FINAL Watershed Plan and Environmental Assessment for the Ashley Valley Watershed Flood & Irrigation Project

Uintah County, Utah

Sponsoring Local Organization:
Uintah County

Lead Federal Agency:
U.S. Department of Agriculture
Natural Resources Conservation Service

May 2023

Title and Document Status: Final Watershed Plan and Environmental Assessment for the Ashley Valley Watershed Flood & Irrigation Project

Location: Uintah County, Utah

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

Cooperating Agency: Not applicable

Sponsoring Local Organization: Uintah County

Authority: This Watershed Plan and Environmental Assessment (Final Plan-EA) has been prepared under the authority of the Watershed Protection and Flood Prevention Act of 1954 (Public Law 83-566) as amended.

Abstract: This document was developed to assess the impacts of the proposed Ashley Valley Watershed Flood & Irrigation Project (Proposed Project). The purpose of the Proposed Project is to improve agricultural water management, improve recreational facilities for Uintah County, Vernal City, and Naples City, and provide flood damage prevention and reduction. The Proposed Project is needed to address water loss from Ashley Central Canal by piping the canal to conserve water lost to seepage, evaporation, and inefficient irrigation delivery systems, as well as address recreational facility needs in the project area. The Proposed Project is also needed to prevent runoff, erosion, and sediment damage in the areas downstream of the Coal Mine and Yellow Hills Sub-basins. The total project installation cost would be $19,601,669. The estimated amount to be paid by the USDA-NRCS Public Law 83-566 is approximately $15,958,041. This Final Plan-EA was developed pursuant to the requirements of the National Environmental Policy Act (NEPA) and is intended to be considered for authorization of Public Law 83-566 funding.

Comments and Inquires: Submit comments and inquiries to: Norm Evenstad, NRCS – ASTC-Water Resources, 125 South State Street, Room 4010, Salt Lake City, UT 84138 (801) 524-4569

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, gender identity (including gender expression), sexual orientation, 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.

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ASHLEY VALLEY WATERSHED, UTAH
ASHLEY VALLEY WATERSHED FLOOD AND IRRIGATION PROJECT

WATERSHED WORK PLAN AGREEMENT

between

Uintah County
(Referred to herein as sponsor)

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 the sponsor for assistance in preparing a plan for works of improvement for the Ashley Valley Watershed, State of 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, has been assigned by the Secretary of Agriculture to the NRCS; and

Whereas, there has been developed through the cooperative efforts of the sponsor and NRCS a watershed project plan and environmental assessment for works of improvement in the Ashley Valley Watershed, State of Utah, hereinafter referred to as the watershed project plan or plan, which plan is annexed to and made a part of this agreement;

Now, therefore, in view of the foregoing considerations, the Secretary of Agriculture, through NRCS, and the sponsor hereby agree on this watershed project 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 plan and including the following:

1. **Term.** The term of this agreement is for the installation period and evaluated life of the project (103 years) and does not commit 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 sponsor 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 sponsor and NRCS are as shown in the cost-share table in section 5 hereof.

   The sponsor agrees 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 sponsor 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 sponsor is 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-Ashley Valley Watershed Agreement Cost-Share Percentages and Amounts shows the estimated cost-share percentages and amounts for plan implementation.

Table 1. Ashley Valley Watershed Agreement- Cost-Share Percentage and Amounts

Watershed Works of Improvement	NRCS Cost	%	Cost	%	Total Cost
Cost-Sharable Items					
Flood Control, Detention Basins [1/]	$4,066,228	100%	$0	0%	$4,066,228
Ag Water Management - Piping	$9,047,065	75%	$3,015,688	25%	$12,062,753
Recreation – Kids Canal	$316,940	50%	$316,940	50%	$633,880
Relocation [2/]					
Subtotal: Cost-Sharable Costs	**$13,430,233**		**$3,332,628**		**$16,762,861**
Non-Cost-Sharable Items [3/]					
NRCS Technical Assistance/Engineering	$778,640	100%	--	--	$778,640
Project - Construction Administration	$1,749,168	99%	$12,000	1%	$1,761,168
Permits			$45,000	100%	$45,000
Land Acquisition			$254,000	100%	$254,000
Subtotal: Non-Cost-Sharable Costs	**$2,527,808**		**$311,000**		**$2,838,808**
Grand Total:	**$15,958,041**		**$3,643,628**		**$19,601,669**

[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.

6. **Land Treatment Agreements.** The sponsor 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 sponsor will ensure that 50 percent of the land upstream of any retention reservoir site is adequately protected before construction of the dam. The sponsor will provide assistance to landowners and operators to ensure the installation of the land treatment measures shown in the Watershed Project Plan. The sponsor 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 sponsor must agree to participate in and comply with applicable Federal floodplain management and flood insurance programs. The community of Vernal, Utah participates in the flood insurance program and is currently in good standing.

8. **Water and Mineral Rights.** The sponsor 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 sponsor 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 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 NRCS and the sponsor 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 NRCS may deauthorize or terminate funding at any time it determines that the sponsor has failed to comply with the conditions of this agreement or when the program funding or authority expires In this case, NRCS must promptly notify the sponsor in writing of the determination and the reasons for the deauthorization of project funding, together with the effective date. Payments made to the sponsor or recoveries by 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 NRCS and the sponsor 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 sponsor 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 103 years. Although the sponsor's 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 sponsor acknowledges that continued liabilities and responsibilities associated with works of improvement may exist beyond the evaluated life.

15. **Emergency Action Plan.** Prior to construction, the sponsor 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 sponsor 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, gender identity (including gender expression), sexual orientation, 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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Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

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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 sponsor is providing the certification set out below. If it is later determined that the sponsor 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 authorized under the Drug-Free Workplace Act.

Certification:

A. The sponsor certifies 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 sponsor 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 sponsor 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 sponsor, 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 sponsor 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 sponsor 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 primary sponsor is 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 sponsor 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 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 project sponsor 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 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 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 sponsor assures and certifies 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 sponsor 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: Uintah County
By:
Title: Chair
Date: 4. 25 - 23
Address: Zip Code:
The signing of this plan was authorized by a resolution of the governing body of the Uintah County Commission adopted at a meeting held on _____. _____ Address _____ Secretary [or other Title] Date: _____

USDA United States Department of Agriculture Natural Resources Conservation Service	
Approved By:	EMILY FIFE Digitally signed by EMILY FIFE Date: 2023.05.22 11:17:28 -06'00' **EMILY FIFE**
Title:	NRCS State Conservationist
Date:	

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Ashley Central Canal Water Loss Study Memorandum

Ashley Central Canal Flow Measurement: Steinaker Service Canal Inlet to Main Street (Kids Canal) Memorandum

Ashley Valley Flood Control Study & Cost Benefit Analysis

Cultural Resources Mitigation Memorandum of Agreement and Treatment Plan

SUMMARY
OFFICE OF MANAGEMENT AND BUDGET FACT SHEET

S-1.0 Title of Proposed Action

Final Watershed Plan and Environmental Assessment for the Ashley Valley Watershed Flood & Irrigation Project.

S-2.0 County, State

Uintah County, Utah

S-3.0 Congressional District

Utah Congressional District 1

S-4.0 Sponsoring Local Organization

Uintah County

S-5.0 Authority

Public Law 83-566 Stat. 666 as amended (16 U.S.C. Section 10001 et. Seq.) 1954

S-6.0 Cooperating Agency

None.

S-7.0 Purpose and Need for Action

The purpose of the proposed Ashley Valley Watershed Flood & Irrigation Project (Proposed Project) is to improve agricultural water management (i.e., irrigation modernization), improve existing recreational infrastructure (i.e., Kids Canal) for Vernal City, Naples, and surrounding portions of Uintah County immediately outside those incorporated towns, and provide flood damage prevention and reduction. The Proposed Project is needed to address water loss from Ashley Central Canal by piping the canal to conserve water lost to seepage, evaporation, and inefficient irrigation delivery systems, and maintain the existing flood control benefits of the Ashley Central Canal, as well as improve recreational infrastructure in the project area. The Proposed Project is also needed to prevent runoff, erosion, and sediment damage in the areas downstream of the Coal Mine and Yellow Hills Sub-basins.

S-8.0 Description of the Preferred Alternative

The Preferred Alternative would improve irrigation water delivery and efficiency, conserve water, improve recreation infrastructure and establish flood protection. Project measures include piping, pressurizing, and regrading the Ashley Central Canal; reconstructing the Thornburg Diversion; replacing the 38 existing turnout meters; installing screening structures and an inlet control structure; improving the Kids Canal recreational resource, which includes an improved asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables, as well as securing water shares to supply water to the approximate 0.5-mile canal section, and installing a turnout for water delivery to the canal section; and, constructing two detention basins.

S-9.0 Resource Information

Table S-1 lists the relevant resource information for the Coal Mine Sub-basin, the Yellow Hills Sub-basin, and the Ashley Central Canal.

Table S - 1. Existing Resource Information

Resource	Description
Latitude/Longitude	Ashley Central Canal: 40.45535°, -109.5571° Coal Mine Detention Basin: 40.4789°, -109.6078° Yellow Hills Detention Basin: 40.46273°, -109.6125°
Hydrologic Unit Number - Hydrologic Unit Code (HUC)	HUC 14060010 (Lower Green-Diamond Sub-basin) HUC 140600100902 (Coal Mine Basin-Ashley Creek) HUC 140600100903 (City of Vernal-Ashley Creek)
Climate***	Average: 46.5ºF Highs: 89.5ºF Lows: 7.9ºF
Topography	Natural hills with sagebrush, mountains with forests, pastures, and farmlands.
Annual Precipitation/Snowfall***	4.9 inches / 18.8 inches
Watershed Area	HUC 140600100902 (21,580 acres) HUC 140600100903 (24,327 acres) Combined area: 45,907 acres
Land Uses	Residential / Mobile home (20,132.0 acres) Agricultural (7,088.5 acres) Undeveloped (6,089.0 acres) Commercial (2,496.4 acres) Industrial (1,045.4 acres) Recreation (447.4 acres) School (134.1 acres) Religious / Church (22.5 acres) No data (7,641.7 acres)
Land Ownership	Private (65%), State (10.8%), Federal (24.2%)
Population (Uintah County) *	32,588
Demographics (Uintah County) *	White: 60.4% Hispanic or Latino: 18.3% Asian: 5.9% Two or More Races: 2.7% Native Hawaiian and Other Pacific Islanders: 0.2% American Indian and Native Alaskan: 1.3% African American: 13.4%
Farms Present (Uintah County) **	2,228
Land in Farms (Uintah County) **	1,824,700 acres
Average Farm Size (Uintah County) **	35 acres

**Based on 2010 U.S. Census Bureau Census Data (Census 2010).*
***Based on 2017 USDA-NRCS Census of Agriculture (USDA 2017).*
****Based on 2020 climate data (NOAA Regional Climate Centers 2021).*

S-10.0 Alternative Plans Considered

Alternatives that were considered in this Final Plan-EA include the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3 (Preferred Alternative).

- Under the No Action Alternative, the Ashley Central Canal would not be piped and pressurized, and the facility would continue to operate as an open canal delivery system without the benefits of enclosure. The Kids Canal and Kids Canal Parkway would remain in their existing condition and the Coal Mine and Yellow Hills Detention Basins would not be constructed. The existing infrastructure in the project area would remain the same. This alternative would not result in any costs.
- Alternative 1 was evaluated and revised as a result of the Draft Plan-EA public comment process. Alternative 1 would fully pipe and fully pressurize Ashley Central Canal, reconstruct the Thornburg Diversion, backfill and reshape the Ashley Central Canal, replace 38 existing turnouts with new metered turnouts, install an energy dissipation structure, install two screening structures, construct a new, small inlet control structure at the McNaughten Gulch tie-in to turnout #13, construct 3 miles of a 10-foot-wide, asphalt multi-use recreation trail, and install a picnic table, benches, fencing, and a kiosk, and construct two detention basins. Alternative 1 is estimated to cost $18,961,498.
- Alternative 2 was considered during the planning phase but eliminated from detailed analysis due to the estimated cost of the alternative and associated economic impacts, the loss of pressurizing benefits to users of the upper section, and operations and maintenance. Alternative 2 would fully pipe and partially pressurize Ashley Central Canal, replace 38 existing turnouts with new metered turnouts, install two screening structures, construct a new, small inlet control structure at the McNaughten Gulch tie-in to turnout #13, construct 3 miles of a 10-foot-wide, asphalt multi-use recreation trail, and construct two detention basins. Alternative 2 is estimated to cost $20,098,841.
- Alternative 3 would fully pipe and fully pressurize Ashley Central Canal, reconstruct the Thornburg Diversion, backfill and reshape the Ashley Central Canal, replace 38 existing turnouts with new metered turnouts, install an energy dissipation structure, install two screening structures (one at the Thornburg Diversion and one at the entrance of the Steinaker Service Canal into the Ashley Central Canal), and construct a new, small inlet control structure at the McNaughten Gulch tie-in to turnout #13. Alternative 3 would shift the alignment of the pipe along the Kids Canal portion of Ashley Central to the west and leave the previously unlined portion of the canal in its existing condition. Trees along the west bank of the canal would be protected, whenever feasible and the majority, if not all of trees along the east bank would be preserved. The Kids Canal Parkway would be improved with an asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables. Alternative 3 would also construct two detention basins. Alternative 3 is the locally preferred, National Economic Development Alternative, and the Preferred Alternative. Alternative 3 is estimated to cost $19,601,669.

S-11.0 Project Costs and Funding Source

A breakdown of the estimated project cost for the Preferred Alternative is summarized in Table S-2. NRCS design engineering, construction management, and NRCS incurred administration costs are not cost-shared by the sponsor. Any costs incurred for administration by the sponsor would not be cost-shared by NRCS.

Table S - 2. Estimated Project Costs
(Dollars) 1/

Table S-2. Item	Public Law 83-566 Funding 2/		Other Funds		Total	
Construction	$13,430,233	80%	$3,332,628	20%	$16,762,861	85.5%
Engineering & Design	$1,944,752	100%	$0	0%	$1,944,752	9.9%
Real Property Rights	$0	0%	$254,000	100%	$254,000	1.3%
Permits	$0	0%	$45,000	100%	$45,000	0.2%
Project Admin	$583,056	98%	$12,000	2%	$595,056	3.0%
Total	**$15,958,041**	**82%**	**$3,643,628**	**18%**	**$19,601,669**	**100%**

1/ Price base: 2021. Prepared December 2022.
2/ All works of improvement would be on non-federal land.

