Google Earth Pro 2017)

4.1 Soil Resources

A total of 11 soil types have been identified within the proposed Project Area (NRCS 2021b) and are listed in Table 4-2. Most areas within the Project extents consist of disturbed lands, engineered fill, and concrete/asphalt surfaces and are not consistent with the soil descriptions listed below or depicted in Map C1 Soils located in Appendix C.

Table 4-2. Soil Summary

Soil Unit Name	Landform	Slope (%)	Description	Farmland Classification	Ecological Site[1]
Center Creek Site					
Center Creek loam (Ca)	Terraces	1-3	Loam over clay loam over very gravelly to extremely gravelly loam	Prime farmland if irrigated and drained	Semiwet Fresh Streambank (Narrowleaf Cottonwood)

Soil Unit Name	Landform	Slope (%)	Description	Farmland Classification	Ecological Site[1]
Daniels Irrigation Site					
Clegg Loam (CgA)	Alluvial fans	1-3	Loam	Prime farmland if irrigated	Mountain Loam (Mountain Big Sagebrush)
Clegg Loam (CgB)	Alluvial fans	3-6	Loam	Prime farmland if irrigated	Mountain Loam (Mountain Big Sagebrush)
Clegg Loam (CgC)	Alluvial fans	6-15	Loam	Farmland of statewide importance	Mountain Loam (Mountain Big Sagebrush)
Henefer Silt Loam (HeA)	Alluvial fans	1-3	Silt loam over cobbly to extremely cobbly silt/clay loam	Prime farmland if irrigated	Mountain Loam (Mountain Big Sagebrush)
Holmes Cobbly Sandy Loam (Hk)	Alluvial fans & stream terraces	1-3	Cobbly sandy loam over extremely cobbly sandy loam over extremely gravelly loamy coarse sand	Farmland of statewide importance	Mountain Stony Loam (Mountain Big Sagebrush)
Holmes Gravelly loam (Hr)	Alluvial fans & stream terraces	1-3	Gravelly and very gravelly loam over extremely gravelly coarse sandy loam and loamy coarse sand	Farmland of statewide importance	Mountain Stony Loam (Mountain Big Sagebrush)
Kovich Loam, Deep Water Table Variant (Km)	Floodplains & stream terraces	2-5	Loam over silt loam over loam	Farmland of statewide importance	Interzonal Cold Semiwet Fresh Meadow (Meadow Sedge/Tufted Hairgrass)
Manilla Silt Loam (MaB)	Alluvial fans	3-6	Silt loam over silty clay loam	Prime farmland if irrigated	Mountain Loam (Oak)
Steed Loam, Cold Variant (St)	Alluvial fans, floodplains, stream terraces	1-3	Loam over very cobbly loam over extremely gravelly loamy sand	Farmland of statewide importance	Mountain Loamy Bottom (Basin Big Sagebrush)
Yeates Hollow Loam (YaB)	Alluvial fans	2-5	Loam over very cobbly clay loam over very cobbly sandy clay over extremely cobbly clay	Farmland of statewide importance	Mountain Stony Loam (Gambel Oak)

[1] Ecological sites comprise a land classification system that describes ecological potential and ecosystem dynamics of land areas. They are used to stratify the landscape and organize ecological information for purposes of monitoring, assessment, and management.

4.1.1 Upland Erosion

Erosivity of soils depends on soil characteristics and the forces acting on them, such as wind, chemical processes, and water interaction. Water is the most powerful erosive force causing the most damage when flowing down steeper slopes. The steeper the terrain, the greater potential for erosion from water interaction due to increased water velocities.

The Project area is at a gentle gradient and ground surfaces are stabilized with paved roads, gravel roads, gravel areas, and vegetated areas. There does not appear to be erosional issues based on field observations conducted by Adaptive Environmental Planning (AEP) in November 2021.

4.1.2 Prime and Unique Farmland

NRCS, in cooperation with other interested federal, state, and local governments, has inventoried land that can be used to produce the Nation's food supply. The extent and location of important soils that are best suited for food, feed, fiber, forage, and oilseed crops have been identified and classified as prime farmland, unique farmland, and farmland of statewide or local importance.

Soil within the Project area have been classified as "prime farmland if irrigated" and "farmland of statewide importance." Most of the project area is located on disturbed lands that have undergone excavation/fill activities or are developed with paved and graveled road corridors. Areas that still contain mostly undisturbed soils were determined to be suitable for maintaining their classifications. Based on field observations conducted by AEP in November 2021, review of aerial photography, and comparison to specialized farmland classifications, approximately 1.52 acres of soils classified as "prime farmland if irrigated" and 10.57 acres of soils classified as "farmland of statewide importance" still remain within the Project area (Appendix C – Map C1)

4.2 Water Resources

4.2.1 Surface Water Quality

Under Section 303(d) of the Clean Water Act (CWA), states, territories, and authorized tribes are required to develop lists of impaired waters. These are waters that are too polluted or degraded to meet the water quality standards set by states, territories, or authorized tribes. For each water on the list, the state identifies the pollutant causing the impairment, when known. In addition, the state assigns a priority for development of Total Maximum Daily Loads (TMDL) based on the severity of the pollution and the sensitivity of the uses to be made of the waters, among other factors (40 C.F.R. §130.7(b)(4)).

Surface water within the Project area consists of two streams (Daniels Creek and Center Creek), two irrigation ponds (Middle Pond and Lower Pond), and an irrigation ditch. None of the surface waters are listed on the 303(d) list for impairments, except for Center Creek listed as impaired from E. coli (UDEQ 2020)

Utah's antidegradation policy (Rule R317-2-3; Utah Office of Administrative Rules 2018) does not prohibit degradation of water quality unless the Water Quality Board has previously considered the water to be of exceptional recreational or ecological significance (Category 1 or Category 2 waters). No Category 1 or Category 2 waters exist within or near the Project area; therefore, the antidegradation policy does not apply.

4.2.2 Waters of the U.S. and Wetlands

An aquatic resources report for the Project area was completed (BC&A 2022b) to identify aquatic resources that could be potential waters of the U.S. (see Appendix E for aquatic resources report). Refer to Appendix D for a summary of survey/research methods and assumptions. Several aquatic features were delineated including irrigation ditches, two irrigation storage ponds, sections

of Center Creek, sections of Daniels Creek, and emergent wetlands adjoining Daniels Creek. The irrigation ditches and ponds are assumed non-jurisdictional due to lack of connectivity to other surface waters. Delineated sections of Center Creek, Daniels Creek, and wetlands are assumed jurisdictional because they have connectivity to jurisdictional surface waters. A USACE jurisdictional determination would be requested during future final design phases for this Project to support USACE Section 404 permitting that may be required.

Center Creek, Daniels Creek and wetlands were classified according to the Cowardin classification system (Cowardin et al. 1979). These features and their Cowardin classifications are listed in Table 4-3. A map of the potential jurisdictional delineated features within the Project area is provided in Appendix C – Map C2.

Table 4-3. Potential Waters of the U.S.

Aquatic Resource Feature	System	Subsystem	Class	Modifier/Subclass*	Length /Area*
Daniels Creek	Riverine (R)	Intermittent (4)	Stream Bed (SB)	*Seasonally Flooded (C)*	310 ft
Center Creek	R	4	SB	*C*	337 ft
Emergent Wetland	Palustrine (P)	-	Emergent (EM)	Persistent (1), Seasonally Flooded/Saturated (E)	0.62 ac

** Waters of the U.S. are shown as linear feet (ft) and wetlands are shown as acres (ac).*

4.2.3 Water Quantity and Flow

Two streams flow through the Project area consisting of Daniels Creek and Center Creek (refer to Section 4.2.3). Daniels Creek and Center Creek are intermittent with high flows occurring during spring runoff, little to no flow occurring during summer and fall, and low flows throughout winter. There is one gage monitoring location along Daniels Creek which is located downstream of the Project area just upstream of Deer Creek Reservoir. Stream gage data (USGS 2024) from this monitoring locations from the past year shows 0.3 cfs or less flow from November through mid-March with a slow increase in flow to 2.7 cfs from mid-March to mid-April. In mid-April a drastic jump in flow from 2.7 to 55 cfs occurred within one week and the flows ranged between 11 and 59 cfs from late April through May. The creek flow dropped abruptly from 11 cfs on May 30th down to no flow by June 7th. From June 7th through mid-November no flow was present except for a few days where flows were measured at 0.6 cfs or less. Center Creek does not have flow monitoring locations. However, snowmelt runoff during freezing months was identified as an issue resulting in channel overflow and flooding at the Center Creek Road and S 2400 E intersection (refer to Section 2.2.2 and 4.2.4).

Water delivery issues have been identified within the Daniel Irrigation system that reduces the quantity of water reaching irrigated lands. Sprinkler irrigation pressures deficiencies, interruption in irrigation water delivery due to asbestos cement pipe breaks, and water conveyance losses in the Daniel Irrigation system result in an estimated combined reduction in water delivery to the croplands of 23 percent (refer to Section 2.2.1). Water is provided to the Daniel Irrigation system from CUWCD who is the wholesale water provider that operates/maintains the main water trunklines.

4.2.4 Floodplain Management

The FEMA coordinates the federal government's role in preparing for, preventing, mitigating, the effects of, responding to, and recovering from all domestic disasters, whether natural or human-caused, including acts of terror. The FEMA has developed floodplain regulations through the National Flood Insurance Program (NFIP) that are adopted by communities to enforce floodplain management regulations that help mitigate flooding effects.

The current FEMA Federal Insurance Rate Maps (FIRMs) that contain the Project area (FEMA 2012, Map Numbers 49051C0256E, 49051C0257E, 49051C0260E) show several Special Flood Hazard Areas (SFHAs). At Site 1 for Daniel Irrigation, most of the Project area is located in Zone X outside of the 0.2 percent annual chance floodplain (500-year floodplain), except for the segment adjoining the south side of Daniels Creek. Portions of the segment south of Daniels Creek are in Zone A within the 1 percent annual chance flood, but base flood elevations have not been determined for this area. At Site 2 for Center Creek, the creek is identified as the Regulatory Floodway with the remaining portion of the Site 2 Project area in Zone X (shaded). Zone X (shaded) includes areas of the 0.2 percent annual chance flood, areas of the 1 percent annual chance flood with depths of less than 1-foot, or areas protected by levees from the 1 percent annual chance flood.

In addition to FEMA SFHAs, Site 2 for Center Creek has ice-induced flooding issues (see Section 2.2.2). Shallow flooding occurs along Center Creek near the intersection of Center Creek Road and S 2400 E Road. This flooding occurs due to freezing water in the channel reducing channel capacity, or from ice jams. The County Road Department places temporary hazard traffic signage/barriers seasonally to warn the public of the hazard.

4.3 Air Resources

4.3.1 Air Quality

The U.S. Environmental Protection Agency (EPA) has established health-based National Ambient Air Quality Standards (NAAQS) for six pollutants considered harmful to public health and the environment, known as criteria pollutants. NAAQS pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), sulfur dioxide (SO_2), and lead (Pb). Monitoring of NAAQS pollutants in Utah is delegated to the Utah Division of Air Quality (UDAQ). UDAQ had 22 fixed air quality monitoring stations throughout the state of Utah that monitored the NAAQS pollutants in 2020 (UDEQ 2020). There are no monitoring stations located near the Project area and the closest monitoring stations are located on the other side (west side) of the Wasatch Mountain Range in the Salt Lake City area. However, the Project area is not located within a non-attainment area, and exceedance of the NAAQS is not a concern for this area (UDEQ 2022a).

Under Title R307 of the Utah Administrative Code, emission inventories must be undertaken to further characterize air quality throughout Utah. Emission inventories are conducted every 3 years, during which UDAQ collects information about the types and quantities of compounds released by all emission sources in the state. Sources can be categorized as point (large stationary industrial or commercial facilities), area (smaller stationary sources that are assessed as a group), or mobile (personal or commercial vehicles). The 2017 triennial inventory is the most recent state-wide inventory available. It covers 486 individual point sources, 128 area categories,

65 oil and gas categories, 32 on-road categories, and 215 non-road categories (UDEQ 2020). The data collected are used by UDAQ to review trends over time and manage the air quality program. Results in tons of compound emitted per year for Wasatch County are shown in Table 4-4. No specific air quality issues were identified for the Project area based on a review of available air quality information.

Table 4-4. 2017 UDAQ Emissions Inventory (tons/year)

County	CO	NO_x	PM10	PM2.5	SO_2	VOC
Tooele	7,122	1,091	4,029	571	12	13,626

UDEQ 2020; VOC = volatile organic compound

4.3.2 Greenhouse Gasses and Climate Change

Climate change is driven primarily by the greenhouse effect where gases trap the sun's heat in the atmosphere. Gases that trap heat in the atmosphere are called greenhouse gases (GHG) and include CO_2, methane (CH_4), nitrous oxide (N_2O), and fluorinated gases (hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride). These GHGs are introduced into the atmosphere by a variety of sources including production of electricity, private and commercial transportation, industry practices, commercial and residential practices, agriculture, land use, and forestry. The largest source of GHG emissions from human activities in the U.S. is from burning fossil fuels for electricity, heat, and transportation (EPA 2024b).

The total gross GHG emissions by gas for the nation in 2021 was reported at 6,340.23 million metric tons of carbon dioxide equivalent (MMT CO_2 eq.) with Utah contributing 79.19 MMT CO_2 eq., or 1.2% of the nation's MMT CO_2 eq (EPA 2021b). From 1990 to 2021, the national GHG emissions had a total gross decrease of 2.3% while Utah had a total gross increase of 17.7% (EPA 2021b). In 2021 the primary economic sectors contributing GHG in Utah include transportation contributing 28.5%, electric power industry contributing 25%, and industry contributing 23.5%.

4.4 Plant Resources

4.4.1 Noxious Weeds and Invasive Plants

Executive Order 13122 states that, "a federal agency shall not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction and spread of invasive species in the U.S. or elsewhere." Noxious weeds and invasive plants (N&I weeds) are non-native plant species designated by state law or county ordinance that cause, or have potential to cause, extraordinary negative economic and ecological impacts.

Wasatch County maintains a weed plan developed for public awareness, and to prevent, inventory, map, monitor, and report invasive and noxious weeds (Wasatch County 2018). The weed plan includes a list of weeds that are to be controlled per Utah Noxious Weet Act for the county and are separated into the classes described below.

- Class 1A (Early Detection Rapid Response): Declared noxious/invasive weeds not native to Utah and not known to exist in the state but pose a serious threat to the state and should be considered as a very high priority.
- Class 1 B (Early Detection Rapid Response): Declared noxious/invasive weeds not native to Utah and known to exist in the state in very limited populations but pose a serious threat to the state and should be considered as a very high priority.
- Class 2 (Control): Declared noxious/invasive weeds not native to Utah and known to exist in varying population throughout the state that pose a threat to the state and should be considered a high priority for control. The concentration of these noxious/invasive weeds is at a level where control or eradication may be possible.
- Class 3 (Containment): Declared noxious/invasive weeds not native to Utah that are widely spread and known to exist in various populations throughout the state. These noxious/invasive weeds pose a threat to the agricultural industry and agricultural products. Weed control efforts may be directed at reducing or eliminating new or expanding populations through the state. Known and established weed populations, as determined by the weed control authority, may be managed by any approved weed control methodology, as determined by the weed control authority.
- Class 4 (Prohibited): Declared noxious/invasive weeds not native to Utah that pose a threat to the state through the retail sale or propagation in the nursery and greenhouse industry. The weeds are annual, biennial, or perennial plants that the commissioner designates as having the potential or are known to be detrimental the human or animal health, the environment, public roads, crops, or other property.

Most of the Project area is located on heavily disturbed lands within transportation right of ways (ROWs). Adjacent private lands are highly disturbed from development and agricultural practices. Soil disturbance and seed dispersal from vehicles, foot traffic, livestock, wildlife, and other on-site activities increase the risk for invasion of noxious weeds and invasive plants. N&I weeds and non-native weeds were observed in the Project area during wetland delineation field work (BC&A 2022b) and during a site visit conducted by AEP on November 10, 2021. Weeds observed are included in Table 4-5, and three of the weeds observed (Canada thistle, scotch thistle, and spotted knapweed) are included in the Wasatch County weed plan. Dominant weeds within the Project area included kochia that was primarily observed along road ROWs and common stork's-bill.

Table 4-5. Observed Weeds within the Project Area

Name	Scientific Name	Non-Native	Weed Class
Canada Thistle	*Cirsium arvense*	X	3
Cheatgrass	*Bromus tectorum*	X	N/A
Common stork's-bill	common stork's-bill	X	N/A
Kochia	*Kochia scoparia*	X	N/A
Mexican fireweed	*Bassia scoparia*	X	N/A
Mullein	*Verbascum thapsus*	X	N/A
Pennycress Mustard	*Thlaspi arvense*	X	N/A

Name	Scientific Name	Non-Native	Weed Class
Prickly lettuce	*Lactuca serriola*	X	N/A
Russian thistle	*Salsola tragus*	X	N/A
Scotch Thistle	*Onopordum acanthium*	X	3
Spotted Knapweed	*Centaurea stoebe*	X	2
Tumble mustard	*Sisymbrium altissimum*	X	N/A

4.4.2 Riparian Areas

Riparian Areas exist in the transitional zone between aquatic and terrestrial ecosystems. They feature different vegetative species than the adjoining ecosystems and exhibit more vigorous growth due to shallow groundwater interaction. They generally consist of long strips of vegetation adjacent to streams, rivers, lakes, reservoirs, and other inland aquatic systems that affect or are affected by the presence of water (Fischer et al. 2000). These areas typically harbor a large number of wildlife species and perform numerous ecological functions.