S-12.0 Project Benefits

Several benefits are anticipated to result from the implementation of the Preferred Alternative, such as enhanced water efficiency and profitability, water conservation, preservation and improvement of recreation opportunities, and improved public health and safety and flood protection. Piping and pressurizing Ashley Central Canal is projected to conserve 4,812.7 acre-feet of water annually and encourage more efficient irrigation methods; ultimately, the results from implementation of the Preferred Alternative would improve water quality and quantity, reduce flooding in the project area, improve public health and safety, and enhance farmer profitability. The preservation and improvement of the Kids Canal Parkway path and canal water feature would also benefit residents by maintaining an existing, culturally significant recreation opportunity. The Preferred Alternative would provide flood damage prevention and reduction for Uintah County and Vernal City by preventing runoff, erosion, and sediment damage in the areas downstream of the Coal Mine and Yellow Hills Sub-basins during large storm events. The Preferred Alternative would have 827 direct beneficiaries (including 489 shareholders). The specific monetary value of damage reduction benefits is described in Table S-3. During a 10-year storm event, flood models show approximately 233 structures, 88 roads/minor highways, and over 334 acres of agricultural land would experience flooding under the existing conditions. In the event of a 10-year storm event, the Preferred Alternative would protect 228 structures (mobile homes, homes, commercial buildings, schools, or businesses), 80 public roadways/minor highways, and 303 acres of agricultural land located within the downstream areas. Flood modeling shows that approximately 737 structures, 173 roads/minor highways, and over 763 acres of agricultural land would experience flooding under a 500-year event under existing conditions. In the event of a 500-year storm event, approximately 630 structures would experience flooding under the Preferred Alternative, which is 107 fewer structures than existing conditions. The agricultural, recreation, and flood control benefits are illustrated in Map 3 in Appendix B.

Table S - 3. Floodwater Damage Reduction Benefits
(Dollars) 1/

Item	Estimated Average Annual Damage 2/		
	Without Project (No Action Alternative)	**With Project (Preferred Alternative)**	**Damage Reduction Benefit**
Residential	$1,454,300	$216,500	$1,237,800
Commercial	$1,448,700	$207,600	$1,241,100
Other	$3,500	-	$3,500
Total	**$2,906,500**	**$424,100**	**$2,482,400**

1/ Price base: 2019. Calculated using FY 2020 Water Resources Discount Rate (2.75%), using 100-year evaluation period and 103-year period of analysis. Prepared November 2021.
2/ All flood damage is agriculture-related. Agriculture-related damages include damages to rural communities

S-13.0 Net Economic Benefits

The estimated annual project economic benefits for the Preferred Alternative are summarized in Table S-4. The Preferred Alternative is also determined to be the National Economic Development Alternative, per sections 505.2 and 505.35.B (1) (iv) of the National Watershed Program Manual.

Table S - 4. Comparison of Annual National Economic Development Benefits and Costs
(Dollars) 1/

Project Measure	Average Annual Costs 2/	Floodwater Damage Reduction Benefit 3/	Recreation Benefit	Ag. Water Mgmt. Benefit	Total Annual Benefits	Benefit Cost Ratio	Net Annual Economic Benefit
Agricultural Water Mgmt.	$501,700	-	-	$599,200	$599,200	1.2	$97,500
Recreation	$32,300	-	$59,700	-	$59,700	1.8	$27,400
Flood Control	$140,900	$2,482,400	-	-	$2,482,400	17.6	$2,341,500
Total	**$674,900**	**$2,482,400**	**$59,700**	**$599,200**	**$3,141,300**	**4.7**	**$2,466,400**

1/Price base 2019. Calculated using FY 2020 Water Resources Discount Rate (2.75%), 100-year evaluation period and 103-year period of analysis. Prepared December 2022.
2/From Table 6-4.
3/From Table 6-5.

S-14.0 Funding Schedule

Funding Schedule (budget year +5): $19,601,669

- Federal Funds: $15,958,041
- Non-Federal funds: $3,643,628

S-15.0 Period of Analysis

The period of analysis for all alternatives is 103 years, accounting for a 100-year project life and 3-year installation period.

S-16.0 Project Life

The life of the Preferred Alternative is estimated for 100 years.

S-17.0 Environmental Impacts

Table S-5 lists the resources of concern and impacts associated with the Preferred Alternative. Resources that would not be impacted by the Preferred Alternative are not listed in this table.

Table S - 5. Summary of Resource Concerns and Impacts

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
Soils & Geology		
Upland Erosion & Sedimentation	Soil disturbance from Preferred Alternative actions. The detention basins must provide adequate sediment capacity in the event of a major flood incident.	The Preferred Alternative would construct two detention basins with the capacity to handle a 10-year flood event. Under the Preferred Alternative, soil would be excavated for the construction of the detention basins. Spoils from the excavation of the detention basins would be utilized on site to grade and contour the basins or would be removed by a qualified contractor to a local, authorized materials pit. Best management practices, such as Temporary Erosion Controls, would be implemented during and post-construction to prevent erosion. Future erosion would be reduced by detaining sediment and floodwaters in the detention basins.
Water Resources		
Surface & Groundwater Quantity & Quality	Preferred Alternative actions occur within and adjacent to potential jurisdictional waters.	The Preferred Alternative may temporarily impact surface water quality during construction. Best management practices would be implemented to minimize and avoid surface and groundwater quality impacts.

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
		The Preferred Alternative is projected to conserve approximately 4,812.7 acre-feet of irrigation water annually. Canal seepage and flood irrigation methods likely contribute to groundwater recharge in the project area through deep percolation, though the extent to which seepage influences groundwater recharge is unknown because there is no current, available data evaluating direct groundwater recharge sources and volumes. **Note:** *Given public concern about the potential loss of the Kids Canal section, and the need to sustain trees along Kids Canal, under the cultural resource mitigation for the Preferred Alternative, supplemental water shares would be purchased and diverted into the Kids Canal.* Uintah County golf course water is currently delivered through the existing turnout near 500 S. This water typically fluctuates between 1 to 2 cfs throughout the irrigation season. In addition to the golf course water, Uintah County has agreed to purchase additional water equivalent to 0.5 cfs for the duration of the irrigation season. Purchase of fifteen primary shares of Ashley Central Canal water has been established and allocated toward the Kids Canal. The Uintah County Special Services District #1 meeting minutes, and documentation from ACIC for the primary water shares are included in Appendix E. Supplemental water would be introduced back into Kids Canal by modifying an existing user turnout near the upper end of Kids Canal to allow water to be turned into the Kids Canal section. This turnout would include a valve and meter. At the end of the Kids Canal, the supplemental water would flow into the Uintah County pipe inlet. Water would be collected in a box and would flow into a new non-pressurized pipe to an existing Ashley Central Canal user turnout near 500 S where it would be delivered to existing shareholders on the canal. A Flow Measurement Study for the Kids Canal was conducted in August 2022 to determine the amount of water required to sustain the preserved trees and provide enough flow to account for seepage. The Flow Measurement Study demonstrated that 1.75 cfs through Kids Canal would be required to sustain the trees, to carry water to the lowest portion of Kids Canal, and to provide flow for passive recreation purposes (Appendix E).

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
		The Preferred Alternative is anticipated to reduce degradation of 303(d) listed streams by facilitating the change from flood irrigation to sprinkler irrigation and thereby reducing or eliminating sediment and nutrient laden tailwaters to any natural drainages that might receive it. The transition to more efficient irrigation practices facilitated by the Preferred Alternative is anticipated to impact irrigation water quantity by reducing tailwater and increasing irrigation efficiency. Canals within the project area (i.e., Highline Canal, Ashley Upper Canal, Ashley Central Canal) have been intercepting surface water runoff since their construction in the 1800s. Therefore, impacts from the detention basins to natural drainages downstream of the Coal Mine and Yellow Hill sub-basins are not anticipated, as the flow patterns of natural drainages would not change from current existing conditions.
Clean Water Act / Waters of the U.S., including Wetlands	Preferred Alternative actions occur within and adjacent to potential jurisdictional waters.	The Preferred Alternative would partially fill Ashley Central Canal to cover the irrigation pipe, leaving the canal to function as a floodwater conveyance, and would replace a section of existing pipe that crosses under Ashley Creek. Per discussions with the U.S. Army Corps of Engineers, the proposed canal improvements would be exempt under Subsection 404(f)(1)(c) of the Clean Water Act. Therefore, a Section 404 permit would not be required to pipe the canal. A stream alteration permit is anticipated to be required for the canal improvements because of the proximity of the action to the Ashley Creek natural channel. Construction of the detention basins would not require a stream alteration permit or a 404 permit. Wetlands would not be impacted during construction.
Regional Water Management Plans	The Preferred Alternative would invest in water infrastructure.	The Preferred Alternative aligns with the Uintah Basin Plan's key actions to ensure a productive future for water resources. These key actions include investing in water infrastructure, improving water conservation measures, and addressing environmental, recreational, and other needs.

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
Floodplain Management	Preferred Alternative actions occur within 100-year floodplain. Detention basins would minimize flood risks.	Portions of the Preferred Alternative would occur in areas designated 100-year floodplain. The detention basins would decrease the risk of flooding in the event of a 10-year storm or larger storm event. Ashley Central Canal would be designed to handle a 100-year storm event. The Preferred Alternative would provide flood prevention and flood damage reduction from runoff, erosion, and sediment delivery to areas downstream of Coal Mine and Yellow Hills Sub-basins during large storm events. Maintaining the Ashley Central Canal as a flood control facility would maintain the existing flood attenuation benefit it provides. The proposed detention basins would not divert floodwaters out of their respective historical drainages, but rather reduce peak flood flows from Coal Mine and Yellow Hills drainages. Highline and Ashley Upper Canals do not connect to Ashley Central Canal nor Ashley Creek. Highline and Ashley Upper Canal have a diffuse outlet in the Ashley Valley, near the base of Asphalt Ridge, approximately 3 miles south of the Ashley Central Canal terminus. For storm events that exceed the capacity of the basins and Highline and Ashley Upper Canals, floodwaters would spread diffusely over the floodplain below Coal Mine and Yellow Hills drainages. In that scenario, floodwaters could reach Ashley Creek. Under normal conditions, tailwater from the Highline and Ashley Upper Canals is conveyed through a web of natural channels at their outlet that drain toward the Green River. As such, the Preferred Alternative reduce flood risk, but would not induce flooding in the project area. No increased flood hazard or other adverse effect to the existing natural and beneficial values of the floodplain or lands adjacent to or downstream is anticipated.
Air Quality		
Clean Air Act / National Ambient Air Quality Standards	Temporary air emissions from construction activities.	The Preferred Alternative would cause temporary, localized increases in emissions from construction equipment. With the implementation of best management practices, construction activities are not anticipated to violate air quality standards.
Climate & Greenhouse Gases	Temporary air emissions from construction equipment.	The Preferred Alternative would cause temporary increases in greenhouse gas emissions from construction equipment. With the implementation

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
		of best management practices, construction activities are not anticipated to violate air quality standards.
Plants		
Special Status Plant Species	Potential disturbance to federally-listed plant species and habitat based on U.S. Fish and Wildlife Service guidance.	The Preferred Alternative resulted in A May Affect Not Likely to Adversely Affect determination for the Ute ladies'-tresses (*Spiranthes diluvialis)*. Best management practices and conservation measures utilized by the project and provided by the U.S. Fish and Wildlife Service would be implemented to avoid impacts to special status plant species and suitable habitat.
Noxious Weeds & Invasive Plants	Increased potential for introduction of noxious weeds and invasive plants.	Construction best management practices would be implemented to minimize and prevent the introduction and establishment of noxious weeds and invasive plant species.
Riparian Areas	Preferred Alternative activities would occur in or near riparian areas.	Currently, the Kids Canal section of Ashley Central Canal is open with significant tree coverage sustained by canal seepage. The pipeline construction and placement for most of the 9.6 miles of the Ashley Central Canal would be designed for placement in the east bank of the canal. However, most of the trees along Kids Canal are growing on the east bank of the canal. Under Alternative 3, the proposed design has been modified through this section to install the pipeline in the west bank of the canal adjacent to 1500 West. Trees present along the west bank would be protected, whenever feasible. The majority, if not all, of the trees on the east bank would be preserved. Less than a third of the trees on the west bank are anticipated to survive construction, however the majority of those that can be preserved would be on the lower section near Main Street. The design rendering for Kids Canal is included in Appendix B. Given public concern about the potential loss of the Kids Canal section, and the need to sustain trees along Kids Canal, supplemental water shares would be purchased and diverted into the Kids Canal from the Uintah County Golf Course and Ashley Central Canal, which would serve as part of the cultural resource mitigation for the Preferred Alternative. Fifteen primary shares of Ashley Central Canal water have already been purchased and allocated toward the Kids Canal. A Flow Measurement Study for the Kids Canal was conducted in August 2022 to determine the amount of water required to sustain

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
		the preserved trees and provide enough flow to account for seepage. The Flow Measurement Study demonstrated that 1.75 cfs through Kids Canal would be required to sustain the trees, to carry water to the lowest portion of Kids Canal, and to provide flow for passive recreation purposes. Although studies demonstrate that the proposed supplemental water shares should be enough to support the trees, additional water may be necessary depending on the water year (Appendix E). The riparian area associated with Ashley Central Canal would be temporarily disturbed during construction; construction practices may remove vegetation in riparian areas. Disturbed areas would be reseeded and restored to pre-construction conditions. Mature trees and shrubs would be removed during construction to allow for efficient pipe installation. The loss of hydrology from piping Ashley Central Canal would result in the permanent removal of riparian vegetation within the canal and at the immediate canal edge. Under existing conditions, the open, unlined canal has an average of 25 feet of riparian vegetation established across its prism at the canal edges along its entire length. Once piped, approximately 28.3 acres of seepage induced riparian vegetation would be lost. Supplemental water would be provided by the ACIC and the Uintah County Golf Course to maintain existing flows in the Kids Canal and support the trees along the Kids Canal section. The Preferred Alternative would protect 1.2 acres of tree cover on the east side of the Kids Canal portion of Ashley Central Canal. The proposed supplemental water shares should be enough to support the trees, however additional water may be necessary depending on the water year. No loss of vegetation outside the canal prism, nor loss of vegetation supported by irrigation water is anticipated. Ultimately, the Preferred Alternative would maintain or improve water quality, water quantity, and fish and wildlife benefits provided by natural riparian areas in the Watershed by reducing flood impacts and sediment load by the construction of the detention basins.
Animals		
Wildlife & Wildlife Habitat	Preferred Alternative activities would impact	Piping the Ashley Central Canal is anticipated to permanently remove a source of drinking water for

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
	wildlife and adjacent wildlife habitat in the project area.	wildlife, except along the Kids Canal. The Preferred Alternative would permanently remove trees and shrubs from the riparian edge associated with the un-piped portion of Ashley Central Canal. However, vegetation along the east side and portions of the west side of the Kids Canal would be protected. Hydrophytic vegetation associated with the canal would likely be permanently lost due to the loss of hydrology within the canal, which may permanently remove nesting, foraging, and breeding habitat for waterfowl species and small mammals. Construction practices would both temporarily and permanently disturb wildlife and wildlife habitat in the project area. Temporarily disturbed areas would be restored following the completion of construction. An incidental nest survey would be completed prior to vegetation removal. Wildlife may be temporarily impacted during construction due to noise. Based on comments received from the Public Lands Policy Coordinating Office in collaboration with Utah Division of Wildlife Resources, and that the Coal Hill detention basin is in crucial winter mule deer habitat, no construction activities at the Coal Hill detention basin may occur from December 1 – April 15.
Special Status Animal Species	Potential disturbance to federally-listed species and habitat.	The Biological Assessment identified a No Effect determination for federally-listed animal species and state sensitive species.
Migratory Birds / Bald and Golden Eagles	Potential disturbance to migratory birds and protected raptors in the project area.	Except for the Kids Canal portion of Ashley Central Canal, the Preferred Alternative would permanently remove an open water source for vegetation along the canal corridor, which would likely result in the loss of hydrophytic vegetation in the canal prism, including trees, that may be used by migratory birds. Construction of the Preferred Alternative may permanently remove trees and shrubs from the riparian edge along Ashley Central Canal. An incidental nest survey would be completed prior to vegetation removal to help minimize or avoid potential impacts to nesting or breeding birds, if present. If any active migratory bird nests are observed, the Natural Resources Conservation Service Biologist would be contacted, and construction would pause to determine the appropriate course of action.

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
Human		
Socioeconomics	Socioeconomic impacts to the population in the project area.	The Preferred Alternative is anticipated to result in an overall $2,466,400 net annual economic benefit; the majority of economic benefits are derived from the proposed flood control measures. The Preferred Alternative is anticipated to have a beneficial impact on socioeconomics by conserving an estimated 4,812.7 acre-feet of water per year, preventing flood damage and resulting in approximately $2,482,400 in floodwater damage reduction savings, improving agricultural profitability, decreasing operation and maintenance costs, and temporarily creating jobs within the project area during construction.
Environmental Justice & Civil Rights	Protected populations are present within the project area.	Although there are residents in the project area that qualify for environmental justice protections (i.e., environmental justice populations), the communities in which the Proposed Project occurs do not qualify as environmental justice communities (i.e., overburdened communities). No long-term adverse effects on environmental justice communities are anticipated because no long-term adverse environmental or human health effects are anticipated to occur as a result of implementing the Preferred Alternative. The Preferred Alternative meets the provisions of Executive Order 12898, as it is supported by Title VI of the Civil Rights Act.
Cultural, Historic, & Paleontological Resources	Potential for historic and cultural resources in the area of potential effect.	Based on the Cultural Resources Report that was prepared for the project area, the NRCS determined that four National Register of Historic Places eligible sites are present in the project area. The Preferred Alternative would have no adverse effect on three of the four National Register of Historic Places eligible sites (i.e., 42UN2676/Highline Canal, 42UN2680/Ashley Upper Canal, and 42UN5471/Steinaker Service Canal). The Preferred Alternative would have an adverse effect on Ashley Central Canal, the National Register of Historic Places eligible site (42UN5195). Ashley Central Canal was key to the settlement of Vernal and the irrigation history of Ashley Valley. As a result, Ashley Central Canal is eligible for the National Register under Criterion A. Furthermore, Ashley Central Canal is eligible for the National Register under Criterion B due to being associated with Sterling Driggs Colton, who was noted for his role in the canal's development, and as the first elected sheriff. Ashley Central

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
		Canal was nominated for the National Register in 1983. Section 106 consultation has been completed for the Proposed Project. The State Historic Preservation Office concurred with the eligibility and effect determinations described in the Cultural Resource Report (Appendix A). The Natural Resources Conservation Service submitted letters to the Tribes for concurrence and compliance with Section 106 requirements. The Tribes have not responded to the request for consultation. Tribal consultation letters are included in Appendix A. Given that the majority of the Ashley Central Canal will remain an open floodwater conveyance facility, thus reducing the level of adverse effects, the focus of mitigation efforts will be for the Kids Canal. In accordance with 36 CFR Part 800.6, Natural Resources Conservation Service would mitigate the adverse effects to Ashley Central Canal and Kids Canal (42UN5195) through the development of a Memorandum of Agreement between the Utah SHPO the NRCS, Uintah County, Ashley Central Irrigation Company, Special Services District #1, the Uintah County Library, and others. Mitigation stipulations include the supplemental water shares that have been and will be purchased and diverted to Kids Canal to sustain the vegetation, passive recreation opportunities, and scenic quality. In addition, an informational kiosk will be installed at the Kids Canal, and additional public outreach materials will be developed. The Memorandum of Agreement was executed pursuant to compliance with Section 106 of the National Historic Preservation Act prior to the approval of the Final EA and has been included as an Appendix. Given the Utah Department of Natural Resources paleontological file search and recommendations, the Preferred Alternative is not anticipated to uncover significant fossils and is therefore anticipated to have no impact on paleontological resources.
Hazardous Materials	Hazardous materials associated with construction (fuel, oil, etc.) would be present in the project area.	No impact. Best management practices, such as a Stormwater Pollution Prevention Plan and Spill Prevention, Control, and Countermeasure Plan, would be implemented during construction to

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
		prevent the introduction of hazardous materials into the environment.
Public Health & Safety	The Preferred Alternative would improve public health and safety in the project area.	The Preferred Alternative would improve public health and safety in the project area by providing flood damage prevention.
Recreation	The Preferred Alternative would maintain existing recreation opportunities in the project area.	The Preferred Alternative may impact dispersed public recreation opportunities in the Coal Mine and Yellow Hills Sub-basin. Under the Preferred Alternative, the pipe alignment along the Kids Canal portion of Ashley Central Canal would be shifted to the west to maintain the existing unlined canal. The Kids Canal Parkway would be improved with an asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables. As part of the cultural resource mitigation for the Preferred Alternative, supplemental water shares would be purchased and diverted to the Kids Canal by the ACIC and the Uintah County Golf Course to sustain flows in the Kids Canal and protect the open water feature that provides passive recreation opportunities to the public. A 1992 Memorandum of Agreement granted the Kids Canal Parkway, a walking path which follows Ashley Central Canal from 500 North to Main Street, to Uintah County via easement for public recreational use. The Ashley Central Canal outside the area included in the Kids Canal Parkway is not designated for recreational use, and swimming in the canal is not permitted by any entity. While the Kids Canal Parkway is a designated recreational walking path, the remaining access roads for the Ashley Central Canal provide for operations and maintenance ingress and egress, but are not designated for public access and recreation. Under the Preferred Alternative, an easement would be placed on SITLA lands and the area would be used for flood protection, however, the area would likely still be open to the public. The Preferred Alternative would impact unofficial public recreation sites with the installation of flood control structures on state land. The Preferred Alternative would provide an annual benefit of $59,700 from recreation improvements.
Land Use	Property acquisition or an easement would be required prior to construction of the detention basins. Changes	Property acquisition and an easement would be acquired prior to construction of the detention basins. The Preferred Alternative would alter the land use designations in the Coal Mine and Yellow

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
	to the existing land uses in the project area.	Hills Sub-basins from undeveloped rangeland and private land to flood protection.
Visual Resources & Scenic Beauty	Potential to cause temporary disturbance from construction equipment in the project area. Piping and filling the canal may alter visual aspects of the canal corridor.	The Preferred Alternative would result in temporary impacts to visual resources associated with construction disturbance. The Preferred Alternative would permanently remove the manmade open water feature of Ashley Central Canal by piping and contouring the canal to function as a floodwater conveyance. During the scoping process for the Proposed Project, residents expressed that they value the tranquility and beauty that the open water in the canal provide, particularly between 500 North and Main Street where the Kids Canal Parkway is located. In response to public input, permanent impacts to visual resources and scenic beauty would be minimized in the Kids Canal section by modifying the pipe alignment and avoiding trees on the east bank and protecting as many trees as possible on the west bank. Under the Preferred Alternative, Uintah County Special Services District #1 and Ashley Central Irrigation Company would provide supplemental water to the Kids Canal section to maintain the existing open water conditions, to sustain the protected trees, and to retain the existing recreation opportunities. The Preferred Alternative would result in long-term impacts on the scenic quality of the Ashley Canal prism, but there would no long-term impacts to scenic quality in the general area. There would be visual impacts to some residences located directly along the canal alignment from the removal of the open water feature, construction-related vegetation disturbance, and permanent loss of vegetation from the loss of hydrology.
Transportation & Infrastructure	The Preferred Alternative would improve canal infrastructure.	The Preferred Alternative would improve irrigation infrastructure. Construction of the Preferred Alternative would require several road crossings. Permits from Vernal City, Naples City, Uintah County, and the Utah Department of Transportation would be necessary.
Noise	Temporary construction noise impacts.	The Preferred Alternative would result in temporary, short-term noise impacts associated with construction. Best management practices would be implemented to minimize noise impacts.
Energy		
Energy	The Preferred Alternative activities would utilize	Post-construction, the Preferred Alternative likely would improve energy efficiency by reducing

Resource of Concern	Summary of Concern	Effects Summary for Preferred Alternative
	energy resources in project construction.	energy demands to move and distribute irrigation water.

S-18.0 Major Conclusions

Alternative 3, the Preferred Alternative, is the most feasible, practical, economical, and environmentally conscious alternative. This alternative is considered both the Preferred Alternative and the National Economic Development Alternative.

S-19.0 Areas of Controversy and Issues to be Resolved

Public involvement for the Proposed Project is discussed in the Public Involvement Summary (Appendix E). During the public scoping process, the primary comments included: impacts to wildlife and wildlife habitat; loss of recreational value; diminishing the rural nature of the area; minimizing public safety concerns; impacts to property values; impacts to private wells; and impacts to the historic canal. During the scoping process, a citizen's group known as the Friends of Kids Canal expressed opposition to the proposed canal piping, specifically between 500 North and Main Street, on the premise that the canal's open water feature is an important community recreational resource that should be preserved.

A 1992 Memorandum of Agreement granted the Kids Canal Parkway, a walking path which follows Ashley Central Canal from 500 North to Main Street, to Uintah County via easement for public recreational use. The Ashley Central Canal outside the area included in the Kids Canal Parkway is not designated for recreational use, and swimming in the canal is not permitted by any entity. While the Kids Canal Parkway is a designated recreational walking path, the remaining access roads for the Ashley Central Canal provide for operations and maintenance ingress and egress, but are not designated for public access and recreation.

A number of comments were received from Individual stakeholders after the scoping period closed, which warranted post-scoping stakeholder meetings. Individual stakeholder meetings were held with the Friends of Kids Canal on August 17, 2019 and October 20, 2019. The local citizen group hosted a public information booth along the existing Kids Canal Parkway on August 17, 2019. Representatives of Ashley Central Irrigation Company and the project team attended the event. Three members of the consultant team met with two group representatives on October 20, 2019. A meeting summary is included in Appendix E. An additional six emailed comments and a document with 247 signatures and comments were received from the group after the official scoping comment period closed. Topics of concern expressed by the Friends of Kids Canal included: maintaining running water in the canal for aesthetic, recreational, and biological and water resource reasons; maintaining mature trees in the riparian area; and maintaining wildlife presence and habitat.

Representatives from the Ashley Central Irrigation Company also met with McNaughten Gulch Water Users on January 8, 2020 to discuss how the Proposed Project would impact water users. All water users in attendance were from the Esquire Estates subdivision, where water from Ashley Central Canal is used in a private pressurized irrigation system. Implementation of the Proposed Project would prevent the delivery of water to Esquire Estates. To address this issue, the project team discussed a proposal to deliver McNaughten Gulch water in a separate pipe to Ashley

Central Canal water users on turnout #13. In exchange, the Esquire Estates water users would be allowed to pull water out of the new pipe, which would be managed through metering, and the McNaughten Gulch water users would pay their proportionate share of the modification costs. No disagreement with the proposal was expressed by the water users.

As part of the NEPA process, NRCS published the Draft Plan-EA for the Proposed Project for public comment on May 31, 2022. The Draft Plan-EA Open House was held on June 14, 2022 at the Uintah County Western Park Event Center in Vernal, Utah. The following categories were primary themes observed in the Draft Plan-EA comments: Purpose and Need; Canal is a Historical Resource; Flooding; Public Safety; Design; Environmental Impacts; Public Recreation; Socio-Economic; Private Property Impacts; Draft EA; NEPA Process; Easements; Debris Basins; and Water Share Donation. Comments generally stemmed around resource impacts to the Kids Canal section of Ashley Central Canal.

Based on the comments received during the June 14, 2022 meeting, a design variation was developed to address public concerns related to the Kids Canal. NRCS held a second Public Meeting on July 27, 2022 at the Uintah County Western Park Event Center in Vernal. The purpose of the Public Meeting was to follow up on the public comments that were received regarding the Kids Canal, present the Kids Canal design variation, and provide an opportunity for public comment on the design variation and overall project. Participants were invited to submit an open mic submission during the Public Meeting, and/or submit comments in writing either at the meeting or by mail or email during the public comment period. The public comment period for the Draft Plan-EA officially opened on July 13, 2022 and ended on August 12, 2022. Eighteen open mic submissions were received during the Public Meeting, and a total of three written comments were received during the comment period.