Based on a site visit conducted on November 10, 2021 by AEP, two riparian areas are present within the Project area. These consisted of 0.29 acres adjoining Daniels Creek (Figure 4-1) and 1.92 acres adjoining an irrigation ditch (Figure 4-2) within Site 1 (Daniels Irrigation). Riparian areas are depicted in Appendix C – Map C3A). Dominate vegetation within the riparian areas consisted of narrow leaf cottonwood and coyote willow adjoining Daniels Creek, and narrow leaf cottonwood and golden willow adjoining the irrigation ditch. The riparian strips along these water features were narrow at approximately 50 feet wide along Daniels Creek and approximately 15-40 feet wide along the irrigation ditch. The riparian areas were surrounded by heavily disturbed developed and agricultural lands.

Figure 4-1. Riparian Corridor Adjoining Daniels Creek

Figure 4-2. Riparian Corridor Adjoining Irrigation Ditch

4.5 Animal Resources

4.5.1 Wildlife and Wildlife Habitat

Wildlife habitat in the Project area is limited, but some areas may support a range of native and non-native migratory birds, resident birds, mammals, and reptiles. Wildlife populations that are the most documented and understood include those that are listed for protection under the ESA, are a state species of concern, or are desired game or furbearers. Wildlife habitat areas identified by DWR as substantial and crucial are in the Project area. This consists of substantial habitat for Hungarian partridge and Utah ruffed grouse, and crucial habitat for California quail (DWR 2022). Substantial and crucial habitat is defined by DWR as:

- Substantial – Habitat used by a wildlife species but is not crucial for population survival. Degradation or unavailability of substantial value habitat will not lead to significant declines in carrying capacity and/or numbers of the wildlife species in question.
- Crucial – habitat on which the local population of a wildlife species depends for survival because there are not alternative ranges or habitats available. Crucial value habitat is essential to the life history requirements of a wildlife species. Degradation or unavailability of crucial habitat will lead to significant declines in carrying capacity and/or numbers of wildlife species in question.

Most of the wildlife habitat within the Project area is of low quality due to its location within heavily disturbed areas in and adjoining transportation ROWs. Approximately 78.3% (47.51 acres) of the project area is developed or disturbed and does not contain habitat. Cultivated crops and agricultural pastures make up 10.9% (6.61 acres) of the Project area and contain minimal low-quality habitat that is frequently disturbed from agricultural practices and lacks cover. The highest quality habitat is located along Daniels Creek where mostly undisturbed water, riparian, wetland, grassland, and shrub habitats exist. However, the immediate areas surrounding these habitats are highly disturbed from development and agricultural practices. A breakdown of habitat types in the Project area and their percentage is provided in Table 4-6 and a map depicting habitat types is provided in Appendix C – Maps 3A and 3B.

Table 4-6. Habitat within the Project Area

Habitat Type	Acres in Project Area	Percent of Project Area
Developed	47.51	78.3%
Cultivated Crops / Pasture	6.61	10.9%
Grassland	2.69	4.4%
Riparian	2.21	3.7%
Shrub	0.31	0.5%
Water	0.75	1.2%
Wetland	0.62	1.0%
Total	**60.7**	**100%**

4.5.2 Special Status Animal Species

Based on Biological Assessments (BAs) completed for the Project (BC&A 2022c and BC&A 2024), ESA-listed species would not likely be present because suitable habitat is not located within the Project area (refer to Appendix E for the BAs). However, state-listed Species of Greatest Conservation Need (SGCN) as identified in the Utah Wildlife Action Plan (Utah Division of Wildlife Resources [DWR] 2015a), have potential to occur within the Project area. Based on a review of the state-listed species for Wasatch County (DWR 2015b), SGCN status, and DWR species known occurrence for the Charleston, Utah quadrangle (DWR 2022a), there are nine SGCN that were identified for consideration of Project actions. Of the nine SGCN, five were determined to have suitable habitat or potential occurrence within the Project area (Table 4-7). This includes bald eagle for foraging only, northern leopard frog, Columbia spotted frog, southern leatherside chub, and Bonneville cutthroat trout. Please refer to the species write ups below the table for additional information on species occurrence within the Project area.

Table 4-7. Utah State Species of Greatest Conservation Need

Common Name (Scientific Name)	Habitat/Range Requirements	Potential Occurrence in the Project area
Mammals		
Townsend's big-eared bat *(Corynorhinus townsendii)*	Primary habitat component includes the availability of caves or mines for roost sites and often near forested areas (DWR 2022b).	Suitable habitat is not present, and the species are not expected to be found in the Project area.
Birds		
Band-tailed pigeon (*Patagioenas fasciata*)	Breeding occurs in temperate mountain coniferous and mixed forests and woodlands, especially pine-oak woodlands, and in Utah mostly Gambel oak and pinyon pine (DWR 2022b). Foraging occurs in cultivated areas, suburban gardens, and parks (DWR 2022b).	Suitable breeding habitat is not present but is located near the Project area. Based on email correspondence with DWR (Appendix A) band-tailed pigeons would not be found in the Project area.

Common Name (Scientific Name)	Habitat/Range Requirements	Potential Occurrence in the Project area
Bald eagle (*Haliaeetus leucocephalus*)	Breeding sites are extremely rare in Utah with one in Emery County, two in Grand County, and one in Salt Lake County, and the species avoid areas with nearby human activity and development (DWR 2022). They typically prey on fish and waterfowl.	Suitable breeding habitat is not present, but the species may use portions of the project area to forage.
Greater sage-grouse (*Centrocercus urophasianus*)	The species inhabit sagebrush plains foothills, and mountain valleys with sagebrush being the predominant plant of quality habitat (DWR 2022b).	Suitable breeding or foraging habitat is not present, and the species are not expected to be found in the Project area.
Yellow-billed cuckoo (*Coccyzus americanus*)	Breeding occurs in large tracts (100-200 acres) of contiguous riparian nesting habitat (DWR 2022b).	Suitable breeding or foraging habitat is not present, and the species are not expected to be found in the Project area.
Amphibians and Reptiles		
Northern leopard frog (*Rana pipiens*)	The species live in springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes; usually in or near permanent water with rooted aquatic vegetation (DWR 2022b).	Suitable habitat is present along canals, streams, and ponds in the Project area.
Columbia spotted frog (*Rana luteiventris*)	The species range in Utah includes the Bonneville Basin of western Utah, parts of the Wasatch Mountains, the San Pitch River Drainage, and isolated springs and wetlands of the West Desert (DWR 2022b)	The proposed Project area is outside the documented range of the species. However, UDWR indicated that known populations occur near the Project area.
Fishes		
Southern leatherside chub (*Lepidomeda aliciae*)	The species is native only to the Bonneville Basin and disjunct populations in the Provo, Spanish Fork, San Pitch, and Sevier River Basins (DWR 2022b).	The Project area is located within the Provo River basin and suitable habitat is present in Daniels Creek and Center Creek.
Bonneville cutthroat trout (*Oncorhynchus clarkii utah*)	Occurs throughout the state and within the Provo River System (DWR 2022b).	The Project area is located with the Provo River basin and suitable habitat is present in Daniels Creek and Center Creek.

***Bold** indicates suitable habitat or potential occurrence in the Project area.*

4.5.2.1 *Bald Eagle*

Nesting habitat for bald eagle is not present within the Project area, however, the species could be present while foraging during wintering months (October through March). Small areas of water habitat adjoining Daniels Creek may offer limited foraging habitat for the species.

4.5.2.2 *Northern Leopard Frog*

Northern leopard frogs have the potential to be present within the Project area year-round. Based on email correspondence with DWR (Appendix A) there are no known populations of frogs in the area, but it is possible they could be present. The species, if present, would likely be found near permanent stagnant or slow-moving water bodies. Northern leopard frogs hibernate underwater in ponds and lakes from October through March (Amphibiaweb 2022) and begin breeding after emergence from hibernation. Lower Pond is the only suitable hibernation habitat present, as Middle Pond only contains water during the irrigation season (April through October). Therefore, the species may have the potential to be present in and around the Middle Pond.

4.5.2.3 *Columbia Spotted Frog*

Columbia spotted frogs occur in scattered locations in the Bonneville Basin of western Utah, including parts of the Wasatch Mountains, the San Pitch River Drainage, and isolated springs and wetlands of the West Desert (DWR 2022b). Populations are tied to aquatic habitat with perennial sources of water and breeding occurs in small pools and ponds (DWR 2022b). Based on email correspondence with DWR (Appendix A) it is likely the species could be present, but if not present, the Project area is very close to known populations. The species, if present, would likely be found in or near permanent surface waters along Daniels Creek and Lower Pond.

4.5.2.4 *Southern Leatherside Chub*

The southern leatherside chub occurs in sluggish pools and backwaters, usually over sand or mud of creeks and small to medium rivers (Page and Burr 2011 as referenced in DWR 2022b). They spawn in late spring and early summer (Wesner et al. 2015). Based on email correspondence with DWR (Appendix A) the species has historic occurrences in the area and could possibly still occur in low densities.

4.5.2.5 *Bonneville Cutthroat Trout*

Bonneville cutthroat trout occur in large lakes, rivers, and streams in Utah. Most populations are found in the headwater streams and high-elevation river reaches of drainages entering the Bonneville Basin at its eastern and southeastern edge (DWR 2022b). Based on email correspondence with DWRthe species could occur in the Project area (Appendix A).

4.5.3 Migratory Birds / Bald and Golden Eagles

Migratory birds are afforded protection under authority of the Migratory Bird Treaty Act (MBTA) (16 U.S.C 703-712). Under the MBTA, it is unlawful to take, kill, or possess migratory birds, their parts, nests, or eggs. Migratory Bird Permits must be obtained through the USFWS Migratory Bird Permit Office for any requested waiver or exception to the MBTA.

Eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C 668), which provides specific protection for bald and golden eagles. The act makes it illegal to take, possess, sell, purchase, barter, or transport any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. The term *take* includes any attempt or success at pursuing, shooting, shooting at, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing.

Migratory birds and bald eagles may occur within the Project area. Most of the Project area is developed and does not offer nesting or foraging habitat. No nesting habitat for bald eagles is present in the Project area (refer to section 4.5.2), but the species could be present while foraging in and near open water along Daniels Creek or at the Lower and Middle Ponds. Nesting habitat for migratory birds may be present within the Project area in undeveloped sections along Daniels Creek and along the irrigation ditch extending north from Middle Pond. Migratory birds may also use the undeveloped grassland, crop/pasture, shrub, riparian, water, and wetland habitats while foraging. Habitat within the Project area is depicted in Appendix C – Maps C3A and C3B.

4.6 Human Resources

4.6.1 Socioeconomics

The U.S. Census Bureau collects and maintains socioeconomic data per Census Tract. Census tracts are contiguous areas that typically encompass a subsection of a county and have a population between 1,200 and 8,000 individuals (U.S. Census Bureau [USCB] 2022). The Project area is in Census Tract 9405 within Wasatch County, Utah. The following subsections describe the current demographic, employment, income, and economic conditions for Census Tract 9405, Wasatch County, and the State of Utah.

4.6.1.1 *Population and Demographics*

Approximately 98.4 percent of Census Tract 9604 is white, which is a higher percentage than both Wasatch County and the State of Utah (Table 4-8). Hispanic ethnicity within these areas includes 1.8% for census tract 9604, 13.3% for Wasatch County, and 14.0 % for Utah (American Community Survey 2019).

Table 4-8. Demographic Profile Summary

Race	Census Tract 9604		Wasatch County		Utah	
	Estimate	%	Estimate	%	Estimate	%
White	6,496	98.4	29,947	94.4	2,676,482	86.4
African American	--	--	87	0.3	36,849	1.2
American Indian	53	0.8	93	0.3	33,721	1.1
Asian	10	0.2	432	1.4	71,977	2.3
Pacific Islander	--	--	5	<0.1	27,554	0.9
Other Races	2	<0.1	454	1.4	156,229	5.0
Two or More Races	41	0.6	690	2.2	94,036	3.1
Total	6,602	100	31,708	100	3,096,848	100

**Source: American Community Survey 2019*

4.6.1.2 *Employment and Income*

Census tract 9604 has a lower unemployment rate comparted to Wasatch County and Utah (Table 4-9). The median household income for Census Tract 9604 was $86,613, which is slightly higher than Wasatch County ($85,166) but lower than Utah State ($71,621).

Table 4-9. Employment and Income Summary

Item	Census Tract 9604		Wasatch County		Utah	
	Estimate	%	Estimate	%	Estimate	%
Civilian labor force	3,149	100	16,045	100	1,552,893	100
Employed	3,106	98.6	15,771	98.3	1,497,354	96.4
Unemployed	43	1.4	274	1.7	55,539	3.6
Median Household Income	$86,613	-	$85,166	-	$71,621	-
Below Poverty Level	143	4.5	1,865	11.6	298,537	19.2

**Source: American Community Survey 2019*

4.6.1.3 *Local Economy*

The benefited area consists of approximately 990 acres of agricultural land producing primarily alfalfa (hay) as depicted in Appendix B, Map B5. The irrigation system supplying water to these agricultural lands is estimated to have a combined water deficit to crops of 23 percent from pressure deficiencies and water supply reliability issues (refer to Section 2.2.1). The reduced water delivery has resulted in a loss of crop productivity. The current crop yield is estimated at 2.7 tons of hay per acre which is below the 3.5 tons per acre full yield. This equates to a total annual loss of crop productivity estimated at $119,000. Refer to the PR&G Analysis Report included in Appendix E for additional information on assumptions and calculations for water deficits and crop yield losses. Additionally, increasing breaks in asbestos cement pipe are a costly burden on the irrigation company. The annual cost for pipe repair was estimated at $70,000 (amortized and discounted).

4.6.2 Historic Properties / Cultural Resources / Native American Religious Concerns

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended (54 U.S.C. 300101), requires federal agencies to consider the effects of their undertakings on historic properties. A Cultural Resource Assessment was conducted for the Project (Certus Environmental Solutions, LLC [Certus] 2021) to identify and document cultural resources with potential to be impacted by alternative measures. Cultural resources include archaeological sites, historic structures, sacred sites, and traditional cultural properties (TCPs) that are important to a community's practices and beliefs, and are necessary to maintain a community's cultural identity.

The survey was conducted across 63-acres that encompassed the smaller Area of Potential Effects (APE), which included all access roads, staging areas, and improvements for alternatives (per 36 CFR 800.16(d)). The APE includes the entire 60.7-acre Project area. Refer to Appendix D for a summary of survey/research methods and assumptions. An intensive-level survey was performed within the survey area on June 17, 2021, by a Secretary of the Interior-qualified archaeologist and architectural historian. A file search and archival research was conducted prior to the survey which included the survey area plus a ½-mile buffer around the survey area. The file search and field survey identified five cultural resource sites within the survey area consisting of historical canals and a historical foundation. No prehistoric sites were identified within the survey area. A map of the historical canals is provided in Appendix C – Map C4, and additional

information for the features is provided below (Certus 2021).The full Cultural Resources Assessment is included in Appendix E.

The NRCS evaluated the cultural resource sites for their eligibility to the National Register of Historic Places (NRHP). Cultural resources that meet the specific criteria outlined in 36 CFR Part 60.4 for listing on the NRHP are referred to as “historic properties.” The criteria for evaluating the eligibility of a cultural resources site for the listing on the NRHP is summarized as:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, material, workmanship, feeling, and association, and that they are:

- Criterion A – Associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B – Associated with the lives of significant persons in or past.
- Criterion C – Distinctive characteristics of a type, period, or methods of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D – Yielded or may be likely to yield information important in prehistory or history.

A summary of the identified sites and the NRCS NRHP eligibility determinations within the APE, based on recommendations from the Certus report (Certus 2021), is included below.

- **Timpanogos Canal:** Consists of a 13-mile-long irrigation canal constructed in 1895 to carry water from the Provo River to lands along the east side of the Heber Valley. The canal section within the survey area was observed to be piped to accommodate modern residential development and roadway improvements. The Timpanogos Canal was determined eligible for the NRHP for criteria A and C from a 2002 evaluation, however, the piped segment in the APE was recommended for consideration as non-contributing to the eligibility of the overall site.
- **Center Creek Canal:** Consists of an irrigation canal that reportedly extends from the Provo/Duchesne River divide to the Sagebrush/Spring Creek Canal and Lower Canal that was constructed during the late 1880s. The portion of the canal in the APE was realigned sometime between 1967 and 1993. The Center Creek Canal is eligible for the NRHP under Criteria A and C, however, the segment within the in the APE was recommended for consideration as non-contributing to the eligibility of the overall site due to the realignment and lack of notable character that would render it eligible.

- **Old Extension Canal:** Consists of a main canal following the foothills of the Wasatch Mountains and several laterals estimated to have been built around 1868. An approximate 0.7-mile segment of the main canal, an approximately 0.6-mile contiguous segment of a lateral, and a discontiguous crossing of the lateral are located within the APE. The Old Extension Canal was determined eligible for the NRHP under Criteria A and C based on 2002 and 2015 evaluations, and the portion of the main canal in the APE was recommended for retaining the existing determination. The lateral ditch and discontiguous crossing were recommended for consideration as non-contributing to the site's eligibility due to overall lack of integrity from backfilling of many portions of the channels.
- **Daniel Irrigation Company Canal:** Consists of a canal on the south side of Little Sweden Road in Daniel, likely constructed between 1879 and 1887, that delivers water from Daniels Creek to the southern part of Daniel. The site was recommended as eligible for the NRHP under Criterion A, and ineligible under Criteria B, C, and D.
- **Foundations:** Consists of two small foundation remnants. The foundations were recommended ineligible for the NRHP for all criteria due to lack of integrity of design, workmanship, setting, feeling, and association, no direct and meaningful association with a person/s of historical importance, do not possess high artistic value, and lack information important to improving our understanding of history.