Based on comments received during the July 27th public meeting, the Draft Plan-EA was updated and published for third public comment period and a third Public Meeting was held on November 15, 2022 at the Uintah County Western Park Event Center. The third public comment period was held from November 7, 2022 to December 9, 2022. Based on coordination with community stakeholders at the November 15th Public Meeting, improvements to the Kids Canal Parkway were added to the recreation component of the project, and additional cultural resource mitigation components were discussed. An additional public comment period was held from January 18, 2023 to February 17, 2023 to provide stakeholders an opportunity to review the recreation and cultural mitigation updates in the Draft Plan-EA. Two comments were received and addressed. As part of improvements to the Kids Canal, landowner approval for any actions along the Kids Canal will be obtained prior to construction, where appropriate. The Finding of No Significant Impact was issued on May 25, 2023. The Notice of Availability for the Final Plan-EA and Finding of No Significant Impact will be published on June 7, 2023. A Scoping Report was prepared that provided a summary of the scoping process, including stakeholder comments and public meetings (Appendix E).

S-20.0 Evidence of Unusual Congressional or Local Interest

There is no evidence of unusual congressional or local interest for the proposed Ashley Valley Watershed Flood & Irrigation Project.

S-21.0 In Compliance

Is this report in compliance with executive orders, public laws, and other statutes governing the formulation of water resource projects? ___X___YES_____NO

Chapter 1 Introduction

1.1 Introduction

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Uintah County and Ashley Central Irrigation Company (ACIC) propose to use federal funds to implement the Ashley Valley Watershed Flood & Irrigation Project (Proposed Project). The Proposed Project would pipe and pressurize approximately 9.6 miles of Ashley Central Canal, reconstruct the Thornburg Diversion, replace existing turnouts with new metered turnouts, install an energy dissipation structure, install two screening structures, and construct a new inlet control structure at the McNaughten Gulch tie-in to turnout #13, and convert the remaining portions of the Ashley Central Canal into a flood conveyance facility (including piping the final 1,500 feet (ft) of the canal). Specific to the Kids Canal section, the Proposed Project would shift the pipe alignment to the west bank and keep the open canal intact to preserve and protect as many trees along this canal section as possible. The Kids Canal Parkway path would be improved with an asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables. As part of the cultural resource mitigation for the Proposed Project, an informational kiosk about Kids Canal would be constructed, supplemental water shares would be purchased and diverted to Kids Canal to sustain the vegetation, passive recreation opportunities, and scenic quality, and public outreach materials on the Kids Canal history would be produced. The Proposed Project would also construct two below-grade detention basins, through the provisions of the Watershed and Flood Prevention Operations Program (WFPO). The activities proposed by the cooperating entities would address water conservation, water delivery efficiency, recreational use, and flood control.

Under the Watershed Protection and Flood Prevention Act (WPFPA), WFPO provides for cooperation between the federal government and the states or their political subdivisions for preventing erosion, floodwater and sediment damage, and further conservation development, use and disposal of water in authorized watersheds (NRCS 2018). An approved watershed plan must be in place prior to the initiation of any solutions receiving assistance through the WFPO. The NRCS offers financial and technical assistance through this program as authorized through the WPFPA.

In accordance with the National Environmental Policy Act (NEPA), a Watershed Plan and Environmental Assessment (Plan-EA) is being prepared by NRCS for the Proposed Project. A set of alternatives were selected for the Proposed Project that will be analyzed in this Plan-EA. After analyzing the alternatives, one will be selected as the Preferred Alternative. The Plan-EA assists NRCS in determining if the selected alternative (Preferred Alternative) would have a significant impact on the quality of the environment and if the preparation of an Environmental Impact Statement (EIS) would be required.

The watershed limits evaluated in this Plan-EA have been defined as the Ashley Creek Subwatershed; the watershed limits represent the project area for the Proposed Project. The project area encompasses 45,907 acres. The Ashley Creek Subwatershed is made up of the Coal Mine Basin-Ashley Creek Subwatershed (Hydrologic Unit Code [HUC] 140600100902; 21,580 acres) and the City of Vernal-Ashley Creek Subwatershed (HUC 140600100903; 24,327 acres). The NRCS is the lead federal agency for this Proposed Project. In carrying out this role, NRCS provides financial and technical assistance to cooperating entities to protect and restore watersheds up to 250,000 acres.

This Plan-EA complies with the requirements of NEPA and its implementing regulations, which are set forth in the Council on Environmental Quality (CEQ) regulations 40 CFR Parts 1500-1508; the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (March 10, 1983) established pursuant to the Water Resources Planning Act of 1965 (Public Law [PL] 89-80), as amended by Executive Order (E.O.) 12322 (September 17, 1981), and NRCS policy and guidelines (NRCS 2010 and NRCS 2016). The format of this document follows the plan format outline that must be adhered to for all Watershed Project Plans as outlined in the NRCS National Watershed Program Manual (NWPM) Parts 500 through 506 (NRCS 2014b), and NRCS National Watershed Program Handbook (NWPH), Parts 600 through 606 (NRCS 2014a).

1.1.1 Conditions Requiring the Preparation of a Watershed Plan

USDA-NRCS evaluated the Proposed Project to receive Watershed Operations funding under the WFPO Program. It was determined that the project would be eligible to receive funding. Given there is currently no watershed plan in place for the Ashley Valley, and that the Proposed Project would address flood prevention, irrigation water delivery and efficiency issues, and recreational facilities, it was determined that a Plan-EA would be necessary for the project.

1.1.2 Decision Matrix

The NRCS must identify the federally-assisted alternative with the greatest net benefit, as applicable under the National Economic Development (NED) plan. The NRCS must also decide if the selected alternative (Preferred Alternative) would or would not constitute a major federal action significantly affecting the quality of the environment. If NRCS determines that the Preferred Alternative would not significantly affect the quality of the environment, then NRCS would prepare and sign a Finding of No Significant Impact (FONSI), and the Proposed Project may proceed. If NRCS determines that the Preferred Alternative would significantly affect the quality of the environment, then an EIS and Record of Decision (ROD) must be prepared and signed before the Proposed Project can proceed.

1.2 Purpose and Need Statement

The purpose of the Proposed Project is to provide agricultural water management (i.e., irrigation modernization), improve recreational facilities for Uintah County, Vernal City, and Naples City, and provide flood damage prevention and reduction. The Proposed Project is needed to address water loss from Ashley Central Canal by piping the canal to conserve water lost to seepage, evaporation, and inefficient irrigation delivery systems, and maintain the existing flood control benefits of the Ashley Central Canal, as well as improve recreational infrastructure in the project area. The Proposed Project is also needed to prevent runoff, erosion, and sediment damage to areas downstream of the Coal Mine and Yellow Hills Sub-basins.

Improved agricultural water management is needed to reduce water lost to seepage and evaporation, improve efficiency of irrigation delivery, improve downstream water quality, and provide an opportunity for future on-farm improvements (i.e., sprinkler irrigation). The canal was constructed in the late 1800s to deliver irrigation water to farmers and ranchers throughout the valley (U.S. Bureau of Reclamation [Reclamation] 2019). The aging canal structures require regular maintenance to maintain flow and prevent failure and unintended overtopping due to blockage. The canal is unlined and is estimated to lose approximately 4,812.7 acre-feet (ac-ft) of water annually along its length due to seepage and evaporation. This represents approximately 36% of the total annual water right; the 2017 annual diversion for Ashley Central Canal was

13,261.5 ac-ft. Canal seepage and evaporation has led to water shortages affecting the ability of farmers to grow their crops. Personal communication with Wayne Simper, President of the ACIC, indicates that seepage from the canal has impacted adjacent residential structures and precluded farming activities in other areas (Simper, personal communication 2021). Canal seepage has damaged farm structures in the project area, such as rusting metal structures and flooding corrals. Additionally, canal seepage floods natural drainages adjacent to the canal, impacting residents and agricultural facilities in the project area. Simper receives annual complaints from residents about the seepage flooding their homes and farm structures (Simper, personal communication 2021). The open canal also poses a public safety concern due to the canal traveling through heavily populated residential areas.

The Kids Canal, a 0.5-mile section of the Ashley Central Canal, is a locally valued and culturally significant recreation resource in the project area. The Kids Canal Parkway is a designated recreational walking path that follows the Kids Canal. The preservation of the Kids Canal and improvement of the Kids Canal Parkway is needed due to its local importance and cultural significance.

There is a need to detain peak runoff in the project area to protect land and community infrastructure from flood related damages. During a 10-year storm event, flood models show approximately 233 structures, 88 roads/minor highways, and over 334 acres of agricultural land would experience flooding under the existing conditions. Flood modeling shows that approximately 737 structures, 173 roads/minor highways, and over 763 acres of agricultural land would experience flooding under a 500-year event under existing conditions. There are currently no flood protection measures in place within the Coal Mine and Yellow Hills Sub-basins. Previous heavy precipitation events and flash floods have damaged residential property, agricultural lands, and community infrastructure (roads, utilities, etc.) due to debris flows, sediment deposition, and inundation (Averett, personal communication 2021). Uintah County, Vernal City and Naples City currently direct some floodwater into the Ashley Central Canal.

1.3 Scope of the Plan-EA

The scope of the Plan-EA is considered to be the range of actions, alternatives, and impacts to be considered in an EIS (40 CFR Section 1508.25). Three types of actions, three alternatives, and three types of impacts will be considered in this EA. The three types of actions include: connected actions, cumulative actions, and similar actions. Specific actions are discussed in Section 1.6 and Chapter 4. For the purpose of this EA, the alternatives analyzed include the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3 (Chapter 3). Direct, indirect, and cumulative impacts are discussed in Chapter 4.

The Proposed Project is eligible for support under the WFPO Program, which requires adequate NEPA analysis. Therefore, a scoping process was performed to identify relevant resources or environmental concerns to be analyzed in detail and to determine which, if any, could be eliminated from further analysis. Resource concerns were identified for the Proposed Project based on scoping requirements outlined in the NWPM Section 501.24B (NRCS 2014b) and from any additional concerns identified by the public, Uintah County, or agencies during the scoping meeting and/or other planning or public meetings.

A scoping meeting was held on May 23, 2019 at the Uintah County Western Park Event Center in Vernal, Utah. The meeting provided an opportunity for the public, Uintah County, and agencies to express any specific concerns related to the Proposed Project action. A total of 38 public

attendees, four project team members from J-U-B ENGINEERS, Inc. (J-U-B), two NRCS representatives, one Reclamation representative, and several project sponsor representatives attended the meeting, and 24 comments were received during the scoping period (May 9 through June 7, 2019).

During the public scoping process, the primary comment themes included: impacts to wildlife and wildlife habitat; loss of recreational value; diminishing the rural nature of the area; minimizing public safety concerns; impacts to property values; impacts to private wells; and impacts to the historic canal. During the scoping process, a citizen's group known as the Friends of Kids Canal expressed opposition to the proposed canal piping, specifically between 500 North and Main Street (location of the Kids Canal Parkway easement), on the premise that the canal's open water feature is an important community passive recreational resource that should be preserved. A 1992 Memorandum of Agreement (MOA) granted the Kids Canal Parkway, a walking path which follows Ashley Central Canal from 500 North to Main Street, to Uintah County via easement for public recreational use. The Ashley Central Canal outside the area included in the Kids Canal Parkway is not designated for recreational use, and swimming in the canal is not permitted by any entity. While the Kids Canal Parkway is a designated recreational walking path, the remaining access roads for the Ashley Central Canal provide for operations and maintenance ingress and egress, but are not designated for public access and recreation.

A number of comments were received from individual stakeholders after the scoping period closed, which warranted post-scoping stakeholder meetings. Individual stakeholder meetings were held with the Friends of Kids Canal on August 17, 2019 and October 20, 2019. The local citizen group hosted a public information booth along the existing Kids Canal Parkway on August 17, 2019. Representatives of ACIC and the project team attended the event. Three members of the consultant team met with two group representatives on October 20, 2019. A meeting summary is included in Appendix E. An additional six emailed comments and a document with 247 signatures and comments were received from the group after the official scoping comment period closed. Topics of concern expressed by the Friends of Kids Canal included: maintaining running water in the canal for aesthetic, recreational, and biological and water resource reasons; maintaining mature trees in the riparian area; and maintaining wildlife presence and habitat.

Representatives from the ACIC also met with McNaughten Gulch Water Users on January 8, 2020 to discuss how the Proposed Project would impact water users. All water users in attendance at the meeting were from the Esquire Estates subdivision, where water from Ashley Central Canal is used in a private pressurized irrigation system. Implementation of the Proposed Project would prevent the delivery of water to Esquire Estates. To address this issue, the project team discussed a proposal to deliver McNaughten Gulch water in a separate pipe to Ashley Central Canal water users on turnout #13. In exchange, the Esquire Estates water users would be allowed to pull water out of the new pipe, which would be managed through metering. The McNaughten Gulch water users would pay their proportionate share of the modification costs. No disagreement with the proposal was expressed by the water users.

As part of the NEPA process, NRCS published the Draft Plan-EA for the Proposed Project for public comment on May 31, 2022. The Draft Plan-EA Open House was held on June 14, 2022 at the Uintah County Western Park Event Center in Vernal, Utah. A total of 66 public attendees, three project team members from J-U-B and The Langdon Group (TLG), two NRCS representatives, and one project sponsor representative attended the meeting, and 44 comments were received during the scoping period (June 1 through July 1, 2022). The following categories

were primary themes observed in the Draft Plan-EA comments: Purpose and Need; Canal is a Historical Resource; Flooding; Public Safety; Design; Environmental Impacts; Public Recreation; Socio-Economic; Private Property Impacts; Draft EA; NEPA Process; Easements; Debris Basins; and Water Share Donation. Comments generally stemmed around resource impacts to the Kids Canal section of Ashley Central Canal.

Based on the comments received during the June 14, 2022 meeting, a design variation was developed to address public concerns related to the Kids Canal. NRCS held a second Public Meeting on July 27, 2022 at the Uintah County Western Park Event Center in Vernal, with 47 attendees signing in at the meeting. Five project team members from J-U-B and TLG, three NRCS representatives, and three project sponsor representatives attended the meeting. The purpose of the Public Meeting was to follow up on the public comments that were received regarding the Kids Canal, present the Kids Canal design variation, and provide an opportunity for public comment on the design variation and overall project. Participants were invited to submit an open mic submission during the Public Meeting, and/or submit comments in writing either at the meeting or by mail or email during the public comment period. The public comment period for the Draft Plan-EA officially opened on July 13, 2022 and ended on August 12, 2022. Eighteen open mic submissions were received during the Public Meeting, and a total of three written comments were received during the comment period.