Per 36 CFR 800.4, the NRCS consulted with the SHPO and the Ute Indian Tribe of the Uintah and Ouray Reservation (Ute Tribe), Shoshone-Bannock Tribes of the Fort Hall Reservation, Eastern Shoshone Tribe of the Wind River Reservation, Wyoming, and Northwest Band of the Shoshone Nation on the description of the APE and determinations of NRHP site eligibility in letters dated March 24, 2023. The SHPO concurred with determinations of site eligibility in a letter dated March 29, 2023 (Appendix A). Tribal consultation also complied with EO 13007, EO 13175, and the American Indian Religious Freedom Act (AIRFA). The Ute Tribe responded via telephone on December 8, 2023, that they have no concerns with the project. Refer to Section 7.1.3 for details on tribal consultation.

4.6.3 Hazardous Materials

A review of documented hazardous waste facilities was performed using the UDEQ Environmental Interactive Map (UDEQ 2022b). Based on review of documented facilities, there does not appear to be a concern of hazardous spills or contaminated sites within the Project area. However, there are known sections of asbestos cement pipe in the current Daniel irrigation distribution system (refer to Section 2.2.1). Asbestos is a known carcinogen (substance that causes cancer) and is a hazard to the environment and human health. Primary health concerns are associated with inhalation of asbestos fibers and to a lesser extent, ingestion of asbestos fibers. Three of the major health effects associated with asbestos exposure include lung cancer, mesothelioma, and asbestosis (EPA 2022).

If the asbestos pipe materials are in good condition and asbestos containing materials are not friable, then risk to human health are minimal. When asbestos material becomes friable it increases the potential for human exposure. The asbestos cement pipe sections of the current irrigation system are in poor condition. Pipe weathering of friable material and pipe failures are currently an environmental and human health concern.

Asbestos is regulated at the federal level by the EPA under the National Emission Standards for Hazardous Air Pollutants (NESHAP). Asbestos pipe can become a regulated asbestos containing material (RACM) if it becomes friable or has a high probability of becoming crumbled, pulverized, or reduced to powder by forces expected to act on the material during the course of renovation, potentially pipe rehabilitation or replacement (EPA et al. 2015). Utah enforces asbestos rules including the Utah Asbestos Rule, NESHAP, and the Asbestos Hazard Emergency Response Act (AHERA). The AHERA is specific to asbestos-containing materials in schools and is not applicable to this Project.

4.6.4 Public Health and Safety

Public health and safety concerns within the Project area consist of icing hazards on Center Creek Road associated with ice-induced flooding, and potential for human exposure to asbestos from deteriorating sections of asbestos cement pipe in the Daniel Irrigation distribution system. Please refer to Section 4.6.3 regarding asbestos cement pipe and associated health hazards. Public health and safety concerns along Center Creek Road include increased risk of vehicle-related accidents from water freezing on the roadway. These icing hazards occur during winter months only, when water freezes in the creek causing overflow of the Center Creek channel near the intersection at S 2400 E Street (See Section 2.2.2).

4.6.5 Transportation Infrastructure

Both project sites occur within the transportation ROWs for county and local roads. Irrigation distribution system pipelines in the Project area for Site 1 (Daniels Irrigation) run through the following paved road corridors: Little Sweden Road, S Daniels Road, S 600 E Street, S Mill Road, E 300 S Street, 780 E Street, Timpview Drive, and Highway 40. Project area extents at Site 2 (Center Creek) include paved road corridors along sections of E Center Creek Road and S 2400 E Street.

Site 2 (Center Creek Road) currently experiences transportation infrastructure hazards associated with ice on the roadway near intersection of Center Creek Road and S 2400 E street (see Sections 4.6.4 and 2.2.2). Hazard signs are placed on the roadway to warn vehicle traffic of the hazard during these icing events.

4.6.6 Noise

Applicable noise laws for the Project area are provided in the Noise Control Act of 1972 (42 U.S.C. 4901 et seq.), amended by the Quiet Communities Act of 1978 (42 U.S.C. 4913), which promotes the development of state and local noise control programs. Wasatch County Code (Wasatch County 2002) and Daniel Municipal Code (Town of Daniel 2016) also include regulations regarding noise.

Ambient noise in the Project area has not been measured, and therefore no baseline is available. Generally, there is an abundance of noise sources in the Project area produced from vehicle traffic, agricultural operations, the Heber Valley Airport, air traffic, and other general town operational noises.

Noise-sensitive receptors are those facilities, land areas, or wildlife populations that require lower noise levels for health and function. Examples include residential neighborhoods, medical facilities, schools, churches, research facilities, parks, and open space. The Project area is located primarily along road corridors adjoining rural residential development and agricultural areas. There are no noise-sensitive facilities located within a ¼-mile of the Project area, except for residential areas.

4.7 Ecosystem Services

An ecosystem services framework is required by the PR&G and provides for an integrated approach that allows consideration and transparent evaluation of the benefits (both tangible and intangible) and tradeoffs of potential alternatives. Four categories of ecosystem services are described in the PR&G and are included below for reference.

1) **Provisioning services** are tangible goods provided for direct human use and consumption, such as food, fiber, water, timber, or biomass.
2) **Regulating services** maintain a world in which it is possible for people to live, providing critical benefits that buffer against environmental catastrophe – examples include flood and disease control, water filtrations, climate stabilization or crop pollination.
3) **Supporting services** refer to the underlying processes maintaining conditions for life on earth, including nutrient cycling, soil formation, and primary production.
4) **Culture services** make the world a place in which people want to live – recreational use, spiritual, aesthetic viewsheds, or tribal values.

The project scoping process identified resources relevant to the proposed action that were considered for the determination of applicable ecosystem services (see Section 3.0). Ecosystem service benefits can be both monetary and nonmonetary. Appropriate metrics should be based on current methodology to quantify impacted services over time for determination of project- and/or regional-specific effects. For reference, a list of ecosystem service categories and their subcategories is provided in Figure 4-3. The ecosystem service categories/subcategories relevant to this Project and the applicable resources pertinent to each subcategory that were analyzed in this document are provided in Table 4-10.

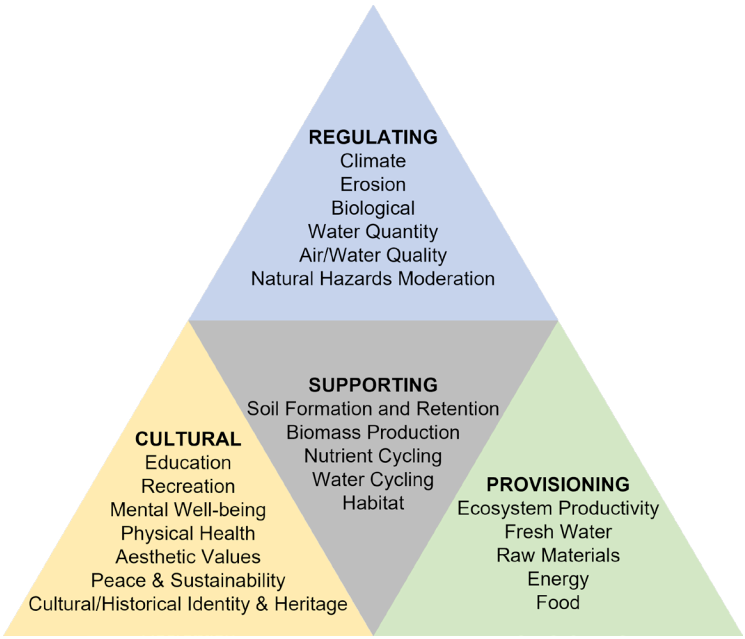

Figure 4-3. Ecosystem Services

Table 4-10. Applicable Ecosystem Services and Related Resources

Category	Service	Applicable Resources
Provisioning	Food/Biomass (crop yield)	Socioeconomics
Cultural	Well-being and Safety	Socioeconomics, Hazardous Materials, Public Health and Safety, Noise.

The applicable ecosystem services from above were evaluated as part of the PR&G eight-step evaluation process. This process includes consideration of the federal objective, PL 83-566 general purposes, guiding principles, and ecosystem services to assist in decision making. Refer to the PR&G Analysis Report included in Appendix E for documentation of the PR&G eight-step evaluation process used for decision making.

5.0 Alternatives

5.1 Project Scoping

Early in the scoping process, comments were requested from the public, tribes, organizations, and government agencies. Comments were accepted during the scoping open comment period (January 29, 2020, through March 2, 2020). The primary purpose of the scoping process was to gather input and feedback on the project's purpose and need, potential alternatives for consideration, environmental issues to be addressed in the Plan-EA, methodologies to be used to evaluate impacts, and the overall public participation process. Three scoping comments were received for Site 1 (Daniel Irrigation) and Site 2 (Center Creek). Refer to Section 3.0 for additional Scoping information and Appendix E for the Scoping Report.

5.2 Formulation Process

The process of formulating alternatives for the project followed procedures outlined in the NRCS NWPM (NRCS 2015) Parts 500 through 506; NRCS NWPH (NRCS 2014), Parts 600 through 606; PR&G (CEQ 2013 and 2014); and other NRCS watershed planning policy. Numerous alternatives were developed by the Project team with consideration for issues and concerns discovered during the scoping process and based on their ability to address the purpose and need of the Project. Alternatives were formulated in consideration of four criteria: completeness, effectiveness, efficiency, and acceptability. In accordance with NEPA, some initial alternatives were eliminated from further analysis due to high cost, logistics, environmental reasons, or other critical factors. The project team analyzed two action alternatives and one No Action Alternative in detailed study.

5.3 Decision Matrix

NRCS must identify the federally assisted alternative that maximizes the economic, environmental, and social benefits, otherwise known as the National Economic Efficiency (NEE) Alternative. NRCS must also decide whether the selected alternative would constitute a major federal action significantly affecting the quality of the environment. If the NRCS State Conservationist (responsible federal official) determines that the selected alternative would not significantly affect the quality of the environment, then the NRCS State Conservationist will prepare and sign a Finding of No Significant Impact (FONSI), and the project may proceed. If the NRCS State Conservationist determines that the selected alternative would significantly affect the quality of the environment, then an Environmental Impact Statement (EIS) and a Record of Decision (ROD) must be prepared and signed before the project can proceed.

5.4 Alternatives and Options Considered but Eliminated from Detailed Study

5.4.1 Site 1 Install a Booster Station and Pipe Improvements

A new booster station would be installed to increase system pressure and meet the minimum required pressures for sprinkler irrigation. The new booster station would be installed near Middle Pond to minimize the size of the pumps required. This alternative would require the replacement of some pipes to ensure all minimum velocity and pressure requirements are met. While this alternative meets the pressure and velocity requirements for sprinkler irrigation, it does not meet the purpose and need to replace the brittle degrading asbestos pipe segments. It is anticipated asbestos pipe segments would have to be replaced over time as they fail. Additionally, the O&M costs for the booster station would be substantially greater than those for the alternatives included in detailed study. Therefore, this alternative was eliminated from detailed study.

5.4.2 Site 1 Improvements with HDPE Pipe

This alternative would be the same as those included in detailed study, except the pipe material would be HDPE. For smaller diameter pipe, PVC is slightly cheaper than HDPE but increases at larger diameters. Because the piping for the project is smaller diameter at less than 20-inches, it was determined that there would not be a cost savings on the installation price from using HDPE. Additionally, Daniel Irrigation District maintains PVC piped systems throughout their other irrigation zones. The district is familiar with this type of pipe material and has equipment and

materials on hand to replace and repair these types of systems, if needed. Therefore, selection of PVC pipe was selected and using HDPE pipe was eliminated from detailed study.

5.4.3 Site 1 Improvements with Steel Pipe

This alternative would be the same as those included in detailed study, except the pipe material would be steel. Based on the price of steel pipe it was estimated that this alternative would increase the construction cost by 10 to 30 percent when compared to the PVC alternatives that are included in detailed study, without providing any additional benefit. Therefore, this alternative was eliminated from detailed study.

5.4.4 Site 2 Raise Road Profile Alternative

Center Creek Road elevation would be raised along approximately 384 linear feet to avoid ice-induced flooding of the roadway. Ice-induced flooding along Center Creek for this segment would be contained on the south side of the road, however, this would result in flooding of the rural residential property to the south. Based on the adverse induced flooding condition to the adjoining residence, this alternative was eliminated from detailed study.

5.4.5 Site 2 Pipe Center Creek

This alternative would consist of piping the ice-induced flooded segment (approximately 384 linear feet) of Center Creek to alleviate flooding of Center Creek Road at the intersection of S 2400 E Street. This alternative would cut off stock watering access. Additionally, it would increase the potential for ice buildup at the pipe entrance. Therefore, this alternative was eliminated from detailed study.

5.4.6 Site 2 Upsize Culvert Under Center Creek Road

This alternative would install a larger culvert under Center Creek Road to pass additional flow. The culvert capacity was determined to not influence the ice-induced flooding condition. This is due to low water flows in the winter that freeze easily and build up rather than a culvert capacity issue. The water in the creek freezes before entering the culvert. Therefore, upsizing the culvert was determined to not solve the ice-induced flooding issue and eliminated from detailed study.

5.5 Alternatives Considered for Detailed Study

Three alternatives (the No Action Alternative and two action alternatives) were included in detailed study. A description of these alternatives is presented in the subsections below. Measures for flood prevention along Center Creek were proposed during development of the Plan-EA but were removed from the alternative actions because those measures are being constructed under alternate funding as a separate project.

5.5.1 No Action Alternative

The No Action Alternative considers the actions that would take place if no federal action or federal funding were provided for the Project. The No Action Alternative would not improve the Daniel Irrigation systems and a reduction in water delivery of 23 percent would continue from the pressure deficiencies and water supply reliability issues. The existing asbestos cement pipe would continue to fail with increasing failures over time resulting in costly repairs. There are no installation costs associated with this alternative. The O&M costs for Daniel Irrigation are

anticipated to rise year by year as the Transite pipe sections continue to deteriorate. The annual O&M costs are estimated at $30,400, with an additional $70,000 average annualized cost for repairing pipe breaks.

5.5.2 Daniels Irrigation Improvements Alternative

This alternative would improve irrigation delivery efficiency for the Daniels Irrigation system. Measures would allow all junctions and pipe segments within the applicable irrigations system sections to meet all minimum pressure and velocity requirements. The alternative improvements would be designed to meet a project life of 50 years. Booster pumps are not required for this alternative because the upsizing of pipes provides adequate pressure. Measures for flood prevention along Center Creek were proposed during development of the Plan-EA but were removed from this alternative because those measures are being constructed under alternate funding as a separate project.

5.5.2.1 *Improvements*

Modifications to the Daniel Irrigation system would include installation of new irrigation pipe, upsizing existing pipe, and replacing segments of asbestos cement pipe with PVC pipe as described in Table 5-1 and depicted in Appendix C – Map C5. Two segments of asbestos pipe totaling approximately 6,900 feet would be abandoned in place and no longer be used as part of the irrigation system. All improvements would be completed within existing road ROWs and/or existing pipeline easements.

Table 5-1. Irrigation System Improvements Summary

Segment	Description	Existing Pipe			Modifications		
		Length (ft)	Material Type	Diameter (inches)	Length (ft)	Material Type	Diameter (inches)
MPZ-1	Install new pipe	N/A	N/A	N/A	964	PVC	6
MPZ-2	Replace existing pipe with new pipe	5,410	PVC	6	5,410	PVC	6 to 16
MPZ-3	Install new pipe	N/A	N/A	N/A	287	PVC	16
MPZ-4	Install new pipe	N/A	N/A	N/A	879	PVC	20
MPZ-5	Install new pipe	N/A	N/A	N/A	2,670	PVC	10
MPZ-6	Replace existing pipe with new pipe	735	PVC	16	735	PVC	20
MPZ-7	Replace AC pipe with PVC pipe	5,690	AC	16	5,690	PVC	20
LPZ-1	Install new pipe	N/A	N/A	N/A	6,620	PVC	16
LPZ-2	Replace AC pipe with PVC pipe	1,660	AC	16	1,660	PVC	16

PVC = polyvinyl chloride, AC = asbestos cement

5.5.2.2 *Construction Staging and Access*

Construction access would primarily use existing established county roadways/highways because most of the pipeline modifications measures are in existing road ROWs. Proposed construction access routes outside of existing road ROWs include access to construction staging areas, along the new pipeline just west of Middle Pond, and along the asbestos pipe section south of Daniels Creek. Five areas are proposed for construction staging and are described below. A map of construction access and staging areas is included in Appendix B – Map B4.

- Staging 1: 0.76 acres located along Little Sweden Road that has been heavily disturbed from grading and placement of gravel.
- Staging 2: 0.76 acres located along Little Sweden Road that that has been heavily disturbed from grading activities.
- Staging 3: 3.0 acres located east of Mill Road that has been heavily disturbed from grading and placement of gravel.
- Staging 4: 3.16 acres adjoining Highway 40 that has been heavily disturbed from grading and placement of fill/debris.
- Staging 5: 1.62 acres adjoining Middle Pond that has been disturbed from construction of the pond and agricultural practices.

5.5.2.3 *Construction Sequencing and Timing*

Construction for Site 1 (Daniel Irrigation) would take place outside of the irrigation season October through April and construction would occur over two seasons starting in 2026 and ending in 2028. Site 2 (Center Creek) construction would take approximately one month to complete and would occur in 2026 outside of the winter season.

5.5.2.4 *Costs*

The total installation cost is estimated at $4,537,000 ($4,363,000 Site 1 and $174,000 Site 2) with O&M estimated at $31,400 per year ($30,400 Site 1 and $1,000 Site 2).

5.5.3 Daniel Irrigation Modified Alignment Alternative (Preferred Alternative)

This alternative would improve irrigation delivery efficiency for the Daniels Irrigation system. Alternative measures upsize irrigation pipe to an adequate pipe diameter resulting in reduced water velocities and increased system pressure. Measures would allow all junctions and pipe segments within the applicable irrigations system sections to meet all minimum pressure and velocity requirements. In addition, the modifications would increase operational flexibility by allowing the system to receive water directly from the CUWCDs pipeline, and to receive water directly from Middle Pond. The alternative improvements would be designed to meet a project life of 50 years. Booster pumps are not required for this alternative because the upsizing of pipes provides adequate pressure.

Measures for flood prevention along Center Creek were proposed during development of the Plan-EA but were removed from this alternative because those measures are being constructed under alternate funding as a separate project.

5.5.3.1 *Improvements*

Modifications to the Daniel Irrigation system would include installation of new irrigation pipe, upsizing existing pipe, and replacing segments of asbestos cement pipe with PVC pipe as described in Table 5-2 and depicted in Appendix B – Map B3. A new connection to the Center Creek Pressure Zone would be installed along with a valve vault to better control water delivery. Two segments of asbestos pipe totaling approximately 12,585 feet would be abandoned in place and no longer be used as part of the irrigation system. All improvements would be completed within existing Road ROWs and/or existing pipeline easements, with exception of approximately 1,130 linear feet of new pipe (segment MPZ-10) proposed to extend from Middle Pond north to an existing Central Utah Water Conservancy District (CUWCD) pipeline. The connection to the CUWCD pipeline would allow more water from the CUWCD to be delivered and stored for use throughout the entire Daniel Irrigation service area. The connection to the CUWCD pipeline will increase the average water supply available for irrigation above those realized for the other action alternative described in Section 5.5.2.

Table 5-2. Pipe Modifications Summary (Preferred Alternative)

Segment	Description	Existing Pipe			Modifications		
		Length (ft)	Material Type	Diameter (inches)	Length (ft)	Material Type	Diameter (inches)
MPZ-1	Install new pipe	N/A	N/A	N/A	964	PVC	6
MPZ-2	Replace existing pipe with new pipe	5,410	PVC	6	5,410	PVC	6 to 16
MPZ-3	Install new pipe	N/A	N/A	N/A	287	PVC	16
MPZ-4	Install new pipe	N/A	N/A	N/A	879	PVC	20
MPZ-5	Install new pipe	N/A	N/A	N/A	2,670	PVC	10
MPZ-6	Replace existing pipe with new pipe	2,400	PVC	16	2,400	PVC	20
MPZ-7	Install new pipe	N/A	N/A	N/A	1,565	PVC	20
MPZ-8	Install new pipe	N/A	N/A	N/A	1,130	PVC	30
LPZ-1	Install new pipe	N/A	N/A	N/A	6,620	PVC	16
LPZ-2	Replace AC pipe with PVC pipe	1,660	AC	16	1,660	PVC	16

PVC = polyvinyl chloride, AC = asbestos cement

5.5.3.2 *Construction Staging, Access, and Timing*

Construction staging, access, and timing would be the same as described in Section 5.5.2 and depicted in Appendix B – Map B4.

5.5.3.3 *Costs*

The total installation cost is estimated at $4,543,000 with O&M estimated at $30,400.

5.6 National Economic Efficiency Alternative

Alternatives were compared to select one alternative that “best” maximized public benefits (environmental, economic, and social goals) with appropriate consideration of costs, guiding

principles, the federal objective, PL 83-566 general purposes, and ecosystem services. This alternative is known as the NRCS National Economic Efficiency (NEE) Alternative. The NEE Alternative for the Project was determined to be the Daniel Irrigation Modified Alignment Alternative based on the alternative analysis performed. A PR&G Analysis was completed in support of decision making for the NEE Alternative and is included in Appendix E. The NEE Alternative was also determined to be the locally preferred, environmentally preferred, and socially preferred alternative (see the PR&G Analysis in Appendix E).

5.7 Summary and Comparison of Alternative Plans

The alternatives proposed for consideration and analyzed in detail in this Plan-EA have been compared against each other to discern the merits and disadvantages of each alternative. This comparison of environmental, social, and economic effects is summarized in Table 5-3. The detailed analysis of environmental consequences for each alternative is provided in Section 6.0.

Table 5-3. Summary and Comparison of Resource Concerns of Alternative Plans

Resource Concern	No Action Alternative	Daniels Irrigation Improvements Alternative	Daniels Irrigation Modified Alignment Alternative
Soils			
Upland Erosion	No erosion issues have been identified and no impacts would occur.	Ground disturbance from construction activities would increase erosion potential on 2.32 acres of land outside of existing developed or paved areas. These short-term direct impacts would be negligible based on implementation Best Management Practices (BMPs) and restoration/stabilization of disturbed areas after construction completion. No long-term impacts are expected.	Ground disturbance from construction activities would increase erosion potential on 3.25 acres of land outside of existing developed or paved areas. These short-term direct impacts would be negligible based on implementation BMPs and restoration/stabilization of disturbed areas after construction completion. No long-term impacts are expected.
Prime and Unique Farmland	There would be no change from existing conditions and no soil disturbance would occur.	Direct short-term impacts to approximately 0.76 acres of soil classified as “prime farmland if irrigated” and 1.44 acres of soils classified as “farmland of statewide importance” would occur during construction. Short-term impacts would be negligible based on construction timing outside of the irrigation season, minimal area disturbed, and restoration of disturbed farmlands after construction.	Direct short-term impacts to approximately 0.76 acres of soil classified as “prime farmland if irrigated” and 2.43 acres of soils classified as “farmland of statewide importance” would occur during construction. Short-term impacts would be negligible based on construction timing outside of the irrigation season, minimal area disturbed, and restoration of disturbed farmlands after construction.

Resource Concern	No Action Alternative	Daniels Irrigation Improvements Alternative	Daniels Irrigation Modified Alignment Alternative
Water			
Surface Water Quality	There would be no change to surface water quality conditions.	These alternatives would have the same short-term potential to increase sediment load in surface water of Daniels Creek during construction. Short-term direct impacts to water quality would be negligible with the implementation of BMPs that reduce sediment entering waters and activities would not violate federal or state water quality rules and regulations. No long-term impacts are expected.	
Waters of the U.S. and Wetlands	This alternative would have no impact to jurisdictional waters of the U.S. or wetlands.	Temporary disturbance in 20 linear feet of Daniels Creek and 0.18 acres of emergent wetland would occur for both alternatives. Direct short-term impacts to wetlands would be negligible based on the disturbance alignment along an existing pipe fill corridor through the wetlands, timing of construction outside of the growing season, restoration after construction, and implementation of avoidance/minimization measures. Short-term direct Impacts to Daniels Creek would also be negligible based on avoided disturbance to the channel bed and restoration of the channel banks after construction. No long-term impacts or loss of waters of the U.S. or wetlands are expected.	
Water Quantity and Flow	Reduced water delivery quantities of 23% to irrigated cropland in the Daniel Irrigation system would remain. This direct adverse impact on water delivery would continue over the long term.	Daniel Irrigation system would experience direct long-term benefits for water delivery efficiency with an 18% increase in delivery of water to irrigated croplands. Measurable changes to flow conditions in natural channels are not expected.	The alternative has the same benefits as described for the other action alternative with an added benefit of 23% increase in delivery of water to irrigated croplands.
Floodplain Management	No impact.	Measures would have no change to FEMA SFHAs and no change to floodplain management would occur.	
Air Quality			
Air Quality	There would be no change to air quality conditions.	There would be no adverse effects to air quality or GHGs from either alternative based on no requirements for air quality permits, negligible GHG emissions below the EPA reportable limits, the location of the Project outside of nonattainment or maintenance areas, implementation of BMPs, and the short duration of construction	

Resource Concern	No Action Alternative	Daniels Irrigation Improvements Alternative	Daniels Irrigation Modified Alignment Alternative
Plants			
N&I Weeds	No activities are planned and the potential for establishment of weeds would remain the same. N&I weeds	Short-term direct impacts would occur from disturbance on 2.32 acres of undeveloped land that would put the area at risk for invasion of N&I weeds. Short-term impacts would be negligible based on the existing dominant presence of N&I weeds/problematic non-native weeds, implementation of BMPs, reseeding with a weed-free mix, and development of a Post Construction Rehabilitation Plan (PCRP). No long-term impacts are expected.	Short-term direct impacts would be similar to the other action alternative except 3.25 acres of undeveloped land would be disturbed. Short-term impacts would be negligible based on the existing dominant presence of N&I weeds/problematic non-native weeds, implementation of BMPs, reseeding with a weed-free mix, and development of a PCRP. No long-term impacts are expected.
Riparian Areas	There would be no changes to riparian areas.	Both alternatives would have the same direct-short term impacts from temporary disturbance to approximately 0.03 acres of riparian area along Daniels Creek. Removal of trees is not anticipated to complete alternative measures and disturbed areas would be restored after construction completion. Short-term impacts would be negligible based on, timing of construction outside of the growing season, minor amount of area disturbed, and restoration after construction. No long-term impacts to riparian areas are expected.	
Animals			
Wildlife and Wildlife Habitat	There would be no change to habitat and wildlife would not be impacted.	Approximately 2.31 acres of habitat would be temporarily disturbed with 0.03 acres of that in Daniels Creek. No excavation/fill is proposed in water, but construction equipment may pass through the channel when little to no flow is present with negligible impacts to aquatic habitat. Short-term impacts from construction disturbance would be minor to negligible based on low habitat quality in and adjoining heavily developed/disturbed areas, minimal area disturbed, construction timing, and restoration of disturbed areas. Disturbed areas would be restored upon construction completion and no long-term impacts are expected.	The impacts would be the same as those described for the other action alternative with an additional 0.93 acres of temporary disturbance within crop/pasture agricultural lands. The additional disturbance within the agricultural lands is not expected to impact wildlife species or wildlife habitat above or beyond the impacts described for the other action alternative.

Resource Concern	No Action Alternative	Daniels Irrigation Improvements Alternative	Daniels Irrigation Modified Alignment Alternative
Special Status Animal Species	There would be no change to habitat and no impacts to special status species would occur.	A BA was prepared and concluded the Project would have No Effect to ESA-listed species. The BA was submitted to the USFWS to comply with Section 7 Consultation (Appendix A). State SGCN (bald eagle, northern leopard frog, Columbia spotted frog, southern leatherside chub, and Bonneville cutthroat trout) have the potential to occur in the Project area. Based on construction timing, preconstruction surveys and avoidance/minimization measures, short-term direct impacts to the species would be negligible. No long-term impacts to state SGCN are expected.	
Migratory Birds/Bald Eagles	There would be no change to habitat and no impacts to migratory birds or bald eagles.	Migratory birds and bald eagles could be present in the Project area. Preconstruction surveys would be performed, and spatial buffers would be established as necessary in coordination with USFWS and NRCS. Based on the short duration of construction, timing of construction in areas with habitat, implementation of avoidance/minimization measures, minimal suitable low-quality habitat disturbed, and abundant better suited higher quality habitat outside of the Project area, direct short-term construction impacts to migratory birds, eagles, and bird habitat are expected to be minor to negligible. No long-term impacts to birds or habitat are expected.	
Human			
Socioeconomics*	Long-term direct adverse impacts on the agricultural output of the land and decreased crop yield would continue with an estimated loss in yield of 0.8 tons per acre equivalent to a loss in net return of $119,000 annually. Costly asbestos cement pipe repairs would continue at an annual cost of $70,000.	Long-term direct benefits are expected that would increase crop yield 0.6 tons per acre, equivalent to an annual gain in net return of $92,000. O&M for avoided asbestos cement pipe repairs would decrease costs by $70,000 annually.	This alternative has similar benefits to the other action alternative with an added crop yield benefit from interconnection with CUWCDs pipeline. There would no longer be a water deficit and crop yield would increase by 0.8 tons per acre, equating to a net annual gain in hay return of $119,000.
Historic Properties / Cultural Resources / Native American Religious Concerns	There would be no change to existing historical features identified within the APE.	The alternative was determined by NRCS to have No Adverse Effect to historic properties, and the determination was submitted on March 24, 2023 to the SHPO and Tribes/THPOs to comply with Section 106 of the NHPA. The SHPO concurred with the determination in a letter dated March 29, 2023 (Appendix A). No Native American religious concerns were identified by Tribes during consultation, pursuant to EO 13007, EO 13175, the NHPA, and the AIRFA. Refer to Section 7.1.3 for a list of tribes consulted, dates of consultation, and responses received from tribes.	

Resource Concern	No Action Alternative	Daniels Irrigation Improvements Alternative	Daniels Irrigation Modified Alignment Alternative
Hazardous Materials	Continued degradation of asbestos pipe in the irrigation system would have an indirect adverse impact of increased human exposure to asbestos over the long term from handling of the material for repairs or from asbestos materials being transported through the water system.	Based on compliance with all applicable state and federal regulations for abandonment, removal, and disposal of asbestos cement pipe, short-term direct adverse impacts for both alternatives from these hazardous materials are not expected. Long-term indirect beneficial impacts would occur for both alternatives that would reduce potential exposure to asbestos-containing material from abandonment and replacement of the asbestos cement pipe sections.	
Public Health and Safety	The indirect adverse effects to health and safety associated with potential asbestos exposure would remain over the long term.	Alternative measures for both alternatives would have indirect long-term benefits to public health and safety from reduced potential for exposure to asbestos-containing materials.	
Transportation Infrastructure	No Impact.	Minor direct short-term impacts are expected for both alternatives that could slow down or delay travel times through the vehicle travel corridors. After construction completion the roadways would be reopened to normal vehicle traffic and no long-term adverse impacts are expected.	
Noise	No noise would be produced above and beyond what is currently produced and there would be no noise impacts.	Minor direct short-term impacts are expected during construction, but BMPs would be in place and there would be no violations of applicable noise programs/regulations. There would be no long-term noise impacts.	

Table 5-4. Summary and Comparison of Alternatives – Ecosystem Services

Ecosystem Service	No Action Alternative	Daniels Irrigation Improvements Alternative	Daniels Irrigation Modified Alignment Alternative
Provisioning Services			
Food/Biomass (crop yield)	The community would continue to have irrigation delivery deficiencies resulting in decreased crop production.	Improves irrigation delivery efficiency and increases crop production providing an annual benefit of $92,000.	Improves irrigation delivery efficiency and increases crop production providing an annual benefit of $119,000.
Cultural Services			
Well-being and Safety	Physical well-being and safety would continue to be at risk from the potential for exposure to asbestos as well as the risk of harm from ice-induced flooding hazards. Continued decreased crop yield would increase financial stressors degrading the mental well-being of the agricultural community.	Asbestos pipe would no longer be used and ice-induced flooding hazards reduced, which would improve safety and physical well-being. Decreased financial stressors related to an increase in crop yield would improve the mental well-being of the agricultural community.	The benefits would be the same as the other action alternative, with greater benefits to crop yield further improving the mental well-being of the agricultural community.
Economic Analysis – Cost and Benefit Summary[1]			
Installation Federal (PL83-566)	$0	$3,460,500	$3,390,500
Sponsor Installation	$0	$1,076,500	$1,152,500
Total Installation	$0	$4,537,000	$4,543,000
Annual Installation	$0	$158,000	$158,000
Annual OM&R Cost above No Action[2]	$0	($70,000)	($70,000)
Total Annual Costs[2]	$0	$158,000	$158,000
Total Annual Benefits	**$0**	**$162,000**	**$189,000**
Benefit-Cost Ratio	**-**	**1.1**	**1.2**
Net Annual Benefits	**0**	**$4,000**	**$31,000**

1 - Annual costs were calculated using FY 2023 Water Resources Discount Rate (2.5%) and annualized over 50 years with a 52-year period of analysis (Refer to Section 3.5.1 of the PR&G Analysis Report included in Appendix E).
2 - The OM&R would decrease from implementation of the action alternative measures and is therefore counted as a benefit.

6.0 Environmental Consequences

NRCS has the responsibility under NEPA to identify and address effects on the environment that may result from the proposed alternatives. These alternatives include the No Action Alternative and two action alternatives (See Section 5.5). The action alternatives are included in the subsections below as “Daniels Irrigation Improvements Alternative” and “Daniels Irrigation Modified Alignment Alternative”, which is the preferred alternative. This section describes the potential effects of the alternatives within each resource category as defined in Section 4.0.

The following lists the specific terminology used to describe impacts associated with alternative measures:

Type

- Direct Effect: Impacts caused by a proposed action and occurring at the same time and place.
- Indirect Effect: Impacts caused by an action that are later in time or farther removed in distance but are still reasonably foreseeable.
- Cumulative Effect: The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person is undertaking such other action.

Duration

- Temporary and Permanent Impacts: Temporary impacts are impacts that are not lasting and the affected resource will return or be restored to its previous (pre-project) state. Permanent impacts are those in which the affected resource will not return to its previous state within one’s lifetime.
- Short- and Long-Term Impacts: Short-term impacts are those that last through the duration of construction and shortly after (up to one year after construction). Long-term impacts are those that last for an extended duration of time. For this evaluation, long-term impacts extend beyond one year after construction up to the evaluated life of the project (50 years).

Intensity

- No Impact – Resource conditions would not change.
- Negligible – Resource condition changes would be so slight there would no measurable or perceptible consequence to the resource.
- Minor – A small measurable effect to the resource, but localized, small, and of little consequence to the resource. Mitigation measures, if needed to offset adverse effects, would be easily implemented and successful based on knowledge and experience.
- Moderate – A measurable effect on the resource from the alternative actions. Mitigation measures would likely be needed to offset adverse effects and could be extensive, moderately complicated to implement, and probably successful based on knowledge and experience.
- Substantial – A large, measurable effect to the resource from the alternative actions. Mitigation measures would be needed to offset adverse effects and could be extensive and complicated to implement.

6.1 Soil Resources

6.1.1 Upland Erosion

Please refer to Section 4.1.1 for existing upland erosion conditions for the Project area.

6.1.1.1 *No Action Alternative*

No erosion issues have been identified. For this alternative, upland erosion conditions would not change from existing conditions and erosion would continue at the same rate it has historically. Continued O&M activities are not expected to have a measurable impact on upland erosion.