Based on comments received during the July 27th public meeting, the Draft Plan-EA was updated and published for a third public comment period and a third Public Meeting was held on November 15, 2022 at the Uintah County Western Park Event Center. The third public comment period was held from November 7, 2022 to December 9, 2022. Based on coordination with community stakeholders at the November 15th Public Meeting, improvements to the Kids Canal Parkway were added to the recreation component of the project, and additional cultural resource mitigation components were discussed. An additional public comment period was held from January 18, 2023 to February 17, 2023 to provide stakeholders an opportunity to review the recreation and cultural mitigation updates in the Draft Plan-EA. Two comments were received and addressed. The Notice of Availability (NOA) for the Final Plan-EA and FONSI will be published on June 7, 2023. A Scoping Report was prepared that provided a summary of the scoping process, including stakeholder comments and public meetings (Appendix E).

A summary of resource concerns developed during the scoping process and their relevance to the Proposed Project is provided in Table 1-1. Irrelevant resource categories have been eliminated from detailed analysis. Relevant resource categories are included in detailed studies that are described in Chapter 4 of this Plan-EA.

Table 1-1. Resource Concerns Summary

Concern	Relevant to the Proposed Project?		Rationale
	Yes	No	
Soils & Geology			
Upland Erosion & Sedimentation	X		Potential for erosion and sediment transport in the watershed due to flooding. Construction activities also have the potential to temporarily increase erosion or sediment transport.

Concern	Relevant to the Proposed Project?		Rationale
	Yes	No	
Prime & Unique Farmland		X	No prime or unique farmlands, or farmlands of statewide or local importance are present.
Water Resources			
Surface & Ground Water Quality & Quantity	X		Piping and pressurizing the Ashley Central Canal would conserve water lost to seepage and allow for future on-farm improvements that would reduce agricultural runoff and improve downstream water quality. Given public concerns about the potential loss of the Kids Canal section, and the need to sustain trees along Kids Canal, supplemental water would be purchased and diverted into the Kids Canal from the Uintah County Golf Course and Ashley Central Canal as part of the cultural resource mitigation for the Proposed Project. In addition to the golf course water, Uintah County has agreed to purchase additional water equivalent to 0.5 cfs for the duration of the irrigation season. Fifteen primary shares of Ashley Central Canal water have already been purchased and allocated toward the Kids Canal. A Flow Measurement Study was completed for the Kids Canal to determine the amount of water necessary to sustain the protected vegetation, recreation, and water flows (Appendix E). Piping the Ashley Central Canal would eliminate vertical transport of salts and agricultural fertilizers through soils and surface water. Seepage and flood irrigation methods likely influences groundwater recharge in the project area through deep percolation, though the extent to which seepage influences groundwater recharge is unknown because there is no current, available data evaluating direct groundwater recharge sources and volumes.

Concern	Relevant to the Proposed Project?		Rationale
	Yes	No	
Clean Water Act & Waters of the U.S., including Wetlands	X		Ashley Central Canal is connected to a jurisdictional waterway at the diversion, Ashley Creek; however, the canal itself is not expected to be a jurisdictional water and piping the canal would be expected to fall under an agricultural exemption to the Clean Water Act (CWA). No wetlands were identified within the project area.
Regional Water Management Plans & Coastal Zone Management Areas	X		The project area is managed under the Utah State Water Plan, specifically the Uintah Basin Plan. There are no coastal zone management areas within the project area.
Floodplain Management	X		The purpose of the detention basins is to manage floodwaters coming from the Coal Mine and Yellow Hills drainages.
Wild & Scenic Rivers		X	No wild or scenic rivers are in or near the project area according to National Wild and Scenic Rivers System Map (Wild and Scenic Rivers 2014).
Sole Source Aquifer		X	No sole source aquifers are in or near the project area (U.S. Environmental Protection Agency [EPA] 2019).
Air Quality			
Clean Air Act / National Ambient Air Quality Standards	X		Construction activities would cause temporary increases in emissions, however these activities likely would be exempt from air permitting and reporting requirements because of their temporary nature. A long-term increase in emissions that would violate attainment restriction is not anticipated.
Climate & Greenhouse Gases	X		Temporary, minor increases in localized emissions during construction activities would be anticipated.
Plants			
Special Status Plant Species	X		Suitable habitat for Ute Ladies'-tresses (*Spiranthes diluvialis)*, an Endangered Species Act (ESA) and state sensitive plant species may be present along portions of the Ashley Creek adjacent to the piped portion of the Ashley Central Canal (U.S. Fish and Wildlife [USFWS] 2021.

Concern	Relevant to the Proposed Project?		Rationale
	Yes	No	
Forest Resources		X	Forested lands are not located in or near the project area.
Noxious Weeds & Invasive Plants	X		Construction disturbances increase the risk of introduction and establishment of noxious weeds and invasive plant species.
Natural Areas		X	There are no designated Natural Areas within the project area.
Riparian Areas	X		The Ashley Central Canal is an irrigation canal with a controlled water regime that supports a narrow strip of riparian vegetation along its immediate edges. The Ashley Central Canal is diverted from Ashley Creek, a natural stream. Piping the Ashley Central Canal would permanently remove a source of water for riparian vegetation, except for along Kids Canal. Riparian vegetation would be lost along all the sections of the canal, including trees and shrubs that rely on seepage water from the canal. Trees would be protected and preserved along the Kids Canal portion of Ashley Central Canal by keeping the canal prism open and providing supplemental water. There are no riparian areas with special designations located within the project area.
Animals			
Essential Fish Habitat		X	There is no essential fish habitat located in or near the project area (National Oceanic and Atmospheric Administration [NOAA] 2017).
Wildlife & Wildlife Habitat	X		Potential disturbance to wildlife and adjacent wildlife habitat is anticipated during construction. There are no State Wildlife Management Areas or Federal Wildlife Refuges in or near the project area.
Coral Reefs		X	There are no coral reefs in or near the project area.
Special Status Animal Species	X		There are six ESA-listed animal species (USFWS 2021) and one state sensitive animal species (Utah Division of Wildlife Resources [UDWR] 2020) identified as having potential to be present within, or adjacent to, the project area.

Concern	Relevant to the Proposed Project?		Rationale
	Yes	No	
Invasive Animal Species		X	No potential for introduction of invasive animal species.
Migratory Birds & Bald and Golden Eagles	X		Potential for migratory birds and eagles to be present in the project area.
Humans			
Socioeconomics	X		Project elements would reduce the risk of flood damage for the communities.
Environmental Justice & Civil Rights	X		Project elements would reduce the risk of flood damage for the communities.
Cultural, Historic, & Paleontological Resources	X		Cultural and historic resources are present in the project area. A cultural resources survey identified four sites eligible for listing on the National Register of Historic Places (NRHP). According to coordination with Utah Department of Natural Resources (DNR), no paleontological localities have been recorded in the project area and the quaternary and recent alluvial deposits in the project area have a “low to moderate potential for yielding significant fossil localities.”
Hazardous Materials	X		Mechanical equipment and associated fuels and lubricants would be stored and used on site during construction.
Public Health & Safety	X		Project elements would reduce the risk of flood damage and eliminate a source of open water in residential areas that could pose safety risks.
Recreation	X		Portions of the existing Kids Canal Parkway are located within the project area. No other designated recreation areas are located in the project area.
Land Use	X		Property acquisition and an easement would be acquired prior to construction of the detention basins.

Concern	Relevant to the Proposed Project?		Rationale
	Yes	No	
Visual Resources & Scenic Beauty	X		Temporary visual impacts associated with construction disturbance. Proposed piping of the Ashley Central Canal would alter the current manmade, open water feature, excluding the Kids Canal portion of Ashley Central Canal. Long-term impacts on the scenic quality of the Ashley Canal prism would occur, but there would no long-term impacts to scenic quality in the general area.
Parklands		X	No national or state parks are within the project area. The closest designated parkland is Steinaker State Park, approximately 3.06 miles northeast of the project area.
Transportation & Infrastructure	X		Project elements would protect existing transportation and infrastructure from future flood damage. The existing canal infrastructure would be improved.
Noise	X		Temporary construction noise would impact residential and commercial areas. The project would be implemented in compliance with all applicable noise ordinance laws.
Ecologically Critical Areas		X	No ecologically critical areas are located within the project area.
National Parks, Monuments, & Historical Sites		X	No national parks, monuments, or historical sites are in or immediately near the project area based on National Natural Landmarks Map (National Park Service [NPS] 2018) and National Parks Map (NPS 2019).
Scientific Resources		X	No known scientific resources are present within the project area.
Energy			
Energy	X		The project would facilitate the transition to an energy-efficient irrigation system. No energy generation is included in the Proposed Project.

In accordance with CEQ regulations 1500.1(b), 1500.2(b), and other sections, the USDA-NRCS eliminated the following resource categories from further analysis because the Proposed Project would result in negligible or no impact to these resource areas. Other than the information contained in Table 1-1, this Final Plan-EA provides no additional information for the resource issues eliminated from consideration, which are listed below:

- Coastal Zone Management Areas
- Wild & Scenic Rivers
- Sole Source Aquifer
- Forest Resources
- Essential Fish Habitat
- Coral Reefs
- Invasive Species – Animals
- Ecologically Critical Areas
- National Parks, Monuments, & Historical Sites
- Scientific Resources

This Plan-EA has been organized into the following chapters:

- Summary: Office of Management and Budget Fact Sheet – This chapter presents a summary of the entire document and the Proposed Project.
- Chapter 1: Introduction – This chapter describes the purpose and need for the Proposed Project and background information pertaining to the Proposed Project.
- Chapter 2: Affected Environment – This chapter contains the past and current conditions of the project area and describes relevant environmental resources that would be affected by the alternatives.
- Chapter 3: Alternatives – This chapter provides a summary of the alternatives considered for detailed study, as well as alternatives considered for the Proposed Project that were eliminated from detailed study. It also describes the Proposed Project action and provides a resource impact comparison of all considered alternatives.
- Chapter 4: Environmental Consequences – This chapter describes the analysis of impacts to resources from each of the alternatives considered for detailed study. These impacts include direct, indirect, and cumulative impacts.
- Chapter 5: Consultation, Coordination, and Public Participation – This chapter summarizes steps taken to involve agencies, tribes, and the public in the Proposed Project. It also summarizes the anticipated permits and approvals required prior to the start of construction that should be obtained outside of the NEPA process.
- Chapter 6: Preferred Alternative – This chapter describes the Preferred Alternative for the Proposed Project and presents the economic evaluation.
- Chapter 7: References – This chapter lists the references used in support of the information presented in this document.
- Chapter 8: List of Preparers – This chapter contains a list of the document preparers, their respective agency or company, and their associated qualifications.
- Chapter 9: Distribution List – This chapter lists the government entities that the local notice of availability for this document was distributed to for comment.
- Chapter 10: Acronyms, Abbreviations, and Short Forms – This chapter defines the acronyms, abbreviations, and short forms used in this report.
- Appendices – The Appendices provide supporting documentation for the information presented in the EA.

1.4 Project Background

Uintah County commissioned the Ashley Valley Flood Control Study & Cost Benefit Analysis in 2017 (Appendix E; Jones & DeMille Engineering and Sunrise Engineering 2017) to evaluate potential flood control measures for the Ashley Valley. The study included a cost-benefit analysis of flood control alternatives and prioritized project implementation throughout the valley. The Proposed Project described in this Plan-EA is one of several projects currently being implemented or planned for implementation throughout the valley that would address flood protection and improve water quality and irrigation reliability for agricultural producers.

Several storms of varied sizes have been observed in the past 10 years in the project area. Most notable are the 2016, 2018, and 2021 storm events that caused localized flooding in the project area. These storm events have highlighted deficiencies in flood protection by causing severe damage to developed areas and agricultural lands throughout the County. The Coal Mine and Yellow Hills Sub-basins are the largest sub-basins above populated portions of Ashley Valley. In September 2016, a flash flood event in the Yellow Hills Sub-basin overwhelmed a natural channel and overtopped Highline Canal in three known locations. The storm conveyed water, debris, and mud through a 40-home subdivision on the west side of the Highline Canal and impacted businesses, agricultural land, and State Route 121. The majority of the damage was limited to mud and water in the basements and crawl spaces of the homes. The 2018 storm was the smallest of the three recent storm events and resulted in six mud-damaged homes. The most recent 2021 storm event was the most severe, damaging between 60 and 80 homes. Floodwaters from the storm flooded basements, garages, crawl spaces, and ground level floors of homes, in addition to damaging landscaping and fences around many homes. The Highline Canal overtopped in several locations, including one location that led to a blowout of the canal bank, resulting in significant flooding of one agricultural field. Unofficial precipitation estimates from property owners in the area indicate rainfall corresponding to a 100-year, or greater, storm event. Modeling of a 100-year storm without the proposed detention basins roughly correlates with the damage reported in the area (Averett, personal communication, 2021).

Future storm events have the potential to overwhelm existing irrigation canals that meander through populated areas of the valley, flooding downstream areas and compromising the structural integrity of the canals creating further flood damage potential. To reduce flood damage, the Ashley Valley Flood Control Study & Cost Benefit Analysis identified the need for detention basins in the Coal Mine and Yellow Hills Sub-basins that would contain sediment and debris and attenuate peak runoff resulting from storm events. According to the 2017 Flood Control Study & Cost Benefit Analysis, “proactively protecting homes and property by preserving natural drainages and requiring drainage improvements to be incorporated into development will go a long way in preventing flood control issues and transfers costs to development and not the County” (Jones & DeMille Engineering and Sunrise Engineering 2017; Appendix E). The Ashley Central Canal receives floodwater from approximately 160 acres along most of its length, which drain directly into the canal. Uintah County, Vernal and Naples Cities have relied on the canal to provide this flood protection since it was first constructed.