6.1.1.2 *Daniels Irrigation Improvements Alternative*

With this alternative, no long-term upland erosion impacts are expected. However, areas disturbed during construction would have an increased potential for erosion. Of the 32.08 acres proposed for disturbance, only 2.32 acres are outside of stabilized developed or paved areas. These direct impacts would be short-term and proper BMPs would be installed during and after construction to offset impacts that would help prevent and control soil erosion. The 2.32 acres of undeveloped disturbed lands would be restored and stabilized through establishment of ground cover after construction completion. The disturbed developed areas would be stabilized or repaved as needed after construction completion. Short-term direct impacts would be negligible based on implementation of BMPs, short duration of construction, minor amount of disturbance, and restoration after construction completion. Continued O&M activities are not expected to have a measurable impacts on the resource.

6.1.1.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

No long-term upland erosion impacts are expected. However, areas disturbed during construction would have an increased potential for erosion. Of the 33.43 acres proposed for disturbance, only 3.25 acres are outside of stabilized developed or paved areas. These direct impacts would be short-term and proper BMPs would be installed during and after construction to offset impacts that would help prevent and control soil erosion. The 3.25 acres of undeveloped disturbed lands would be restored and stabilized through establishment of ground cover after construction completion. The disturbed developed areas would be stabilized or repaved as needed after construction completion. Short-term direct impacts would be negligible based on implementation of BMPs, short duration of construction, minor amount of disturbance, and restoration after construction completion. Continued O&M activities are not expected to have a measurable impact on the resource.

6.1.2 Prime and Unique Farmland

Please refer to Section 4.1.2 for a description of existing prime and unique farmland within the Project area.

6.1.2.1 *No Action Alternative*

There would be no change from existing conditions and no disturbance would occur on lands designated as “prime farmland if irrigated’ or “farmland of statewide importance”. No measurable impacts to prime and unique farmland are expected from continued O&M activities.

6.1.2.2 *Daniels Irrigation Improvements Alternative*

This alternative would temporarily disturb approximately 0.76 acres of soils classified as “prime farmland if irrigated” and 1.44 acres of soils classified as “farmland of statewide importance” (Appendix C – Map C1). This consists of direct short-term direct impacts from vehicles/equipment driving over the soil and trenching activities for pipeline modifications/installation. Temporarily disturbed areas would be restored to preconstruction conditions or better after construction completion and no long-term direct impacts to soils are expected. Short-term impacts would be negligible based on construction timing outside of the irrigation season, minimal area disturbed, and restoration of disturbed farmlands after construction. Continued O&M activities are not expected to have measurable impacts to the resource.

6.1.2.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

This alternative would temporarily disturb approximately 0.76 acres of soils classified as “prime farmland if irrigated” and 2.43 acres of soils classified as “farmland of statewide importance” (Appendix C – Map C1). This consists of direct short-term impacts from vehicles/equipment driving over the soil and trenching activities for pipeline modifications/installation. Temporarily disturbed areas would be restored to preconstruction conditions or better after construction completion and no long-term direct impacts to soils are expected. Short-term impacts would be negligible based on construction timing outside of the irrigation season, minimal area disturbed, and restoration of disturbed farmlands after construction. Continued O&M activities are not expected to have measurable impacts.

6.2 Water Resources

6.2.1 Surface Water Quality

Please refer to Section 4.2.1 for existing surface water quality conditions for the Project area.

6.2.1.1 *No Action Alternative*

There would be no measurable change to surface water quality conditions for this alternative, including continued O&M activities.

6.2.1.2 *Daniels Irrigation Improvements Alternative*

This alternative would have a short-term potential to increase sediment load in surface water of Daniels Creek during construction. Because work would be performed outside of the irrigation season, impacts to irrigation water quality are not expected. Impacts to surface water would be minimized through implementation of project design elements, the BMPs listed in Section 6.1.1, and the BMPs listed below. These minimization measures would reduce the quantity of sediment (1) entering drainages, and (2) flowing downstream and violating any federal or state water quality rules and regulations. Short-term direct impacts to water quality would be negligible with the implementation of BMPs. Long-term impacts are not expected with the implementation of BMPs and restoration of disturbed areas after construction completion. Alternative measures would meet Utah antidegradation requirements. Continued O&M activities are not expected to have measurable impacts on the resource.

Construction BMPs would include, but are not limited to, the following:

- A Storm Water Pollution Prevention Plan would be required and implemented that contains erosion and sediment control and pollution prevention BMPs, such as, but not limited to, silt fences, fiber wattles, and/or earthen berms.
- Water bodies adjacent to construction and staging areas would be identified, and such measures as straw bales, silt fences, and other appropriate sediment control BMPs would be implemented to prevent the entry of sediment and other contaminants into waters.
- To ensure that accidental spills do not enter waters, the storage of petroleum-based fuels and the refueling of construction machinery would not occur outside of approved designated staging/batch plant areas. Furthermore, the alternative would comply with state and federal water quality standards and toxic effluent standards to minimize any potential adverse impacts from discharges to waters of the U.S.
- No construction materials would be stockpiled or deposited in or near any water bodies.

6.2.1.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

This alternative would have a short-term potential to increase sediment load in the surface water of Daniels Creek during construction. Because work would be performed outside of the irrigation season, impacts to irrigation water quality are not expected. The same BMPs would be implemented as described for the other action alternative. Short-term direct impacts to water quality would be negligible with the implementation of BMPs. Long-term impacts are not expected with the implementation of BMPs and restoration of disturbed areas after construction completion. Alternative measures would meet Utah antidegradation requirements. Continued O&M activities are not expected to have measurable impacts on the resource.

6.2.2 Waters of the U.S. and Wetlands

Waters of the U.S. and wetlands were identified and delineated within the Project area (Appendix E). Refer to Section 4.2.2 for a list of potential jurisdictional waters of the U.S. and wetlands within the Project area.

6.2.2.1 *No Action Alternative*

This alternative and O&M activities would have no impact to jurisdictional waters of the U.S. or wetlands.

6.2.2.2 *Daniels Irrigation Improvements Alternative*

This alternative would include temporary disturbance in 20 linear feet of Daniels Creek and 0.18 acres of emergent wetland that would be a short-term impact (Appendix C – Map C2). Wetlands would be temporarily disturbed along the existing trenched pipeline corridor from replacement of the pipeline and from construction vehicle/equipment traffic to replace the pipeline. The existing hanging pipe crossing Daniels Creek would also be removed and replaced along the same alignment, temporarily impacting the banks of the channel, but the channel bed would not be disturbed. The channel banks would be restored to preconstruction conditions after the alternative measures are installed. The avoidance and minimization measures listed below would be in place

for work within wetlands and disturbed areas would be restored to preconstruction conditions.

- Heavy equipment working in wetlands would be placed on mats, or other measures taken to minimize soil disturbance.
- Temporary fills would be removed in their entirety and the affected areas returned to preconstruction elevations.
- If excavation in wetland areas is necessary, excavated wetland soils would be saved, stockpiled, and replaced after construction completion.
- Disturbed wetland areas would be restored with wetland vegetation appropriate to the surrounding wetland community as approved by NRCS after construction completion.

Short-term direct impacts to wetlands would be negligible based on replacement of the pipe along the existing fill corridor through the wetlands, timing of construction outside of the growing season, restoration after construction, and implementation of avoidance/minimization measures. Short-term direct Impacts to Daniels Creek would also be negligible based on avoided disturbance to the channel bed and restoration of the channel banks after construction. Based on implementation of avoidance and minimization measures and restoration activities, no long-term impacts or loss of waters of the U.S. or wetland are expected. Continued O&M activities are not expected to have measurable impacts to the resource.

6.2.2.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

The disturbance in water and wetlands would be the same as described for the Daniels Irrigation Improvements Alternative with the same impacts.

6.2.3 Water Quantity and Water Flow

Refer to Section 4.2.3 for irrigation water quantity and creek flow issues identified.

6.2.3.1 *No Action Alternative*

Deficiencies in the Daniel irrigation system would continue to result in reduced water delivery quantities to irrigated cropland by an estimated 23 percent. This direct adverse impact on water delivery would continue over the long term. Center Creek ice-induced flooding issues would be resolved after construction of the new roadside drainage ditch is completed in October 15, 2025. Refer to Section 6.7 for cumulative effects for the separate roadside ditch project.

6.2.3.2 *Daniels Irrigation Improvements Alternative*

This alternative directly benefits water delivery quantities from increasing water delivery by 18 percent to irrigated cropland over the long term. Daniel Irrigation’s water supply comes from a larger wholesale water provider (UCWCD) that has set diversion and storage for irrigation water. Therefore, no additional diversions from natural surface water sources or changes in stream flows are expected.

6.2.3.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

The direct benefits for water delivery for this alternative would be greater than the other action alternative, with an increase in irrigation delivery by 23 percent over the long term. No additional diversion from the natural surface water sources or changes in stream flow are expected, the same as described for the other action alternative.

6.2.4 Floodplain Management

Portions of the Project area are within SFHAs or flooding hazards have been identified. Refer to Section 4.2.4 for additional information.

6.2.4.1 *No Action Alternative*

This alternative and O&M activities would have no impact to FEMA SFHAs. Center Creek ice-induced flooding issues would be resolved after construction of the new roadside drainage ditch is completed in October 15, 2025. Refer to Section 6.7 for cumulative effects for the separate roadside ditch project.

6.2.4.2 *Daniels Irrigation Improvements Alternative*

There would be no change to floodplain management for this alternative.

6.2.4.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

There would be no change to floodplain management for this alternative.

6.3 Air Resources

Please refer to Section 4.3 for existing air quality conditions for the Project area.

6.3.1 No Action Alternative

There would be no measurable change to air quality conditions for this alternative, including continued O&M activities.

6.3.2 Daniels Irrigation Improvements Alternative

Construction activities would temporarily emit several air pollutants. PM10 emissions are associated with the dust created from demolition, land clearing, ground excavation, cut-and-fill operations, and road construction. All other pollutants (PM2.5, CO, sulfur oxides [SOx], nitrous oxides [NOx], mobile source air toxics [MSATs], and greenhouse gases [GHGs]) are generated from heavy-duty diesel engines used by the construction equipment. Construction emissions are greatest during the earthwork phases because of the dust associated with this activity. Fugitive dust can also be produced by winds blowing through the construction site and by trucks carrying uncovered loads. Additionally, mud tracked onto paved roads leading to and from the construction site creates a source of fugitive dust (i.e., road dust) after it dries.

Fugitive dust, MSAT, and GHG emissions increases associated with construction would be minimized by implementing applicable BMPs. These include the following:

- Spraying the soil on-site with water or other similar approved dust suppressant/soil binder.
- Wetting materials hauled in trucks, providing adequate freeboard (space from the top of the material to the top of the truck), or covering loads to reduce emissions during material transportation/handling.
- Providing a stabilized construction entrance (track-out pad), wheel washers, and/or other similar BMPs at construction site access areas to reduce track-out of site materials onto the adjacent roadway network.
- Removing tracked-out materials deposited onto adjacent roadways.
- Wetting material stockpiles to prevent wind-blown emissions.
- Establishing vegetative cover on bare ground as soon as possible after grading to reduce wind-blown dust.
- Requiring appropriate emission-control devices on all construction equipment.
- Requiring the use of cleaner burning fuels.
- Using only properly operating, well-maintained construction equipment.

Alternative measures would have direct increases in emissions and GHGs from trucks and construction equipment powered by heavy-duty diesel engines. These increases would be short-term and concentrated around the construction site. Construction activities are not expected to violate air quality standards, based on the implementation of BMPs and the short duration of construction. Emissions are anticipated to be well below the EPA reportable limits and the Project area is not located within a nonattainment or maintenance area. Therefore, short-term emission of air pollutants and GHGs would be negligible. There would be no long-term impacts to air quality. Continued O&M activities are not expected to have measurable impacts to the resource.

6.3.3 Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)

Impacts for this alternative would be the same as those listed for the Daniels Irrigation Improvements Alternative.

6.4 Plant Resources

6.4.1 Noxious Weeds and Invasive Plants

N&I weeds were identified within the Project area and non-native problematic vegetation was identified as a dominant plant species in areas. Please refer to Section 4.4.1 for existing information on noxious and invasive weeds.

6.4.1.1 *No Action Alternative*

Selection of the No Action Alternative would have no change on noxious weeds and invasive plants in the Project area. N&I weeds and non-native plants are dominant across the majority of vegetated areas.

6.4.1.2 *Daniels Irrigation Improvements Alternative*

This alternative would have direct impacts that would put the Project area at risk for future invasion of N&I weeds. Approximately 2.32 acres of undeveloped lands would be disturbed; however, these areas are already heavily disturbed and contain dominant non-native plants and other N&I species. Spread of N&I weeds would be offset by implementation of BMPs during construction to comply with Executive Order 13112. During construction and until restoration areas are fully established, N&I weeds would be maintained on a regular basis to prevent the establishment of these species. Non-desirable plant species would be controlled by cleaning equipment prior to delivery to the Project site and eradicating these species before the start and during construction as discovered. In addition, a Post Construction Rehabilitation Plan (PCRP) would be developed and would include mechanisms for addressing weed establishment and treatment. Undeveloped disturbed areas would be restored to preconstruction conditions or better after construction completion by seeding with a NRCS approved weed-free seed mix. Direct short-term impacts would be negligible based on the existing dominant presence of N&I weeds, implementation of BMPs, and reseeding disturbed areas with a weed-free mix. No long-term impacts are expected with implementation of BMPs and development of the PCRP. Continued O&M activities are not expected to have measurable impacts to the resource.

6.4.1.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Impacts for this alternative would be similar to those listed for the Daniels Irrigation Improvements Alternative. Approximately 3.25 acres of undeveloped lands would be disturbed; however, these areas are already heavily disturbed and contain dominant non-native plants and other N&I species. The same BMPs and restoration measures would be in place as described for the other action alternative. Direct short-term impacts would be negligible based on the existing dominant presence of N&I weeds, implementation of BMPs, and reseeding disturbed areas with a weed-free mix. No long-term impacts are expected with implementation of BMPs and development of the PCRP. Continued O&M activities are not expected to have measurable impacts to the resource.

6.4.2 Riparian Areas

Please refer to Section 4.4.2 for existing information on noxious and invasive weeds.

6.4.2.1 *No Action Alternative*

There would be no measurable impact to riparian areas for this alternative, including continued O&M activities.

6.4.2.2 *Daniels Irrigation Improvements Alternative*

This alternative may have temporary disturbance to approximately 0.03 acres of riparian area along Daniels Creek (Appendix C – Map C3A). Temporary disturbance would include direct short-term impacts from construction vehicle/equipment and foot traffic along the riparian corridor for replacement of an existing pipeline along the same alignment. Removal of trees is not anticipated to complete alternative measures and disturbed areas would be restored after construction completion. Short-term impacts would be negligible based on, timing of construction outside of the growing season, minor amount of area disturbed, and restoration after construction. No long-

term impacts to riparian areas are expected. Continued O&M activities are not expected to have measurable impacts to the resource.

6.4.2.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

This alternative has the same temporary disturbance of 0.03 acres with the same impacts as described for the Daniels Irrigation Improvements Alternative.

6.5 Animal Resources

6.5.1 Wildlife and Wildlife Habitat

Most of the Project area is developed lacking wildlife habitat or is located along road ROWs and adjoining developed/disturbed areas where habitat quality is low. Please refer to Section 4.5.1 for information regarding the presence of wildlife and wildlife habitat within the Project area.

6.5.1.1 *No Action Alternative*

There would be no measurable impact to habitat and wildlife for this alternative, including continued O&M activities.

6.5.1.2 *Daniels Irrigation Improvements Alternative*

Alternative measures would temporarily disturb approximately 32.08 acres of land, but approximately 29.77 acres of this disturbance is on developed lands lacking wildlife habitat. Refer to Appendix C – Maps C3A and C3B for habitat types and the proposed area of disturbance. A total of approximately 2.31 acres of habitat would be temporarily disturbed. Most of the disturbed habitat is a mix of primarily low-quality habitat within heavily disturbed cultivated land/pasture (0.79 acres), or grassland and shrub areas (1.28 acres) adjoining developed and heavily disturbed areas. The remaining 0.24 acres of temporary disturbance is within emergent wetland (0.18 acres), riparian areas (0.03 acres), and open water of Daniels Creek (0.03 acres) adjoining developed and heavily disturbed areas. These areas are also located within DWR identified substantial habitat for Hungarian partridge and Utah ruffed grouse, and crucial habitat for California qual. Work in water and riparian areas includes replacing the segment of existing hanging pipe that crosses Daniels Creek adjacent to the road culvert crossing. To avoid impacting aquatic species, work in the channel would be performed when water flow is at its lowest or is not flowing. Excavation activities in the water are not anticipated, but construction equipment may need to drive through the channel to replace the hanging pipe segment across the channel. Work would also be performed in the Lower Pond, but no water is expected to be present in the work area due to the timing outside of the irrigation season when irrigation water is not stored in the pond.

Wildlife species, if present, may be temporarily disturbed and displaced to adjacent habitats. Once construction is completed, they could return to the area. Short-term impacts to terrestrial wildlife from construction disturbance would be minor to negligible based on low habitat quality, minimal area disturbed, temporary nature of disturbance, and construction timing outside of bird breeding season (October through April) for areas containing habitat (including substantial and crucial habitat for bird species). Disturbed areas would be restored upon construction completion and no long-term impacts are expected to terrestrial wildlife habitat or wildlife species. Construction

equipment passing through Daniels Creek is not expected to have a measurable impact on aquatic species based on timing when little to no flow is present in the channel. Continued O&M activities are not expected to have measurable impacts to the resource.

6.5.1.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Impacts for this alternative would be the same as those described for the Daniels Irrigation Improvements Alternative, with an additional 0.93 acres of temporary disturbance in crop/pasture agricultural land. The additional short-term disturbance on these agricultural lands is not expected to impact wildlife species or habitat above and beyond the impacts described from the alternative above.

6.5.2 Special Status Animal Species

Based on BAs completed for the Project (BC&A 2022c and BC&A 2024), ESA-listed species would not likely be present because suitable habitat is not located within the Project area (refer to Appendix E for the BAs). A BA was prepared and submitted to USFWS with a No Effect determination on May 11, 2022 and December 9, 2024, to comply with Section 7 of the ESA (Appendix A).

Utah SGCN (bald eagle, northern leopard frog, Columbia spotted frog, southern leatherside chub, and Bonneville cutthroat trout) have potential to occur in the Project area. Please refer to Section 4.5.2 for more information regarding the presence of these species in the Project area.

6.5.2.1 *No Action Alternative*

There would be no measurable impact to habitat or to special status species for this alternative, including continued O&M activities.

6.5.2.2 *Daniels Irrigation Improvements Alternative*

No long-term impacts to state SGCN are expected. Bald eagles have the potential to be present for foraging only in the Project area. If bald eagles are present, they may be deterred from foraging in or near the active construction areas. This short-term impact is expected to be negligible due to construction timing, temporary nature of disturbance, and abundant greater suitability foraging habitat in areas outside of the Project area.

Northern leopard frogs and Columbia spotted frog have the potential to be present within the Project area near Lower Pond. Work in Lower Pond would be performed outside of the irrigation season coinciding with the frog hibernation period and the work area would be dry since irrigation water would not be stored during the non-irrigation season. Since both frog species hibernate under water, the species are not expected to be present in the dry work area during construction at the Lower Pond. However, preconstruction surveys would be performed for northern leopard and Columbia spotted frog by a qualified biologist prior to the commencement of work activities. If the species were found during surveys, avoidance/ minimization measures would be implemented in coordination with DWR.

Southern leatherside chub and Bonneville cutthroat trout have the potential to be present in Daniels Creek and Center Creek. No work is proposed in Center Creek and work in Daniels Creek

would be performed when water flow is at its lowest or is not flowing. If low flows are present during construction, appropriate fish salvage and/or screening measures would be implemented during in-water work construction periods.

Short-term impacts to SGCN would be negligible based on timing of construction during frog hibernation, lack of disturbance within permanent surface water, implementation of preconstruction surveys, and avoidance/minimization measures.

Continued O&M activities are not expected to have measurable impacts to special status species.

6.5.2.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Impacts for this alternative would be the same as those listed for the Daniels Irrigation Improvements Alternative.

6.5.3 Migratory Birds / Bald Eagles

Migratory birds and bald eagles have the potential to occur in the Project area. Please refer to Section 4.5.3 for a description of migratory birds and bald eagles and potential occurrence within the Project area.

6.5.3.1 *No Action Alternative*

There would be no change to habitat and no measurable impacts to migratory birds or bald eagles would occur for this alternative or for continued O&M activities.

6.5.3.2 *Daniels Irrigation Improvements Alternative*

For this alternative construction activities within habitat would be performed primarily outside of the nesting season for most migratory birds (October through April). If present, migratory birds may be disturbed and displaced to adjacent habitats during construction activities. If construction activities occur during migratory bird breeding/nesting periods, the Project area (and surrounding habitats) would be surveyed by a qualified biologist for active nests no more than 5 days prior to the commencement of work. If active nests were found during surveys, spatial buffers would be established around such in coordination with USFWS and NRCS. Construction activities within the buffer areas would be prohibited until a qualified biologist confirmed that all nests are no longer active. Minimal nesting habitat, including riparian areas (0.03 acres) and shrub areas (0.11 acres), would be disturbed. The remaining habitat disturbance would be in foraging habitat consisting of grassland (1.17 acres) or emergent wetland (0.18 acres) adjoining heavily disturbed areas, or low-quality heavily disturbed crops and pastures (0.80 acres).

Based on the short duration of construction, timing of construction between October and April in areas containing habitat, implementation of avoidance/minimization measures, minimal suitable low-quality habitat disturbed, and abundant better suited higher quality habitat outside of the Project area, short-term direct construction impacts to migratory birds, eagles, and bird habitat are expected to be minor to negligible. No long-term impacts would occur to birds or habitat from project measures or continued O&M activities.

6.5.3.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Impacts for this alternative would be the same as those described for the Daniels Irrigation Improvements Alternative, with an additional 0.93 acres of temporary disturbance in crop/pasture habitat. The additional short-term disturbance in this habitat is not expected to impact wildlife species or habitat above and beyond the impacts described from the alternative above.

6.6 Human Resources

6.6.1 Socioeconomics

Please refer to Section 4.6.1 for existing socioeconomic conditions.

6.6.1.1 *No Action Alternative*

Under the No Action Alternative, the existing irrigation system would remain in place with deficiencies contributing to an estimated 23% water deficit. This would result in direct long-term adverse impacts on the local economy as it pertains to agricultural output of the land. The crop yield would continue to be reduced at 2.7 tons of hay per acre from the full 3.5 tons per acre yield. The 0.8 tons per acre reduced crop yield equates to a total annual loss of net return in hay at $119,000 (amortized and discounted) and would remain over the long term. Refer to the PR&G Analysis Report included in Appendix E for additional information on assumptions and calculations for water delivery and crop yield losses. Deteriorating asbestos pipe would continue to break with increasing frequency over time. It is estimated that pipe repairs would cost the sponsor $70,000 annually (amortized and discounted) when compared to the action alternatives.

6.6.1.2 *Daniels Irrigation Improvements Alternative*

A long-term direct benefit would occur for this alternative from more efficient and effective distribution of water to all users within the service area decreasing the irrigation water deficit to 5 percent, or an 18 percent reduction in the deficit. This would increase crop yield by 0.6 tons per acre, equating to a net annual gain in hay return of $92,000 (amortized and discounted). Additionally, O&M costs would decrease from replacing degraded sections of asbestos pipe, resulting in an annual benefit of $70,000 (amortized and discounted). Construction activities would occur outside of the irrigation season, and no short-term impacts to irrigation delivery or crop production are expected. There may be a short-term increase in construction crew expenditures during construction, however, this increase in spending is not expected to have a measurable impact on the local economy.

6.6.1.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

The long-term direct benefits for this alternative would be similar to those described for the Daniels Irrigation Improvements Alternative, except an additional benefit would be achieved from the interconnection to the CUWCDs pipeline. After implementation, no water deficit would remain and crop yield would increase by 0.8 tons per acre, equating to a net annual gain in hay return of $119,000 (amortized and discounted).

6.6.2 Historic Properties / Cultural Resources / Native American Religious Concerns

Please refer to Section 4.6.2 for existing historic properties and cultural resources within the APE.

6.6.2.1 *No Action Alternative*

There would be no change to existing historical features identified within the APE for this alternative.

6.6.2.2 *Daniels Irrigation Improvements Alternative*

The proposed pipeline replacements for this alternative will parallel one historic property, the Daniels Irrigation Company Canal, but the pipeline will be placed within the existing roads and will avoid adverse effects to the canal. The segments of all other NRHP-eligible canals within the APE are non-contributing to the overall eligibility of the canals due to modern modifications and/or realignments. As such, this alternative was determined by NRCS to have no adverse effect to historic properties. Factors considered in determining whether a proposed project would have adverse effects to historic properties include the extent or degree to which its implementation would result in:

1) Damage to, or loss of, a site of archaeological, tribal, or historical value that is listed, or eligible for listing, in the NRHP.
2) Loss or degradation of a TCP or sacred site, or if the property or site is made inaccessible for future use.
3) Disturbance to any human remains, including those interred outside formal cemeteries.
4) Isolation of cultural resources from the context considered significant; and
5) An effect to project elements that would be out of character with the property or site and its setting

Per 36 CFR 800.4 and 800.5, the NRCS consulted with the SHPO and the Ute Tribe, Shoshone-Bannock Tribes of the Fort Hall Reservation, Eastern Shoshone Tribe of the Wind River Reservation, Wyoming, and Northwest Band of the Shoshone Nation on the description of the APE and determinations of NRHP site eligibility in letters dated March 24, 2023. The SHPO concurred with determinations of project effects in a letter dated March 29, 2023 (Appendix A). Tribal consultation also complied with EO 13007, EO 13175, and the American Indian Religious Freedom Act (AIRFA). The Ute Tribe responded via telephone on December 8, 2023, that they have no concerns on the project. Tribe consultation is further described in Section 7.1.3. No Native American religious concerns and/or TCPs have been identified.

6.6.2.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Impacts for this alternative would be the same as those listed for the Daniels Irrigation Improvements Alternative.

6.6.3 Hazardous Materials

Please refer to Section 4.6.3 for existing hazardous materials within the Project area.

6.6.3.1 *No Action Alternative*

For this alternative the asbestos cement pipe would continue to degrade resulting in pipe failures and pipe erosion. This would have a long-term indirect adverse impact of increased human exposure to the hazardous asbestos-containing materials from handling of the material for repairs or from asbestos materials being transported through the water system.

6.6.3.2 *Daniels Irrigation Improvements Alternative*

For this alternative the asbestos cement pipe sections would no longer be used, or they would be replaced. Approximately 6,900 linear feet of asbestos pipe would be abandoned in place. The abandoned sections of pipe may not be subject to the NESHAP or the Utah Asbestos Rule since the pipeline would be left in-tact. However, both the present condition of the pipe and the method used to take the pipe out of service should be considered to determine the applicability of the Utah Asbestos Administrative Rules and Federal Asbestos Regulations (UDEQ 2014). Asbestos pipe that is abandoned in place would be capped at each end and warning signage placed along the alignment. The abandoned pipe sections would be recorded on as-built plans and by geographic information system (GIS). The recorded data would be provided to appropriate county departments or organizations to have on file to minimize and manage pipe disturbance from future activities in the area.

Approximately 6,890 linear feet of asbestos pipe would be replaced. Per UDEQ Division of Air Quality Rules (UDEQ 2014), projects that remove or disturb 260 linear feet or more of asbestos cement pipe are potentially subject to both Utah State Asbestos Administrative Rules (R307-801-3) and Federal Regulations (40 CFR Part 61.145(a)(1)). Testing would be performed on suspect asbestos cement pipe prior to abandoning or removal by a certified asbestos inspector. Removal of asbestos pipe would be performed by a certified asbestos company. Any asbestos pipe removed from alternative actions would be removed, handled, and disposed of at a landfill approved to receive asbestos and in accordance with all applicable federal and state regulations including but not limited to NESHAP, the Utah Asbestos Rule, and UDEQ Air Quality Rules.

Based on compliance with all applicable state and federal regulations for abandonment, removal, and disposal of asbestos cement pipe, short-term direct adverse impacts from these hazardous materials are not expected. Long-term indirect beneficial impacts would occur that would reduce potential exposure to asbestos-containing material from abandonment and replacement of the asbestos cement pipe sections.

There does not appear to be any additional hazardous materials within the Project that represent a concern at this time, but on-site surveys would be necessary to ensure the absence of potential hazardous materials prior to construction. Equipment and associated fuels would be working/stored on-site during construction, but effects would be negligible based on adherence to applicable laws and regulations. See Section 8.3 for avoidance and minimization measures.

6.6.3.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Short-term and long-term impacts for this alternative would be the same as those described for the Daniels Irrigation Improvements Alternative, with only 1,660 linear feet of asbestos cement pipe being replaced and 12,585 linear feet being abandoned in place.

6.6.4 Public Health and Safety

Please refer to Section 4.6.4 for existing public health and safety concerns.

6.6.4.1 *No Action Alternative*

Public safety concerns would be reduced for the Center Creek ice-induced flooding issues after construction of the new roadside drainage ditch is completed in October 15, 2025. Refer to Section 6.7 for cumulative effects for the separate roadside ditch project. This alternative would not remove the asbestos cement pipes. The current health and safety risks associated with potential asbestos exposure would remain. Long-term adverse impacts of increased human exposure to the hazardous asbestos-containing materials would occur from handling of pipe for O&M activities/pipe repairs or from asbestos materials being transported through the water system.

6.6.4.2 *Daniels Irrigation Improvements Alternative*

This alternative removes the use of cement asbestos pipe in the Daniel Irrigation system and eliminates the potential of asbestos exposure related to pipe maintenance and pipe erosion (see Section 6.6.3.2). Abandoned sections of cement pipe would still be present underground and Daniel Irrigation would maintain the existing easements where this pipe remains. Landowners would be informed of the asbestos cement pipe hazards and excavation activities would be prohibited within areas containing abandoned sections of cement pipe. If excavation activities are required in the future, all applicable state and federal rules/regulations would be required to be adhered to for any excavation, removal, handling, and disposal of asbestos cement pipe (refer to Section 6.6.3.2). These alternative measures would have long-term benefits to public health and safety from reduced potential for exposure to asbestos-containing materials. Due to adherence to applicable state and federal rules/regulations (see Section 6.5.3.2), short-term adverse impacts to public health and safety are not expected.

6.6.4.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Short-term and long-term impacts for this alternative would be the same as those described for the Daniels Irrigation Improvements Alternative above.

6.6.5 Transportation Infrastructure

Please refer to Section 4.6.5 for a description of existing transportation infrastructure with the potential to be impacted.

6.6.5.1 *No Action Alternative*

Transportation infrastructure hazard concerns would be reduced for the Center Creek ice-induced flooding issues after construction of the new roadside drainage ditch is completed in October 15, 2025. Refer to Section 6.7 for cumulative effects for the separate roadside ditch project. No impacts to transportation infrastructure are expected from continued O&M activities.

6.6.5.2 *Daniels Irrigation Improvements Alternative*

Installation of measures for the Daniels Irrigation system would require road closures and detours to facilitate construction. This would result in a minor short-term impact that could slow down or

delay travel times through the corridors. After construction completion the roadways would be reopened to normal vehicle traffic and no long-term adverse impacts would occur.

Continued O&M activities are not expected to have measurable impacts to the resource.

6.6.5.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Short-term and long-term impacts would be the same as those described for the Daniels Irrigation Improvements Alternative above.

6.6.6 Noise

Please refer to Section 4.6.6 for existing noise conditions within the Project area.

6.6.6.1 *No Action Alternative*

This alternative or continued O&M activities would not produce any noise above and beyond what is currently produced and there would be no impact to noise.

6.6.6.2 *Daniels Irrigation Improvements Alternative*

During construction activities, noise could be generated that would constitute a nuisance to nearby residential and other community properties. This direct effect would be short-term in nature, and noise minimization efforts would be used (see Section 8.3.11). In addition, noise control programs (42 U.S.C. 4913) and any appliable noise regulations would be followed. Short-term noise impacts would be minor based on the duration of construction, implementation of BMPs, and adherence to noise programs/regulations. There would be no changes to noise from alternative measures over the long term. Continued O&M activities are not expected to increase noise above or beyond what is currently produced.

6.6.6.3 *Daniels Irrigation Modified Alignment Alternative (Preferred Alternative)*

Short-term and long-term impacts for this alternative would be the same as those described for the Daniels Irrigation Improvements Alternative above.

6.7 Cumulative Effects

A list of known past, present, or reasonably foreseeable future actions in the vicinity of the Project area is provided below.

- Intersection of Center Creek Road and S 2400 E Street: A drainage ditch will be installed by Wasatch County near the intersection to resolve ice-induced flooding issues. Construction is scheduled to begin August 11, 2025 and would be completed by October 15, 2025.
- US-40 Median: The Utah Department of Transportation (UDOT) has a project (US-189; SR-113 Charleston to US-40 Heber that is currently planned for construction in 2024. The measure to be performed consist of preserving the life of the pavement by milling and replacing 1.5 inches of the asphalt.

- Agricultural Activities: The Project area is located within agricultural areas where farming activities (plowing, harvesting, tilling, etc.) occur on a regular basis.
- Development: The population of Wasatch County has greatly increased from 23,530 in 2010 (USCB 2010) to 36,173 in 2021 (USCP 2021). Development of city infrastructure and buildings has occurred to accommodate population growth and is anticipated to continue.

Impacts that are negligible are not considered in the cumulative analysis because they would not combine to create a measurable cumulate effect. Resources that have measurable impacts include minor short-term impacts during construction to wildlife (including migratory birds), transportation movement, and noise. There are no long-term adverse impacts from implementation of action alternatives, but long-term positive effects would occur for consideration in cumulative analyses. These include long-term benefits to public health and safety and socioeconomic conditions related to increased crop production. However, the other past, present, or reasonably foreseeable future actions are not applicable to either of these resources or do not overlap with effects to these resources. Therefore, only the short-term impacts during construction to wildlife, transportation movement, and noise are analyzed.

6.7.1 No Action Alternative

There are no actions associated with this alternative and no cumulative impacts are expected.

6.7.2 Action Alternatives

This alternative has no long-term adverse impacts and would therefore would not contribute to any long-term cumulative impacts to any resource. Based on adherence to BMPs and activities occurring primarily in previously disturbed and developed areas, most impacts during construction are minor to negligible. Measurable cumulative short-term impacts to most resources are not expected. Resources with measurable short-term cumulative impacts when added to other actions include wildlife/wildlife habitat, migratory birds/bald eagles, transportation infrastructure, and noise. Alternative impacts, when added to impacts associated with other known actions occurring in the past, present, or reasonably foreseeable future, are described below.

- Wildlife/Wildlife Habitat and Migratory Birds/Bald Eagles: If other activities occur during the same time and in the same place as the construction activities proposed for the Project, they could cumulatively impact general wildlife habitat and species, including migratory birds and bald eagles. Based on the proximity of the Project area primarily within highly disturbed/developed areas lacking habitat, cumulative short-term impacts would be minor.
- Transportation Infrastructure: The construction activities for the US-40 project and Center Creek Road project would be completed prior to construction for the action alternatives. Therefore, no cumulative impacts to transportation movement are expected.
- Noise: If other road activities occur during the same time and in the same place as the construction activities proposed for the Project, they could cumulatively increase noise sources. Based on the short-term nature of activities and proximity of the Project area in areas experiencing multiple daily noise activities, cumulative impacts would be minor.