The Ashley Central Canal is an open, unlined canal that was constructed in the late 1800s for agricultural irrigation water delivery and remains in use today for irrigation. The canal is sourced from Ashley Creek and also receives water from the Steinaker Reservoir via the Steinaker Service Canal at two locations along its length. The Ashley Central Canal is approximately 9.6 miles long and delivers water at 38 turnouts, which are connected to irrigated lands within Uintah County

(Appendix B. Map 2). The canal currently loses approximately 4,812.7 ac-ft of water annually to evaporation and seepage. Due to these significant water losses as well as impacts from drought years, many customers have not been receiving their full water allotments throughout the growing season. Personal communication with Wayne Simper, President of the ACIC, indicates that seepage from the canal has impacted adjacent residential structures and precluded farming activities in other areas (Simper, personal communication 2021). Canal seepage has damaged farm structures in the project area, such as rusting metal structures and flooding corrals. Additionally, canal seepage floods natural drainages adjacent to the canal, impacting residents and agricultural facilities in the project area. Simper receives annual complaints from residents about the seepage flooding their homes and farm structures (Simper, personal communication 2021).

Because the Ashley Central Canal is open and unpressurized, agricultural producers elect to flood irrigate rather than irrigate with sprinklers, which would require additional cost to install and maintain a pressurized system. Flood irrigation runoff impacts Ashley Creek due to sedimentation and nutrient loading. The Utah Department of Environmental Quality (UDEQ) Division of Water Quality (DWQ) has listed Lower Ashley Creek on the State's 303(d) list of impaired waters from the point where tailwater from the Ashley Central Canal returns to the creek (in years when enough water is available for tailwater water to return to the natural channel) to its confluence with the Green River, which is approximately 8 miles downstream (DWQ 2002). This section of the creek does not meet criteria for warm water fishery beneficial use due to elevated concentrations of Selenium (Se), nor for agricultural beneficial use due to elevated concentrations of Total Dissolved Solids (TDS). Other than seepage from the sewage lagoons, the primary anthropogenic source of Se and TDS is from irrigation return flows from flood irrigation and from outflows at the ends of open canals, including the Ashley Central Canal. According to the DWQ, Ashley Creek contributes approximately 1,637 pounds of Se and 36,247 tons of TDS to the Colorado River annually (DWQ 2002). Loading of Se and TDS has been reduced in the watershed through the implementation of salinity controls, such as transitioning from flood irrigation to sprinkler irrigation, and preventing deep percolation by lining or piping irrigation ditches (DWQ 2002).

Ashley Central Canal poses a public safety concern. Although Ashley Central Canal is not designated for recreational use, and swimming in the canal is not permitted by any entity, in 1986, a teenager drowned in the canal while swimming and became entrapped in subsurface turbulence. Having an open canal flowing through populated areas of the Ashley Valley causes concern for some residents and community leaders, particularly during periods of high flows.

Agriculture makes up a significant portion of the economy in Uintah County. The Ashley Central Canal is no longer effective at meeting the needs for agricultural producers due to seepage losses, flooding, public safety concerns, and maintenance needs and costs. In order to sustain the agricultural economy in Ashley Valley, irrigators need a reliable, efficient water delivery system. Piping the canal would improve water availability and reliability. Pressurizing the system would create opportunities for future on-farm improvements that would allow irrigators to transition from flood to sprinkler irrigation. This transition would further improve water conservation efforts and enhance downstream water quality by reducing agricultural runoff.

1.5 Project Area & Existing Conditions

According to the U.S. Geological Survey (USGS) Watershed Boundary Dataset (WBD), the project area is located within the Upper Colorado Region, specifically the Lower Green-Diamond Sub-basin (HUC 14060010) of the Ashley Valley within the Lower Green Basin (USGS 2021).

The Lower Green-Diamond Sub-basin is spread across Uintah County and encompasses the cities of Vernal and Naples, approximately 125 miles east of Salt Lake City and 25 miles west of the Utah-Colorado border. The project area is contained within Sections 7, 8, 16, 18, 21, 22, 27, 28, 34, and 35, Township 4 South, Range 21 East; Sections 1 and 2, Township 5 South, Range 21 East; and Sections 5 and 6, Township 5 South, Range 22 East Salt Lake Base and Meridian. The project area is situated within two subwatersheds – Coal Mine Basin-Ashley Creek Subwatershed (HUC 140600100902) and City of Vernal-Ashley Creek Subwatershed (HUC 140600100903). These watersheds cover a combined area of approximately 45,907 acres (USGS 2021). The watershed boundary associated with this Plan-EA is shown in Figure 1-1. Project Vicinity Map and Watershed Boundary and Map 1 included in Appendix B.

The Coal Mine and Yellow Hills Sub-basins are located on the northwest side of the Ashley Valley approximately 4.3 miles west of Vernal in the foothills of Little Mountain. The Highline Canal was completed in 1916 and the Ashley Upper Canal was constructed in 1880. Both canals are oriented perpendicular to the Coal Mine and Yellow Hills Basin drainages. From the date of their construction, both canals have intercepted floodwaters from these drainages. The Highline and Ashley Upper Canals were sized to handle the 10-year, 24-hour storm event. When storm intensities exceed the capacity of Highline Canal, the canal overtops, and floodwaters are intercepted by the Ashley Upper Canal. If floodwaters exceed the capacity of the Ashley Upper Canal, waters would continue in their historic drainages towards their outlet to the southeast. The Highline and Ashley Upper Canals do not connect to Ashley Central Canal nor Ashley Creek. Highline and Ashley Upper Canals have a diffuse outlet in the Ashley Valley, near the base of Asphalt Ridge, approximately 3 miles south of the Ashley Central Canal terminus. For storm events that exceed the capacity of the basins and Highline and Ashley Upper Canals, floodwaters would spread diffusely over the floodplain below Coal Mine and Yellow Hills drainages. In that scenario, floodwaters could reach Ashley Creek. Under normal conditions, tailwater from the Highline and Ashley Upper Canals is conveyed through a web of natural channels at their outlet that drain toward the Green River. As discussed in Section 1.6 below, two projects are currently underway in relation to Highline Canal and Ashley Upper Canal. The improvements to Highline and Ashley Upper Canals will be built and in place at the time of construction for the Proposed Project. Therefore, the improved Highline and Ashley Upper Canals are considered an existing condition for the Proposed Project analysis (Appendix E. Flood Control Projects Explanatory Memo).

The proposed locations for the detention basins are both at approximately 5,740 ft above mean sea level (AMSL). The areas for the proposed detention basins are located in undeveloped areas dominated by a desert scrub landscape. Vegetation at the two detention basin sites was similar, and dominant species are described in Section 2.4. The proposed location for the detention basin in the Coal Mine Sub-basin is located on state-owned land administered by the Utah School and Institutional Trust Lands Administration (SITLA). The proposed location of the detention basin in the Yellow Hills Sub-basin is located on private property. Property acquisition from private landowners and an easement with SITLA would be required prior to construction of the detention basins.

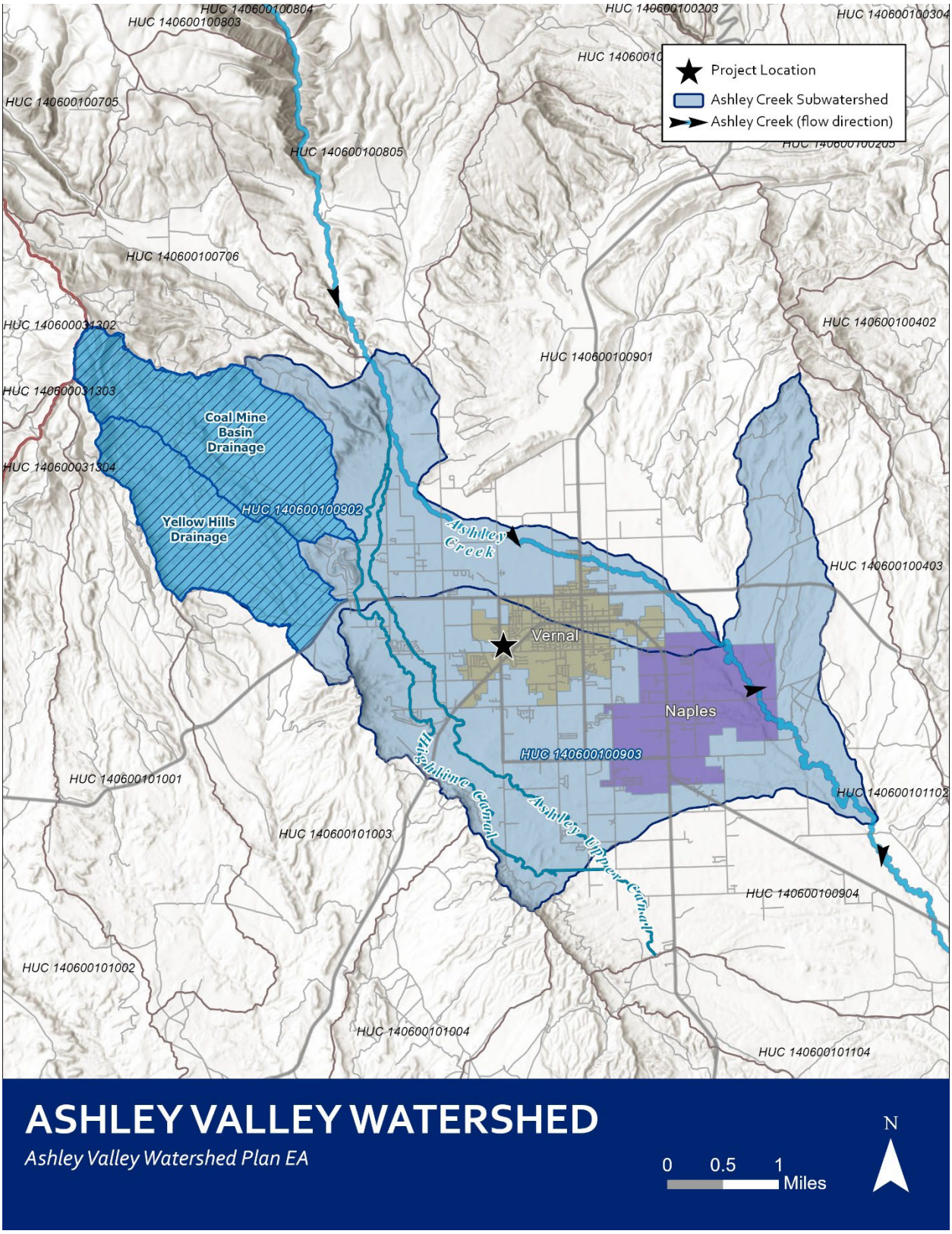

Figure 1-1. Ashley Valley Watershed Map

The Ashley Central Canal originates in the northwestern portion of the Ashley Valley, where water is diverted from Ashley Creek at the Thornburg Diversion. The headwaters of Ashley Creek are located north of the valley on the south slope of the Uinta Mountains. The upper, northwestern segment of the Ashley Central Canal is already piped, and Ashley Creek flows adjacent to the Ashley Central Canal pipe alignment for approximately 700 ft. After crossing under Ashley Creek via an existing pipe, it opens into an unlined canal, and Ashley Creek flows away from the canal to the south along the east side of the valley before eventually discharging to the valley's southeast end. The canal remains open and unlined until it reaches Naples City, where it enters an underground pipe near its terminus. The Ashley Central Canal conveys irrigation water to 38 turnouts along its length as it flows south and east through the valley. Additional inputs to the canal occur at two locations from the Steinaker Reservoir via the Steinaker Service Canal, and via surface runoff that enters the canal during storm events. The Ashley Central Canal terminates in the southeast corner of Naples, near the east end of 2500 South, where the canal enters an underground pipe that travels east for a couple blocks before opening again into a diffuse channel, where any tailwaters spread diffusely over the landscape.

The canal currently loses approximately 4,812.7 ac-ft of water annually to evaporation and seepage. Due to these significant water losses as well as impacts from drought years, many customers have not been receiving their full water allotments throughout the growing season. Personal communication with Wayne Simper, President of the ACIC, indicates that seepage from the canal has impacted adjacent residential structures and precluded farming activities in other areas (Simper, personal communication 2021). Canal seepage has damaged farm structures in the project area, such as rusting metal structures and flooding corrals. Additionally, canal seepage floods natural drainages adjacent to the canal, impacting residents and agricultural facilities in the project area. Simper receives annual complaints from residents about the seepage flooding their homes and farm structures (Simper, personal communication 2021).

The beginning and end of the open portions of the Ashley Central Canal are at elevations of approximately 5,610 ft AMSL and 5,175 ft AMSL, respectively. The canal is designed to convey flows ranging from 35 to 65 cubic feet per second (cfs) while recorded peak flows reach a high of 51 cfs. Through modeling, the Ashley Central Canal was shown to have capacity to convey a 100-year storm event (Appendix E. Flood Control Projects Explanatory Memo). The canal flows through agricultural, residential, and commercial areas of the valley. There are numerous public roads and private driveways that cross over the canal along its length. A maintenance road parallels the canal in areas where the canal traverses private residential or agricultural property. In many locations, the banks of the canal are lined with trees and shrubs and are often overgrown with herbaceous vegetation. Photographs depicting typical conditions of the canal are presented in Figures 1-2 through 1-8 below.

Figure 1-2. Ashley Central Canal Control Structure

Figure 1-3. Ashley Central Canal

Figure 1-4. Ashley Central Canal Culvert

Figure 1-5. Ashley Central Canal Near Staging Area 4

Figure 1-6. Ashley Central Canal Near Staging Area 6

Figure 1-7. Ashley Central Canal Near 2500 S and 500 W

The northern segment of the Ashley Central Canal (i.e., north of U.S.-40/191) flows through and adjacent to semi-wooded areas, agricultural fields, and residential areas. The remaining portions of the Ashley Central Canal beyond U.S.-40/191 flow through residential and urban areas as well as through agricultural fields. Specific plant species are detailed in Section 2.4.

1.6 Relationship to Other Projects

Two projects occur within the vicinity of the project area for this Proposed Project, and are related to the Proposed Project:

- Highline and Ashley Upper Canals Flood Channel Reshaping and Modeling Project
- Upper Ashley and Highline Canal Salinity Control Project

The Highline Canal and Ashley Upper Canal flow south, perpendicular to the base of the Coal Mine and Yellow Hills Sub-basins. The two detention basins proposed in this watershed plan would drain via an installed pipe to the Ashley Upper and Highline Canals.