6.8 Risk and Uncertainty

A 50-year project life was assumed for alternative costs and economic evaluations. Estimating alternative costs and benefits involves a certain degree of risk and uncertainty. During the planning process, decisions are made with information that is uncertain, including errors in measurements. Assumptions made during the planning process are based on the best available science, technology, and information. Extended delays between the planning process and construction increase the degree of risk and uncertainty. Estimated alternative costs are based on computed work quantities multiplied by the appropriate unit cost for that type of work. Unit costs are based on current market prices from similar projects. Costs can be influenced by economic factors that cannot be predicted between the planning process and construction that could increase the actual cost and decrease the availability of materials.

Economic benefits from projects are based values of property, infrastructure, agricultural land, water rights, dredging, equipment, and services. Such items are expected to become more valuable in the future, but it can be difficult to predict future economic conditions. There is also uncertainty in estimating the social and environmental costs associated with each alternative because interested party values, judgments, and opinions may shift over time.

6.9 Irreversible and Irretrievable Resource Commitments

NEPA requires that environmental analysis include identification of "… any irreversible and irretrievable commitments of resource which would be involved in the preferred alternative should it be implemented." Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

Implementing the Action Alternatives would involve a commitment of a range of natural, physical, human, and fiscal resources. Considerable amounts of fossil fuels, labor, and construction materials would be expended. Additionally, large amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. They are not, however, in short supply, and their use would not have an adverse effect upon continued availability of these resources. Any construction would also require a substantial one-time expenditure of federal and cost-share funds that would not be retrievable.

The commitment of these resources would be based on the premise that residents in the immediate area, the state, and the region would benefit by the improved quality of post-construction conditions. These benefits generally are anticipated to outweigh the permanent commitment of resources.

7.0 Consultation, Coordination, and Public Participation

This section describes the coordination efforts with the public, agencies, tribes, and SLOs for the Project.

7.1 Consultation

7.1.1 U.S. Fish and Wildlife Service

USFWS was invited to comment on the Project during the scoping period and invited to be a cooperating agency on the Project in a letter dated February 21, 2020 (Appendix A), but no response was received. In accordance with Section 12 of PL 83-566, a letter was sent to the USFWS on May 2, 2024 to welcome their participation in preparation of the Plan-EA (Appendix A), but no response was received. A BA was completed for the Project (Appendix E, BC&A 2022c and BC&A 2024) to comply with Section 7 of the ESA. The BA was submitted to the USFWS on May 11, 2022 and December 9, 2024, to comply with Section 7 of the ESA with a No Effect determination for ESA-listed species from Project actions (Appendix A).

7.1.2 Utah State Historic Preservation Office

Utah State Historic Preservation Office (SHPO) was invited to comment on the Project during the scoping period, but no comment was received. A Cultural Resource Assessment was completed (Certus Environmental Solutions, LLC. 2021) and NRCS determined that there would be No Adverse Effect to historic properties from Project actions. The Cultural Resource Assessment, description of the APE, site eligibility, and determination of No Adverse Effect (per 36 CFR 800.5) was submitted to Utah SHPO for concurrence with the determinations on March 24, 2023, and SHPO concurrence was received on March 29, 2023 (Appendix A).

If cultural/archaeological resources are found during construction activities, construction would stop, and the appropriate agencies would be notified, according to the NRCS Prototype Programmatic Agreement with the SHPO.

7.1.3 Tribal Consultation

Utah NRCS has a well-established tribal consultation protocol, which identified tribes/THPOs who hold ancestral land, traditional use, and/or traditional cultural property claims in and near the Project area using the NPS Native American Graves Protection and Repatriation Act Native American Consultation Database (NACD), a database through which any federally recognized tribe could identify those counties in Utah where they have consultation interests. The U.S. Department of Housing and Urban Development Tribal Directory Assessment Tool (TDAT), the BIA website, and the Utah Division of Indian Affairs (UDIA) website was also used as supplemental sources to identify tribes with consultation interests. The assembled list of tribes identified from the NACD, TDAT, BIA website, and UDIA website are included in Table 7-1.

Tribes/THPOs were consulted to comply with EO 13007, 13175, the AIRFA, and 36 CFR 800.4 (Appendix A). During the scoping process, the NRCS reached out to the assembled list of tribes regarding known historic properties or places of traditional religious and cultural importance near the Project area. Tribes were also asked about any additional tribes that should be contacted. A reasonable and good faith effort was made per 36 CFR pt. 800.3(f)(2) to consult with these tribes via letter, email, and telephone. Per 36 CFR 800.4 and 36 CFR 800.5, NRCS consulted with the assembled list of tribes on March 24, 2023, on the description of the APE, site eligibility, and determination of No Adverse Effect. Table 7-1 summarizes the tribal consultation, and a detailed tribal consultation table is provided in Appendix A. No tribal concerns have been identified during the current consultation process.

Table 7-1. Tribal Consultation Summary

Tribe	Consultation Package Sent	Follow Up #1	Follow Up #2	Response
Eastern Shoshone Tribe of the Wind River Reservation	3/24/2023	10/30/2023	12/1/2023	None
Northwest Band of the Shoshone Nation	3/24/2023	10/30/2023	12/1/2023	Phone: 12/1/2023; None
Shoshone-Bannock Tribes of the Fort Hall Reservation	3/24/2023	10/30/2023	12/1/2023	None
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah	3/24/2023	10/30/2023	12/8/2023	Phone: 12/8/2023; No Concerns

Summary responses received from the tribes are included below and detailed communication documentation is provided in Appendix A.

- Northwest Band of the Shoshone Nation: They will look over the report and respond next week via email. To date, no response has been received.
- Ute Indian Tribe of the Uintah and Ouray Reservation, Utah: The tribe has no concerns for the Project and will prepare response letters to send next week. To date, no letter has been received.

The tribes were offered a chance to review and comment on the Draft Plan-EA and no comments were received.

7.1.4 U.S. Army Corps of Engineers

The USACE has jurisdiction over work in waters of the U.S. under Section 404 of the Clean Water Act. A formal request to be a cooperating agency on the Project was submitted to USACE on February 21, 2020 (Appendix A). The USACE was also invited to comment on the Project during the scoping period. At the issuance of this report, a response has not been received from the USACE. The USACE was offered a chance to review and comment on the Draft Plan-EA and no comments were received.

7.1.5 Bureau of Reclamation

The BOR owns lands within portions of the Project Area which CUWCD holds an easement within for irrigation operations. These lands are proposed for construction staging use to facilitate Project measures. The BOR was invited to comment on the Project during the scoping period, but no comment was received. Based on CUWCD coordination with the BOR, an encroachment permit would need to be obtained through the BOR on those lands. The BOR did not feel it necessary to be a cooperating agency on the Project as long as they were offered the opportunity to review the Plan-EA when it is released to the public (Appendix A). The BOR was offered a chance to review and comment on the Draft Plan-EA and no comments were received.

7.2 Coordination

7.2.1 Sponsoring Local Organization

Financial assistance for the Project was requested from NRCS and Wasatch County through Standard Form 424-Application for Federal Assistance on June 14, 2018. Initial coordination was conducted with the SLOs (Wasatch County and UDAF) regarding the Project and the proposed measures. Meetings were conducted throughout the planning and engineering process to discuss the Project measures and identify potential concerns. The SLOs were provided copies of the preliminary Plan-EA for review prior to issuance of the Draft Plan-EA to the public. SLO report comments or concerns were addressed and/or corrected prior to issuance of the Draft Plan-EA to the public.

7.2.2 Stakeholders

Daniel Irrigation Company (represented by UDAF) and CUWCD are stakeholders in the Project. The Daniel Irrigation system within Site 1 is operated/maintained by the Daniel Irrigation Company and water is supplied to the system from CUWCD. Coordination with Daniel Irrigation Company and CUWCD was completed throughout the planning and engineering process to discuss/develop the alternative measures and identify areas needed for irrigation improvements.

Coordination was conducted with private landowners having a stake in the Project due to proposed alternative measures being conducted on their lands. Easements would need to be obtained to facilitate alternative measures on private lands. Consultation with landowner stakeholders will continue in the next Project phase for final design.

7.2.3 Agency Plan-EA Reviews

Agency Plan-EA reviews included appropriate NRCS reviews prior to issuance of the Draft Plan-EA to the public. The sequential review process included the following.

1) NRCS Utah review
2) NRCS National Water Management Center (NWMC) review
3) NRCS Headquarters review
4) Issue the Draft Plan-EA for public review

7.3 Public Participation

7.3.1 Public Participation Plan

A Public Participation Plan (BC&A and AEP 2022, included in Appendix E) was prepared to provide effective procedures that define outreach to the general public, local businesses, associations, stakeholders, affected landowners, tribes, and affected government agencies. The main goal of public participation is to involve a diverse group of public and government agency participants to solicit input and provide timely information throughout the NEPA review process. As part of the public participation process, the plan seeks to meaningfully engage minority, low-income, and traditionally under-represented populations during the NEPA review process.

7.3.2 Project Scoping

An announcement of the Project and solicitation of comment was provided during the scoping process so interested parties or those potentially affected by proposed alternatives had an opportunity to share their concerns and provide input regarding the Plan-EA during the initial stages of the process. The scoping process included a public meeting held on February 12, 2020, and an open comment period that ran from January 29, 2020 through March 2, 2020. The Project Scoping Report (Appendix E) outlines the scoping efforts and comments received during the scoping process.

7.3.3 Draft Plan-EA Public Comment

The NOA describing the proposed project, information on the Draft Plan-EA public meeting, availability of the Draft Plan-EA for review, and solicitation of comments, was mailed to interested parties prior to the start of the open comment period. These included mailings to private parties, agencies, tribes, organizations, and stakeholders (see Section 11.0). The NOA was published in the local newspaper (The Salt Lake Tribune) on August 17 and August 24, 2025. The NOA and Draft Plan-EA were posted and available for download on the NRCS project website during the open comment period. Hard copies of the Draft Plan-EA were also available for review at the Wasatch County Library and Wasatch County Irrigation District. A copy of the Draft Plan-EA NOA and proof of newspaper postings are provided in Appendix A.

One combined agency and public Draft Plan-EA meeting was conducted on September 9, 2025. A meeting sign-in sheet is provided in Appendix A.

The open comment period lasted from August 25, 2025 through September 24, 2025. Written comments could have been submitted via mail, e-mail, or mail, and oral comments could have been submitted via phone. Three comments were received during the open comment period for the Draft Plan-EA. The Comments received and a comment response matrix are provided in Appendix A. The comments were addressed, where applicable, in the Final Plan-EA.

7.3.4 Final Plan-EA and FONSI Public Comment

The Final Plan-EA was updated to address comments received on the Draft Plan-EA and a FONSI was prepared. A 30-day public review of the Plan-EA and FONSI will be provided for interested parties. An NOA of the Final Plan-EA and FONSI will be published in the local newspaper (The Salt Lake Tribune) and sent to agencies and parties who expressed interest in the Project to date. Copies of the Final Plan-EA and FONSI will be made available for download on the NRCS Project website (NRCS Project Website).

7.3.5 Public Outreach

Table 7-2 lists the Project's public outreach activities during the NEPA process.

Table 7-2. Public Outreach Activities

Date	Description
January 24-27, 2020	Scoping announcement was sent to interested parties*
January 29, 2020	Scoping public comment period opened

Date	Description
January 29 & February 5, 2020	Scoping announcement was published in The Wasatch Wave newspaper
February 12, 2020	Scoping meeting was held at the Senior Center in Heber, Utah
March 2, 2020	Scoping public comment period closed
August 25, 2025	Draft Plan-EA Public Comment Period Open *NOA for interested parties* were sent prior to the start of the open comment period. The NOA published in The Salt Lake Tribune approximately 1-week prior to and at the start of the open comment period.*
September 9, 2025	Draft Plan-EA Public Meeting
September 24, 2025	Draft Plan-EA Public Comment Period Closed
June 2026	Final Plan-EA and FONSI

** Interested parties include local/state/federal agencies, tribes, organizations, landowners, members of the public, etc. included in the Project mailing list.*

8.0 Preferred Alternative

8.1 Rationale for Preferred Alternative Selection

Several alternatives were formulated to meet the Project purpose and need as documented in Section 5.0. The NEE alternative, also identified as the preferred alternative, was selected based on the best option determined from the comparison of alternatives developed. The alternative selected provided the greatest cost-benefit, met the guiding principles, provided the greatest benefits for ecosystem services, and was in line with the federal objective and PL 83-566 general purposes. The NEE Alternative was determined to be the locally preferred, environmentally preferred, and socially preferred alternative. Non-structural measures were also considered, but there were no reasonable non-structural measures that could meet the purpose and need of the Project. Refer to the PR&G Analysis Report (AEP and Highland Economics 2023) included in Appendix E for documentation of the alternative decision-making process.

The Daniels Irrigation Modified Alignment Alternative was selected as the preferred alternative for the Project. This alternative improves water delivery efficiency in the Daniel Irrigation system, supports crop production, and reduces health and safety hazards. There are no long-term adverse impacts to environmental, economic or social resources associated with the alternative measures and only minor to negligible short-term impacts would occur during construction. The alternative would provide long-term benefits as described in Section 6.0. The alternative meets the purpose and need, satisfies the goals to be accomplished, and provides the greatest cost-benefit ratio of all alternatives included in detailed study.

8.2 Measures to be Installed

A summary of the preferred alternative measures is included below. Refer to Section 5.5.3 for a detailed description of the alternative. A map of alternative measures is provided in Appendix B – Maps B3 and B4, and conceptual design drawings are attached to the Technical Memorandum included in Appendix E. The concept design was developed in accordance with NRCS Conservation Practice Standard 430 for Irrigation Pipeline (NRCS 2023), National Engineering Handbook 652 Irrigation Guide (NRCS 1997), and National Engineering Handbook 623 Sprinkler Irrigation (NRCS 2016b).

- Daniels Irrigation Preferred Alternative Measures: Install 14,155 linear feet of new irrigation pipe, replace/upsize 7,810 linear feet of irrigation pipe, replace 1,660 linear feet of asbestos cement pipe with PVC pipe, and abandon 12,585 linear feet of asbestos cement pipe in place. Install a new connection to the Center Creek Pressure Zone with a valve vault to better control water delivery.

8.3 Avoidance, Minimization, and Mitigation

Compensatory mitigation would not be required for the preferred alternative. The general avoidance and minimization measures proposed are described in Sections 8.3.1 through 8.3.11 below.

8.3.1 Upland Erosion

Proper BMPs would be installed during and after construction to offset impacts that would help prevent and control soil erosion. Areas disturbed would be restored and stabilized through establishment of ground cover after construction completion.

8.3.2 Surface Water Quality

Project design elements, including required BMPs, would be implemented to reduce the quantity of sediment (1) entering drainages, and (2) flowing downstream and violating any federal or state water quality rules and regulations. Construction BMPs would include, but are not limited to, the following:

- A Storm Water Pollution Prevention Plan would be required and implemented that contains erosion and sediment control and pollution prevention BMPs, such as, but not limited to, silt fences, fiber wattles, and/or earthen berms.
- Water bodies adjacent to construction and staging areas would be identified, and such measures as straw bales, silt fences, and other appropriate sediment control BMPs would be implemented to prevent the entry of sediment and other contaminants into waters.
- To ensure that accidental spills do not enter waters, the storage of petroleum-based fuels and the refueling of construction machinery would not occur outside of approved designated staging/batch plant areas. Furthermore, the alternative would comply with state and federal water quality standards and toxic effluent standards to minimize any potential adverse impacts from discharges to waters of the U.S.
- No construction materials would be stockpiled or deposited in or near any water bodies.

8.3.3 Waters of the U.S. and Wetlands

Temporarily disturbed waters of the U.S. and wetlands would be restored to preconstruction conditions. The following avoidance and minimization measures would be implemented for work within wetlands.

- Heavy equipment working in wetlands would be placed on mats, or other measures taken to minimize soil disturbance.
- Temporary fills would be removed in their entirety and the affected areas returned to preconstruction elevations.
- If excavation in wetland areas is necessary, excavated wetland soils would be saved, stockpiled, and replaced after construction completion.
- Disturbed wetland areas would be restored with wetland vegetation appropriate to the surrounding wetland community as approved by NRCS after construction completion.

8.3.4 Air Quality

Fugitive dust, MSAT, and GHG emission increases associated with construction would be minimized through implementation of the following applicable BMPs:

- Spraying the soil on-site with water or other similar approved dust suppressant/soil binder.
- Wetting materials hauled in trucks, providing adequate freeboard (space from the top of the material to the top of the truck), or covering loads to reduce emissions during material transportation/handling.
- Providing a stabilized construction entrance (track-out pad), wheel washers, and/or other similar BMPs at construction site access to reduce track-out of site materials onto the adjacent roadway network.
- Removing tracked-out materials deposited onto adjacent roadways.
- Wetting material stockpiles to prevent wind-blown emissions.
- Establishing vegetative cover on bare ground as soon as possible after grading to reduce wind-blown dust.
- Requiring appropriate emission-control devices on all construction equipment.
- Requiring the use of cleaner-burning fuels.
- Using only properly operating, well-maintained construction equipment.

8.3.5 Noxious Weeds and Invasive Plants

BMPs would be implemented during construction to prevent the spread of noxious and invasive plants. During construction and until restoration areas are fully established, BMPs would be maintained on a regular basis to prevent the establishment of noxious and invasive plants. Non-desirable plant species would be controlled by cleaning equipment prior to delivery to the Project site, eradicating these species before the start and during construction as discovered, and routinely monitoring after construction completion. A PCRP would be developed that would include mechanisms for addressing weed establishment and treatment. Long-term negative impacts would be managed with replanting and various methods of weed control.

8.3.6 Wildlife and Wildlife Habitat

Construction activities would be limited to the smallest extent practicable within the Project area. Disturbed areas would be restored after construction completion.