Uintah County received funding from NRCS Regional Conservation Partnership Program (RCPP) to complete the Highline and Ashley Upper Canals Flood Channel Reshaping and Modeling Project. The project would improve approximately 63,400 ft of the Ashley Upper Canal and 66,000 ft of the Highline Canal as flood control facilities. Reclamation is proposing the use of federal funds to pipe 25.58 miles of Ashley Upper Canal and Highline Canal for flood control and stormwater collection as part of the Upper Ashley and Highline Canal Salinity Control Project.

Although flood flows from the proposed detention basins would flow into Highline and Ashley Upper Canals, the Highline and Ashley Upper Canals Flood Channel Reshaping and Modeling Project and the Upper Ashley and Highline Canal Salinity Control Project are separate and complete projects from the Proposed Project analyzed in this Plan-EA. The two projects received a different source of funding from the Proposed Project and are currently being constructed and are expected to be fully complete in 2022, prior to the commencement of the Proposed Project analyzed in this watershed plan.

Chapter 2 Affected Environment

The purpose of this section is to describe the resources that could be affected by the proposed alternatives. The purpose 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.

The project area is identified in the project maps contained in Appendix B. The Coal Mine Sub-basin, Yellow Hills Sub-basin, and Ashley Central Canal are in the Ashley Valley. Table 2-1 summarizes the physical setting of the project area.

Table 2-1. Physical Setting Summary

Physical Setting Information		Information Source
Location		
The Coal Mine and Yellow Hills Sub-basins are located on the east side of the Ashley Valley, approximately 4.4 miles west-northwest of Vernal City. The Ashley Central Canal originates approximately 3.9 miles northwest of Vernal City. The canal travels southeast through the city for approximately 9.6 miles. From the Ashley Creek/Thornburg Diversion, a 0.25-mile section of the canal is currently piped. After crossing under Ashley Creek, the canal is discharged into an open canal. The canal crosses under Highway 40 and opens back up, flowing to the southeast before terminating into open land in the southeast corner of Naples.		N/A
Topography		
Coal Mine Sub-basin	Approximately 5,740 ft AMSL (NAVD88)	United States Geological Survey (USGS 2020b)
Yellow Hills Sub-basin		
Ashley Central Canal	Approximately 5,610 to 5,175 ft AMSL (NAVD88)	
Geology		
Coal Mine Sub-basin	See Section 2.1	Appendix C - Map 7 Chronic et al. 2014
Yellow Hills Sub-basin		
Ashley Central Canal		
Soil Characteristics		
Soil Type	See Section 2.1	Web Soil Survey (NRCS 2020)
Description		
Land Information		
Land Ownership	SITLA; Private; Public right-of-way (ROW)	Appendix C - Map 5
Land Use	Grazing; undeveloped; residential; agricultural	

2.1 Soils & Geology

The geology within the project area is complex and varied. The project area sits near the eastern edge of the Uinta Basin within the larger, tectonically quiet Colorado Plateau. Within the project area, the upper geologic layers are defined by Pleistocene, glacial gravels and Quaternary alluvium from the Uinta Mountains to the north (Chronic et al. 2014; Appendix C. Map 7). According to the Utah Geological Survey (UGS) Geological Hazards Portal, the project area is not susceptible to landslides (UGS 2021). The Diamond Gulch faults and hazardous Quaternary Age faults, are located northeast of Vernal, Utah in Uintah County but outside of the project area. The northeastern corner of Utah is categorized as an area with strong/very strong earthquake shaking capability, meaning that if the project area were to experience an earthquake, the project area would likely experience strong/very strong trembling (UGS 2021).

Soils information presented in this section has been summarized from the NRCS Web Soil Survey data (Table 2-2; NRCS 2020). Table 2-2 summarizes the dominant soil types for the project area, specifically Ashley Central Canal, Coal Mine Detention Basin, and Yellow Hills Detention Basin. Nearly half of the lands in Uintah County are used for agriculture; the principal crops are corn, barley, oats, and wheat. Uintah County also contains numerous cattle, hog, sheep, and chicken operations (USDA 2017).

Table 2-2. Soil Classification Summary

Soil Unit Name	Landform	Slope (%)	Erosion Hazard Rating	Prime / Unique Farmland
61 (Crib loam)	Strath terraces	1-3	Slight	Not prime farmland
136 (Mikim loam)	Alluvial flats	1-3	Slight	Prime farmland if irrigated
137 (Mikim loam)	Alluvial fans	3-15	Slight	Not prime farmland
162 (Nolava-Nolava, wet complex)	Fan remnants	0-2	Slight	Prime farmland if irrigated
163 (Nolava-Nolava, wet complex)	Fan remnants	2-4	Slight	Prime farmland if irrigated
209 (Shotnick-Walkup complex)	Alluvial flats	0-2	Slight	Prime farmland if irrigated
243 (Turzo-Umbo complex)	Alluvial flats	0-2	Slight	Prime farmland if irrigated
251 (Umbo clay loam)	Alluvial flats	0-2	Slight	Not prime farmland

2.2 Water Resources

The northeastern corner of Utah is hydrologically within the Upper Colorado Region. The Upper Colorado Region is categorized into sub-regions, accounting units (e.g., basins), cataloguing units (e.g., sub-basins), watersheds, and subwatersheds (USGS 2020a). As defined by the USGS WBD, the Proposed Project is situated in the Lower Green Sub-Region, more specifically the Lower Green Basin. The Lower Green Basin encompasses approximately 9,316,227 acres; nearly the entire basin is contained in Utah (USGS 2021). Uintah County falls within the boundaries of several sub-basins, including the Lower Green-Diamond Sub-basin (HUC 14060010). The project area is situated within the Ashley Creek Subwatershed, which specifically includes the Coal Mine Basin-Ashley Creek Subwatershed (HUC 140600100902) and the City of Vernal-Ashley Creek Subwatershed (HUC140600100903). These two subwatersheds cover a combined area of approximately 45,907 acres (USGS 2021).

2.2.1 Surface & Groundwater Quantity & Quality

The project area is located within the Coal Mine Basin-Ashley Creek and City of Vernal-Ashley Creek Subwatersheds. The Coal Mine and Yellow Hills Sub-basins are natural drainages. Past heavy precipitation events and flash floods have caused temporary surface water flows through the drainages; however, the drainages do not support permanent surface water and do not exhibit the indicators of an ordinary high water mark (OHWM). Canals within the project area (i.e., Highline Canal, Ashley Upper Canal, Ashley Central Canal) have been intercepting surface water runoff from natural drainages since their construction in the 1800s. Highline Canal and Ashley Upper Canal are oriented perpendicular to the Coal Mine Basin and Yellow Hills drainages. From the date of their construction, both canals have intercepted floodwaters from the Coal Mine and Yellow Hills drainages. The Highline and Ashley Upper Canals were sized to handle the 10-year, 24-hour storm event. When storm intensities exceed the capacity of Highline Canal, the canal overtops, and floodwaters are intercepted by the Ashley Upper Canal. If floodwaters exceed the capacity of the Ashley Upper Canal, waters would continue in their historic drainages toward their outlet to the southeast. Highline and Ashley Upper Canals do not connect to Ashley Central Canal nor Ashley Creek. Highline and Ashley Upper Canal have a diffuse outlet in the Ashley Valley, near the base of Asphalt Ridge, approximately 3 miles south of the Ashley Central Canal terminus. For storm events that exceed the capacity of the basins and Highline and Ashley Upper Canals, floodwaters would spread diffusely over the floodplain below Coal Mine and Yellow Hills drainages. In that scenario, floodwaters could reach Ashley Creek. Under normal conditions, tailwater from the Highline and Ashley Upper Canals is conveyed through a web of natural channels at their outlet that drain toward the Green River.

Ashley Creek is a natural perennial stream that meanders through the east side of the Ashley Valley. The primary sources of water for the Ashley Central Canal are Ashley Creek and Steinaker Reservoir via the Steinaker Service Canal. Other inputs to the Ashley Central Canal are from storm water and irrigation return. The EPA WATERS GeoViewer illustrates that the Ashley Central Canal flows through numerous catchment areas. A catchment is the area where rainfall drains and flows, eventually into collecting waterbodies. The Coal Mine Detention Basin is contained within one, 4-square mile (approximately 2,705 acres) catchment area (EPA 2017a). The Yellow Hills Detention Basin is located within two catchment areas, together encompassing approximately 2 square miles (approximately 1,281 acres).

2.2.1.1 Surface & Groundwater Quantity

Excess water such as ponding, flooding, seasonal high-water tables, seeps, or drifted snow is not a major problem for the agricultural fields within and adjacent to the project area. However, a large storm event does have the potential to flood the project area because of flash flood conditions caused by soils with poor absorption capacity, which pose risk of damaging effects to residential and agricultural infrastructure. Inefficient flood irrigation methods are used throughout the project area. Current irrigation activities do not cause an insufficient moisture management problem; rather, the current system does not achieve the County's objectives for water efficiency, or the State's specific irrigation efficiency criteria. A substantial amount of water lost from the Ashley Central Canal is due to seepage and evaporation. Approximately 4,812.7 ac-ft of irrigation water from Ashley Central Canal is lost to seepage and evaporation annually. Canal seepage and flood irrigation methods likely contribute to groundwater recharge in the project area through deep percolation. However, the extent to which seepage influences groundwater recharge is unknown because there is no current or historical data available on volumes and sources of groundwater recharge or movement in the area.

2.2.1.2 Surface & Groundwater Quality

Farming activities on the associated agricultural land in the project area likely contribute to excess salt accumulation and transport to surrounding water, while also presenting the potential for contamination by petroleum, heavy metals, or other pollutants from agricultural equipment and fertilizers. Ashley Central Canal contributes to salt loading of the Colorado River annually. The application of organic or inorganic nutrients and use of pesticides on agricultural lands in the project area, coupled with the use of flood irrigation and large storm events has led to agricultural runoff into the open Ashley Central Canal and subsequent surface water quality degradation if flood waters reach natural drainages. No point-source discharges are known or were observed in the project area during the field surveys.

Waterbodies in or adjacent to the project area are not listed on the State's 303(d) list of temperature impaired waters, however, Ashley Creek, from its confluence with the Green River upstream approximately 8 miles (referred to as Lower Ashley Creek), is listed on the State's 303(d) list of impaired waters for other pollutants (DWQ 2016). The creek does not meet its warm water fishery beneficial use (Category 3B) due to high concentrations of Se, nor does it meet its agricultural beneficial use (Category 4) due to elevated TDS levels. The primary sources of Se and TDS to Lower Ashley Creek include irrigation return flows (i.e., agricultural runoff) and naturally occurring Se and TDS from underlying geologic formations (DWQ 2002).

Utah's antidegradation policy (UAX R317-2-3; State of Utah 2019) 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). Ashley Creek and its tributaries above the confluence with Dry Fork Creek is a Category 1 water of the state and is protected from water quality degradation. The Proposed Project alignment would begin approximately 950 ft downstream of the Category 1 reach of Ashley Creek.

2.2.2 Clean Water Act / Waters of the U.S., including Wetlands

A Water Resources Assessment (WRA) was conducted on August 27 and 28, 2019 by J-U-B for the Proposed Project (Appendix E). The WRA was prepared in accordance with the 1987 U.S. Army Corps of Engineers (USACE) *Wetland Delineation Manual* and the *Arid West Region Supplement* (Version 2.0). The project area was assessed based on topography, presence or absence of dominant hydrophytic vegetation and/or surface hydrology. Where vegetation indicated any potential for hydric soils, soil pit sampling was conducted, and the results were documented in accordance with the USACE *Arid West Region Supplement*.

As part of the WRA, the USFWS National Wetlands Inventory (NWI) was referenced (USFWS 2020a). The NWI data indicates that the Ashley Central Canal could contain a combination of riverine (R4SBCx, R4SBC), freshwater forested/shrub (PFOAx, PSSAx), and freshwater emergent (PEM1Cx, PEM1A) habitat along the alignment of the canal. According to the NWI data, riverine (R4SBC) habitat crosses through the Coal Mine Detention Basin and Yellow Hills Detention Basin project area (USFWS 2020a). The NWI data suggests that a few staging areas for the Proposed Project may be situated within or adjacent to freshwater emergent wetlands (PEM1A) or freshwater forested/shrub wetland (PSSAx), and PSSAx habitat, and riverine habitat (R4SBCx) (USFWS 2020a).

Surface hydrology associated with Ashley Central Canal was observed in the project area as field surveys were conducted during the irrigation season. Field survey identified irrigation-induced wetlands adjacent to the project area along the northern portion of the alignment but outside a 300-ft. buffer for the Proposed Project action. The field survey determined there were no wetlands within the project area. Multiple ephemeral channels were identified within the project area, particularly the area for the detention basins, however, field evaluations determined that these ephemeral channels lacked indicators for an OHWM. These features appear to receive water only during major storm events and do not convey water for prolonged durations or on a frequent enough basis to form an OHWM.

The WRA concluded that the Ashley Central Canal is likely not jurisdictional waters given the canal's tailwaters spread diffusely over the landscape and do not appear to directly reconnect with the Green River or Ashley Creek, and the proposed canal piping would not be expected to need a 404 CWA permit because it is anticipated that the Proposed Project would qualify for an agricultural exemption under CWA subsection 404(f)(1)(c). The USACE has issued an agricultural exemption for the canal piping portion of the Proposed Project and an Approved Jurisdictional Determination for the detention basin sites (Appendix A. USACE Consultation).

2.2.3 Regional Water Management Plan

The Utah DNR Division of Water Resources (DWR) is responsible for comprehensive water planning in Utah. Between 1972 and 1985, the DWR prepared a series of six comprehensive water planning documents entitled, "The State of Utah Water." These documents discussed water supply and use estimates in the state, as well as potential uses for Utah's unused water supplies. As a result of DWR water planning efforts, the Utah State Water Plan was prepared in 1990, and later updated in 2001. The Utah State Water Plan is currently undergoing another update that is expected to be complete in 2021. The State Water Plan is a comprehensive water planning document that provides a statewide resource inventory, as well as guiding principles to water planning in Utah. In order to address the changing needs of water planning in Utah, the guiding principles are evaluated and revised as part of State Water Plan updates.