8.3.7 Special Status Animal Species

Preconstruction surveys would be performed for northern leopard frogs by a qualified biologist prior to the commencement of work activities. If the species were found during surveys, avoidance/minimization measures would be implemented in coordination with DWR. Appropriate fish salvage and/or screening measures would be implemented during in-water work construction periods. Refer to Section 8.3.8 Migratory Birds/Bald Eagles for avoidance and minimization measures for special status species that are also protected under the MBTA.

8.3.8 Migratory Birds/Bald Eagles

Construction activities would be limited to the smallest extent practicable within the Project area. Disturbed areas would be restored after construction completion. If construction activities occur during migratory bird breeding/nesting periods, the Project area (and surrounding habitats) would be surveyed by a qualified biologist for active nests no more than 5 days prior to the commencement of work. If active nests are found during surveys, spatial buffers would be established around them in coordination with USFWS and NRCS. Construction activities within the buffer areas would be prohibited until a qualified biologist confirms that all nests are no longer active.

8.3.9 Hazardous Materials

Any asbestos pipe removed from alternative actions would be removed, handled, and disposed of in accordance with all applicable federal and state regulations including but not limited to NESHAP, the Utah Asbestos Rule, and UDEQ Air Quality Rules.

NRCS requires that contractors comply with all federal, state, and local laws and regulations pertaining to pollution and contamination of the environment to prevent pollution of surface water, groundwater, soil, and air with any hazardous materials. If any hazardous materials/sediment or suspect hazardous materials/sediment are encountered during ground disturbing activities, the contractor shall follow all applicable state and federal regulations for handling, disposing, and reporting of hazardous materials. The contractor shall ensure that placed fill is free from contamination.

8.3.10 Public Health and Safety

Testing would be performed on suspect asbestos cement pipe prior to abandoning or removal by a certified asbestos inspector. Removal of asbestos pipe would be performed by a certified asbestos company. Any asbestos pipe removed from alternative actions would be removed, handled, and disposed of at a landfill approved to receive asbestos and in accordance with all applicable federal and state regulations including but not limited to NESHAP, the Utah Asbestos Rule, and UDEQ Air Quality Rules. Asbestos pipe that is abandoned in place would be capped at each end and warning signage placed along the alignment. The abandoned pipe sections would be recorded on as-built plans and by geographic information system (GIS). The recorded data would be provided to appropriate county departments or organizations to have on file to minimize and manage pipe disturbance from future activities in the area. Daniel Irrigation would maintain the existing easements where underground abandoned asbestos pipe remains. If excavation activities around abandoned asbestos pipe are required in the future, all applicable state and federal rules/regulations would be required to be adhered to for any excavation, removal, handling, and disposal of asbestos cement pipe.

8.3.11 Noise

Construction equipment will be outfitted with noise dampening measures if necessary to meet applicable noise ordinances. Construction equipment operation will be limited to daylight hours. Noise control programs (42 U.S.C. 4913) and any appliable noise regulations would be followed.

8.4 Permits and Compliance

The federal, state, and local permits and compliance actions described in this section would be required for construction of the preferred alternative. A Watershed Agreement and a Memorandum of Understanding shall be completed and signed by the NRCS and SLOs prior to the obligation of construction funds for the Project.

8.4.1 Federal

NHPA: Per 36 CFR 800.3, the NRCS consulted with four tribes/THPOs listed in Table 7.1 during the NEPA scoping process regarding historic properties or places of traditional religious and cultural importance near the proposed project area and assistance in identifying other applicable tribes. No responses were received. Per 36 CFR 800.4 and 36 CFR 800.5, the NRCs consulted with the Utah SHPO and four Tribes/THPOs on March 24, 2023, on the description of the APE, site eligibility, and determination of No Adverse Effect. A SHPO concurrence letter, dated March 29, 2023, was received and has been included in Appendix A. The NRCS followed-up with Tribes/THPOs via email on October 30, 2023, and via telephone on December 1, 2023. The Ute Tribe was called on December 8, 2023, and has no concerns with the project. No other tribes have responded. Refer to Appendix A for a detailed tribal consultation table and all letters.

In the event that cultural/archaeological resources or human remains/funerary objects are found during construction activities, construction would stop, and the appropriate agencies would be notified according to NRCS protocol outlined in the NRCS Prototype Programmatic Agreement with the Utah SHPO.

USACE: Section 404 permitting would be required for work in jurisdictional waters of the U.S. It is anticipated that work within waters of the U.S. could be covered under Nationwide permit 3 (maintenance) and Nationwide Permit 7 (outfall structures and associated intake structures), based on the amount and type of activities to be completed.

USFWS: A BA was completed for the Project (Appendix E) with a determination of No Effect for ESA species and submitted to the USFWS on May 11, 2022 and December 9, 2024 (Appendix A). No further Section 7 consultation is required for the Project unless the proposed action changes or ESA-listed species designations change within the Project area.

BOR: An encroachment permit would be required for proposed access/staging within the existing CUWCD easement on BOR lands.

8.4.2 State

Utah SHPO: NRCS determined there would be No Adverse effect to historic properties for alternative measures based on a Cultural Resources Assessment (Certus Environmental Solutions, LLC 2021). The effect determination and Cultural Resources Assessment was submitted to the Utah SHPO for concurrence on March 24, 2023. A SHPO concurrence letter, dated March 29, 2023 was received and has been included in Appendix A.

Utah Department of Environmental Quality: A Utah Pollutant Discharge Elimination System Construction General Permit is required for construction activities that disturb more than 1 acre and discharge pollutants to surface waters. An SWPPP would be developed, including submitting a Notice of Intent (NOI) to the Utah DEQ. A 401 Water Quality Certification Application may also need to be completed for Project measures.

Utah Division of Water Rights: Written authorization from the State Engineer would need to be obtained to comply with the state Stream Alteration Program before any stream bed or banks could be altered for alternative measures.

8.4.3 Local

Town of Daniel and/or Wasatch County Permits: Any additional required city or county permits will be obtained prior to construction.

8.5 Installation and Financing

8.5.1 Planned Sequence of Installation

SLOs would complete all approvals and permits for the Project prior to the start of construction; these may take up to 1 year to obtain. The major construction elements for the preferred alternative would be sequenced to complete the critical path items first. Construction would take place over two seasons outside of the irrigation season (October through April) spanning 2026 through 2028.

8.5.2 Responsibilities

The original 1997 Watershed Work Plan set forth the responsibilities of NRCS and original sponsors. The roles and responsibilities for NRCS and the SLOs would continue in accordance with the Plan-EA, the Watershed Agreement, and the Memorandum of Understanding. NRCS is

responsible for leading the planning efforts and providing engineering support, the SLOs are responsible for environmental permits and construction implementation, and NRCS or the SLOs are responsible for the Project design. NRCS would assist the SLOs during construction by providing oversight and certifying completion of the Project.

8.5.3 Contracting

Project measures installed from NRCS funding mechanisms would be procured using contracts awarded. The SLOs would oversee and administer construction of the Project in coordination with NRCS.

8.5.4 Real Property and Relocations

Project measures are proposed primarily within existing road ROWs and utility easements, except for a new proposed pipeline through private land. An easement for the new pipeline segment including future O&M activities/access would need to be obtained. This includes approximately 0.5 acres on private land adjoining Middle Pond (Appendix C – Map C6).

8.5.5 Financing

The watershed plan must be authorized before funding may be made available for Project operations. NRCS would provide funding from the Watershed Protection and Flood Prevention Act (PL 83-566, as amended by PL 106-472), at the percentages detailed in Table 8-1 for the authorized purpose of agricultural water management. SLOs are responsible for providing the remaining non-federally funded portions of the Project. Funding for O&M of facilities after construction would be derived from normal revenues of the SLOs. This O&M cost would be budgeted annually so that the facilities are kept in good condition.

Table 8-1. Cost Share by Authorized Project Purpose

Authorized Purpose	Construction		Engineering		Real Property Rights	
	NRCS	Sponsor	NRCS	Sponsor	NRCS	Sponsor
Agricultural Water Management	Up to 75%	≥25%	≤ 100%	≥0%	0%	100%

8.6 Operation and Maintenance

Operation of facilities includes the administration, management, and performance of non-maintenance actions needed to keep the facilities safe and functioning as designed. Maintenance includes performance of work, measuring the recording instrumentation data, preventing deterioration of facility components, and repairing damage or replacing the facility components as needed. Repairing damages to completed facilities caused by normal deterioration, droughts, flooding, or vandalism is considered maintenance. Maintenance includes both routine and as-needed measures.

The SLOs would be responsible for the operation, maintenance, and future modifications to facilities, and the estimated annual O&M cost is included in Section 8.7. A specific O&M Plan would be prepared by NRCS and the SLOs in accordance with the NRCS National Operation and Maintenance Manual (NRCS 2003). This plan and agreement would be entered into prior to the start of construction activities and would be in place for the extended life of the Project. The agreement would provide for inspections, reports, and procedures for performing the maintenance items. The agreement would include specific provisions for retention, use, and property improved with PL 83-566 (as amended by PL 106-472) assistance.

8.7 Costs

The installation cost estimate for the preferred alternative is $4,543,000, as identified in Table 8-2. Economic tables have been included to present information relevant to the costs and benefits of the preferred alternative and NEE Alternative. The costs for the preferred alternative are conceptual-level cost estimates only, with a level of detail judged appropriate for the purpose of identifying the NEE Alternative. Detailed structural designs and construction cost estimates would be prepared for the Project during the final design phase and prior to the start of the competitive bidding process. The final cost of the Project would be the price received from the winning construction bid plus or minus the amount of contract modifications. Assessments, considerations, and calculations are based on a 50-year evaluation period, a 52-year period of analysis, and a 2023 discount rate of 2.5 percent.

The estimated installation cost in Table 8-2 (Economic Table 1) documents land status upon which the Project structures reside, as well as federal and non-federal funding sources, respectively. NRCS is the only federal agency participating in the installation of works of improvement and all installation works of improvement will be on non-federal land.

Table 8-2. Economic Table 1 - Estimated Installation Cost

Tri-Valley Watershed, Utah

(Dollars) [1]

Works of Improvement	PL 83-566 Funds[2]	Other Funds[2]	Total
Site 1 (Daniel Irrigation)	$3,390,500	$1,152,500	$4,543,000

1 - Price base: 2023 *Prepared June 2023*

2 - All installation of works of improvement will be on non-federal land.

The estimated cost distribution in Table 8-3 (Economic Table 2) shows the estimated installation costs works of improvement between PL 83-566 funds and the costs borne by the SLOs (other).

Table 8-3. Economic Table 2 - Estimated Cost Distribution - Water Resource Project Measures

Tri-Valley Watershed, Utah

(Dollars) [1]

Works of Improvement	Installation Cost - Public Law 83-566				Installation Cost - Other Funds					Total
	Const	Eng	Project Admin	Total Public Law 83-566	Const	Real Prop Rights	Permits	Project Admin	Total Other	Installation Costs
Daniel Irrigation	$2,977,000	$331,000	$82,500	**$3,390,500**	$993,000	$60,000	$17,000	$82,500	**$1,152,500**	**$4,543,000**

1 Price base: 2023 *Prepared June 2023*

Const = Construction, Eng = Engineering, Prop = Property

Table 8-4 (Economic Table 4) shows the Project cost annualized over the period of analysis (50 years) with a 52-year period of analysis.

Table 8-4. Economic Table 4 - Estimated Average Annual Costs

Tri-Valley Watershed, Utah

(Dollars) [1]

Improvements	Project Outlays Amortization of Installation Cost	Project Outlays O&M and Replacement Cost[2]	Total
Site 1 (Daniels Irrigation)	$158,000	$0	$158,000

Prepared June 2023

1 - Price base: 2023. Calculated using FY 2023 Water Resources Discount Rate (2.5%), annualized over 50 years, and 52-year period of analysis.

2 - Due to the alternative measures, O&M would decrease and is therefore a benefit of the project and accounted for in Table 8-5 below. See Section 7.5 of Appendix D for additional information. The O&M and replacement costs are shown as zero in this table to avoid double counting of benefits.

The preferred alternative includes monetary and non-monetary benefits. Table 8-5 (Economic Table 5a) summarizes the results of the monetary benefits calculated for the preferred alternative. Monetary benefits include agricultural damage reduction and avoided O&M and replacement costs. Refer to Section 7.5 of Appendix D for methods, assumptions, and calculations of benefits.

Non-monetary benefits were also considered in determining the NEE. Non-monetary benefits include a long-term reduction in hazardous materials and improved public safety from removal or abandonment of asbestos cement pipe as described in Section 6.6.3 and Section 6.6.4.

Table 8-5. Economic Table 5a - Estimated Average Annual Benefits
Tri-Valley Watershed, Utah
(Dollars)[1]

Item	Estimated Average Annual Benefit		Total
	Agriculture Related	Non-Agriculture Related	
Site 1 (Daniel Irrigation)			
Maintaining Productivity (onsite)	$119,000	$0	$119,000
Avoided O&M and Replacement[2]	$70,000	$0	$70,000
TOTAL	**$189,000**	**$0**	**$189,000**

Prepared June 2023
1 - Price base: 2023. Calculated using FY 2023 Water Resources Discount Rate (2.5%), annualized over 50 years, and 52-year period of analysis.
2 – Benefit is the difference between the No Action and the preferred alternative O&M and replacement costs. The preferred alternative OM&R and replacement costs are less than the No Action and therefore added as a benefit.

Table 8-6 summarizes the benefits and costs of the preferred alternative and documents the benefit to cost ratio.

Table 8-6. Economic Table 6 - Comparison of Annual Benefits and Costs
Tri-Valley Watershed, Utah
(Dollars)

Item	Average Annual Costs[1]	Total Benefits[2]	Benefit Cost Ratio	Net Economic Benefits
Site 1 (Daniel Irrigation)	$158,000	$189,000	1.2	$31,000

Prepared June 2023
1 - From Table 8-4
2 - From Table 8-5

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10.0 List of Preparers

Table 10-1 lists the people who participated in the preparation of this document.

Table 10-1. List of Preparers

Name	Title (Years of Experience)	Education	Other
NRCS – Utah (Review and Coordination)			
Norm Evenstad	Water Resources Specialist (30+) Retired July 2023	B.S. – Geology	Utah P.G.
Derek Hamilton	Water Resources Coordinator (25+)	B.S. – Geography M.S. – Environmental Science	
Jason Roper	State Environmental Engineer (25+)	B.S. Civil Engineer	Utah P.E.
Tara Hoffmann	State Watershed Cultural Resources Specialist (15+)	B.S. – Interdisciplinary Studies M.A. – Anthropology	
Todd Sieber	State Geologist (20+)	B.S - Geology	
Adaptive Environmental Planning, LLC (Plan-EA Preparation)			
Bobbi Preite	Senior Natural Resources Consultant (17+)	B.S. – Geology	
Greg Allington	Senior Biologist (17+)	B.S. – Wildlife Ecology	
Highland Economics (Economic Analysis)			
Barbara Wyse	Principal and Senior Economist (18)	M.S. Agricultural and Resource Economics B.A. Environmental Sciences	
Bowen Collins Associates (Engineering, Concept Design, Wetland Delineation, Biological Assessment)			
Jamie Tsandes	Landscape Architect (20+)	B.L.A. – Landscape Architecture and Environmental Planning	Utah P.L.A. Idaho P.L.A.
Craig Bagley	Engineer (30+)	B.S. – Civil and Environmental Engineering M.S. – Civil Engineering	Utah P.E. Idaho P.E.
Merissa Davis	Biologist (17+)	B.S. – Conservation Biology, Wildlife Emphasis	
Cody Moultrie	Engineer (11+)	B.S. – Civil and Environmental Engineering M.S. – Civil Engineering	Utah P.E.
Certus Environmental Solutions, LLC (Cultural Resource Assessment)			
Sherry Murray Ellis	Principal Investigator (30+)	M.S. American Studies	

11.0 Distribution List

Table 11-1 lists the government agencies, organizations, and tribes that are included on the Project distribution list for scoping notice and notice of availability for the Draft Plan-EA.

Table 11-1. Distribution List

Federal Government	
BOR	U.S. Department of Indian Affairs
EPA	U.S. Forest Service
USACE	USFWS
State and Local Government	
CUWCD	U.S. Senators and Congress of Utah
Daniel Town	Utah Department of Transportation
State Representative	Utah Resource Development Coordination Committee
State Senator	Wasatch County
UDAF	Wasatch County Conservation District
Business and Organizations	
Daniel Irrigation Company	Heber Light and Power
Enbridge Gas	Twin Creeks SSD
Tribes	
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming	Shoshone-Bannock Tribe of the Fort Hall Reservation
Northwest Band of the Shoshone Nation	Ute Indian Tribe of the Uintah and Ouray Reservation
Private Parties	
The names of private parties receiving notice are not listed in this section for privacy.	

12.0 Acronyms, Abbreviations, and Short Forms

ac	acre
ac-ft	acre-feet
AIRFA	American Indian Religious Freedom Act
BA	Biological Assessment
BMPs	Best Management Practices
BOR	Bureau of Reclamation
Census Bureau	U.S. Census Bureau
CFR	Code of Federal Regulations
cfs	cubic feet per second
CWA	Clean Water Act
DWR	Utah Division of Wildlife Resources
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
ft	feet
GHG	greenhouse gas
MBCC	Migratory Birds of Conservation Concern
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEE	National Economic Efficiency
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NPS	National Park Service
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWSRS	National Wild and Scenic River System
O&M	Operations and Maintenance
PCRP	Post Construction Rehabilitation Plan
PL	Public law
Plan-EA	Supplemental Watershed Plan and Environmental Assessment
PM	particulate matter
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
THPO	Tribal Historic Preservation Office

TMDL	total maximum daily load
UDAF	Utah Department of Agriculture and Food
UDAQ	Utah Division of Air Quality
UDNR	Utah Department of Natural Resources
USACE	U.S. Army Corps of Engineers
U.S.C	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compound
WFPO	Watershed and Flood Prevention Operations