In addition to the State Water Plan, subsequent plans were prepared for the state's 11 river basins (Utah DWR 2001). The project area falls within the limits of the Uintah Basin Plan. The most recent Uintah Basin Plan was published in 2016, with the purpose of describing the current status of water resources in the basin, estimating future water demands, identifying ways to manage and enhance current supplies, as well as developing new water supplies for future needs. The Uintah Basin Plan aims to assist water managers in the development of water management strategies and policies. According to the Uintah Basin Plan, five elements are key to addressing future water demands in the area. These elements include, "strong cooperation between all water resource stakeholders; continued investment in water infrastructure and water development; concerted efforts to improve water conservation measures and practices; continued investment in water quality programs; and conscious effort to address environmental, recreational, and other needs" (Utah DWR 2016).

2.2.4 Floodplain Management

Canals within the project area (i.e., Highline Canal, Ashley Upper Canal, Ashley Central Canal) have been intercepting surface water runoff from natural drainages since their construction in the 1800s. Highline Canal and Ashley Upper Canal are oriented perpendicular to the Coal Mine and Yellow Hills Basin drainages. From the date of their construction, both canals have intercepted floodwaters from the Coal Mine and Yellow Hills drainages. The Highline and Ashley Upper Canals were sized to handle the 10-year, 24-hour storm event. When storm intensities exceed the capacity of Highline Canal, the canal overtops, and floodwaters are intercepted by the Ashley Upper Canal. If floodwaters exceed the capacity of the Ashley Upper Canal, waters would continue in their historic drainages toward their outlet to the southeast. Highline and Ashley Upper Canals do not connect to Ashley Central Canal nor Ashley Creek. Highline and Ashley Upper Canal have a diffuse outlet in the Ashley Valley, near the base of Asphalt Ridge, approximately 3 miles south of the Ashley Central Canal terminus. For storm events that exceed the capacity of the basins and Highline and Ashley Upper Canals, floodwaters would spread diffusely over the floodplain below Coal Mine and Yellow Hills drainages. In that scenario, floodwaters could reach Ashley Creek. Under normal conditions, tailwater from the Highline and Ashley Upper Canals is conveyed through a web of natural channels at their outlet that drain toward the Green River.

In recent years, several high intensity storms and flash floods have highlighted deficiencies in flood protection that have caused severe damage to developed areas and agricultural lands throughout the County. Most notable are the 2016, 2018, and 2021 storm events that resulted in localized flooding in the project area. The Coal Mine and Yellow Hills Sub-basins are the largest sub-basins above populated portions of Ashley Valley. Of the recent storm events, the 2021 storm was the most severe and damaged between 60 and 80 homes by flooding basements, garages, crawl spaces, and ground level floors of homes, in addition to damaging landscaping and fences around many homes. The 2021 storm overtopped the canal in several locations. In one location, the canal overtopping led to a blowout of the canal bank, resulting in significant flooding of an agricultural field. Unofficial precipitation estimates indicate rainfall corresponding to a 100-year, or greater, storm event. Modeling of a 100-year storm without the proposed detention basins roughly correlates with the damage reported in the area (Averett, personal communication 2021). Past and future high intensity runoff events, such as the 2021 storm event, have the potential to overwhelm existing irrigation canals that meander through populated areas of the valley, flood downstream areas and compromise the structural integrity of the canals creating further flood damage potential.

Flood modeling demonstrates that approximately 233 structures, 88 roads/minor highways, and over 334 acres of agricultural land in the project area would experience flooding under a 10-year storm event under existing conditions. In the event of a 500-year storm, approximately 737 structures, 173 roads/minor highways, and over 763 acres of agricultural land in the project area would experience flooding under existing conditions.

Under E.O. 11988, federal agencies must avoid adversely impacting floodplains, directly or indirectly. Floodplains are “lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a 1-percent or greater chance of flooding in any given year” (E.O. 11988 Section 6(c)). The Federal Emergency Management Agency (FEMA) is responsible for identifying and categorizing flood hazard areas throughout the country. Often flood hazard areas are discussed in relation to special flood hazard areas (SFHA), which have a 1-percent annual chance of flood. The 1-percent annual chance of flood is also known as the base flood, or 100-year flood. Activities in the 100-year floodplain can threaten human safety and property, if not properly mitigated. Floodplain protection is essential to ensure that the flood carrying capacity is sufficient, and that flooding does not extend beyond designated flood hazard areas.

FEMA develops Flood Insurance Rate Maps (FIRMs) that illustrate the various flood hazard areas in a location. Examples of some SFHAs are Zone A, Zone V, Zone VE, and Zones V1-V30. Areas that have a 0.2-percent annual chance of flooding are referred to as the 500-year flood. Moderate flood hazard areas are the areas between the 100-year floodplain boundary and the 500-year floodplain boundary (Zone B and Zone X – shaded). If an area is outside of the 100-year flood and above the 500-year flood elevation there is minimal flood hazard risk (Zone C or Zone X – unshaded). The FEMA FIRM Panels #49047C0655D, 49047C0660D, 49047C0670D, and 49047C0690D for the project area indicate that portions of Ashley Central Canal and the detention basins are within the 100-year floodplain (Zone A; FEMA 2010). However, much of the project area is situated in an area of minimal flood hazard (Zone X; FEMA 2010).

Discrepancies exist between the floodplain boundaries shown on the FEMA FIRM Panels for the project area, and the extents of floodplains for all events under existing conditions using flood modeling. The discrepancies are attributed to the differing methods used for determining the floodplain boundaries. The FEMA floodplain boundaries are delineated using approximate delineation methods. Whereas the existing floodplain conditions in the project area were modeled using the HEC-RAS 2D model, a 2-dimmensional surface water model that calculates where water would travel in all directions via overland flow.

The 500-, 200-, 100-, 50-, 25-, 10-, 5-, and 2-year storm events runoff flow and storage were provided by Sunrise Engineering. The hydrologic model results were compared against the peak runoff results from Stream Stats and previous completed FEMA studies. Stream Stats peak flow estimates were obtained for the two watersheds, but two of the three input parameters were outside the data range limits for both watersheds. Because the input parameters are outside of the data range limits, a percent error of predication was not calculated, which reduces the confidence level in the Stream Stats peak flow estimates. Therefore, the flood flows provided by Sunrise Engineering were loaded into HEC-RAS 2D model for flood routing and mapping.

2.3 Air Quality

2.3.1 Clean Air Act / National Ambient Air Quality Standards

Pursuant to requirements of the Clean Air Act (CAA; 42 U.S.C. 7401 et seq), the EPA has established health-based National Ambient Air Quality Standards (NAAQS) for six pollutants considered harmful to human health and the environment, known as criteria pollutants. Criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), sulfur dioxide (SO_2), and lead (Pb). Monitoring NAAQS in Utah is delegated to the Utah Division of Air Quality (DAQ). The DAQ has an ambient air monitoring network consisting of 23 air monitors across the state. One monitor is located in Uintah County at 628 North 1700 West in Vernal, approximately 935 ft west of the Ashley Central Canal where it crosses under 1500 West. This monitoring station is equipped with sensors for continuous monitoring of O_3, NO_2, and PM NAAQS.

In May 2018, the EPA designated parts of the Uintah Basin, including the entire Ashley Valley, as a 'Marginal' Nonattainment area for the 8-hour ozone pollution standard of 70 parts per billion (ppb) (UDEQ 2018). Uintah County annually complies with all other NAAQS requirements. Under Title R307 of the Utah Administrative Code (UAC), emissions inventories must be undertaken to further characterize Utah's air quality. Emission inventories are conducted every three years, during which the DAQ collects information about the source and quantity of emissions released across the state. Sources can be categorized as point sources (large stationary industrial or commercial facilities), area sources (a combination of smaller stationary sources assessed as a group), or mobile sources (personal or commercial vehicles). The 2017 triennial inventory is the most recent state-wide inventory available. It covers over 360 point sources, 194 area categories, and 12 on- and off-road source categories. The data collected is used by the DAQ to review trends over time and manage the air quality program. Results in tons of compound emitted per year for Uintah County are shown in Table 2-3.

Table 2-3. 2017 Emissions Inventory (tons/year) for Uintah County (DEQ 2018)

CO	NO_2	PM_{10}	$PM_{2.5}$	NH_3	SO_2	VOC
22,146	7,959	7,318	1,550	492	50	93,033

PM10 = Inhalable particulate matter
PM2.5 = Fine inhalable particulate matter
VOC = Volatile Organic Compound

2.3.2 Climate & Greenhouse Gases

Gases that trap heat in the atmosphere are called greenhouse gases (GHG). Data regarding GHGs, regulations and emissions sources are summarized from the EPA website (EPA 2017). GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases such as hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). These GHGs are introduced into the atmosphere by a variety of sources, including production of electricity, private and commercial transportation, oil and gas production, commercial and residential practices, and agriculture. The Uinta Basin is the state's main oil and gas development area that covers portions of Duchesne and Uintah Counties. An emissions inventory conducted in 2014 found that Uintah County oil and gas emission sources contributed 69% of the total oil and gas emissions produced in the Uinta Basin (DAQ 2014). No oil and gas wells are located in the project area. Fifteen oil producing wells, one shut-in oil well, one gas well, and one inactive gas injection well are located outside the project area near Jensen, Utah (UDOGM 2021).

2.4 Plants

A field survey was conducted on August 27 and 28, 2019 by J-U-B. During this field survey, dominant plant species were identified throughout the project area. Dominant species found along Ashley Central Canal and within the detention basin sites and staging areas are identified in Table 2-4.

Vegetation along the Ashley Central Canal was primarily dominated by reed canarygrass (*Phalaris arundinacea*) and a combination of large trees, saplings, and shrubs. Other dominant species found along the Ashley Central Canal alignment are described in Table 2-4.

The proposed detention basins would be situated in undeveloped areas that are dominated by a desert-scrub landscape consisting of big sagebrush (*Artemisia tridentata*), cheatgrass (*Bromus tectorum*), and greasewood (*Sarcobatus vermiculatus*). Other species found in the detention basins are described in Table 2-4.

All Proposed Project staging areas would be located in an upland position and generally within a disturbed setting (i.e., residential property, agricultural fields, paved or gravel parking lots). Staging areas were dominated by weedy, upland and agricultural species, and ornamental grasses (see Table 2-4).

Table 2-4. List of Dominant Vegetation

Common Name	Scientific Name	Area Observed		
		Ashley Central Canal	Detention Basins	Staging Areas
Alfalfa	*Medicago sativa*			X
Baltic rush	*Juncus balticus*	X		
Big sagebrush	*Artemisia tridentata*		X	
Boxelder maple	*Acer negundo*	X		
Broom snakeweed	*Gutierrezia sarothrae*	X		
Canada thistle	*Cirsium arvense*			
Cheatgrass	*Bromus tectorum*	X	X	X
Common mullein	*Verbascum thapsus*	X		
Common sunflower	*Helianthus annuus*		X	
Coyote willow	*Salix exigua*	X		
Crabapple tree	*Malus sylvestris*	X		
Crested wheatgrass	*Agropyron cristatum*		X	
Curlycup gumweed	*Grindelia squarrosa*	X		
Curly dock	*Rumex crispus*	X		
Desert globemallow	*Sphaeralcea ambigua*	X		
Field bindweed	*Convolvulus arvensis*	X		X
Field horsetail	*Equisetum arvense*	X		
Field thistle	*Cirsium discolor*	X		X
Four-wing saltbrush	*Atriplex canescens*		X	
Fremont cottonwood	*Populus fremontii*	X		
Geyer willow	*Salix geyeriana*	X		
Goldenrod	*Solidago gigantea*	X		

Common Name	Scientific Name	Area Observed		
		Ashley Central Canal	Detention Basins	Staging Areas
Gooseberry	*Ribes uva-crispa*	X		
Greasewood	*Sarcobatus vermiculatus*		X	
Groundsel	*Senecio vulgaris*			
Halogeton	*Halogeton glomeratus*	X		X
Hound's tongue	*Cynoglossum officinale*	X		
Indian rice grass	*Achnatherum hymenoides*			
Mountain snowberry	*Symphoricarpos oreophilus*	X		
Narrowleaf cottonwood	*Populus angustifolia*	X		
Pepperweed	*Lepidium latifolium*		X	
Perennial ryegrass	*Lolium perenne*	X		X
Plains prickly pear	*Opuntia polyacantha*		X	
Prickly lettuce	*Lactuca serriola*	X		X
Purple nut sedge	*Cyperus rotundus*	X		
Red osier dogwood	*Cornus alba*	X		
Reed canarygrass	*Phalaris arundinacea*	X		
Rubber rabbitbrush	*Ericameria nauseosa*			X
Russian olive	*Elaeagnus angustifolia*	X		
Russian thistle	*Salsola tragus*		X	
Scouring rush	*Equisetum hyemale*	X		
Shadscale	*Atriplex confertifolia*		X	
Showy milkweed	*Asclepias speciosa*	X		
Slippery elm	*Ulmus rubra*	X		
Smooth brome	*Bromus inermis*	X		
Stinging nettle	*Urtica dioica*	X		
Sunflower	*Helianthus* sp.	X		
Thinleaf alder	*Alnus tenuifolia*	X		
Timothy-grass	*Phleum pratense*	X		
Utah juniper	*Juniperus osteosperma*		X	
Western white clematis	*Clematis ligusticifolia*	X		
White sweet clover	*Melilotus albus*	X		
Wood's rose	*Rosa woodsii*	X		
Yellow sweet clover	*Melilotus officinalis*	X		

2.4.1 Special Status Plant Species

The ESA was established in 1973 with the intention of protecting and conserving endangered and threatened species and their habitat. Federal agencies must comply with the regulations set forth in the ESA. A field survey and subsequent Biological Assessment (BA) were completed by J-U-B to assess the degree to which the Proposed Project may affect: federally threatened or endangered species, or species proposed for listing; designated and proposed critical habitat; and state sensitive species and those species managed under conservation agreements.

To identify special status plant species within the project area, an official species list was obtained from the USFWS Information for Planning and Consultation (IPaC) database (Appendix E. Biological Assessment). According to the IPaC Report (dated: January 15, 2021), one ESA-listed plant species has the potential to exist within the project area: Ute Ladies'-tresses. The UDWR Natural Heritage Program Online Species Search was also consulted to determine ESA-listed and state sensitive species occurrence in the vicinity of the project area. The Natural Heritage Program Online Species Search identified records of occurrence for Ute ladies'-tresses within a ½-mile and 2-mile radius of the project area.

Ute ladies'-tresses is a native orchid species designated as threatened under the ESA. This plant is found in wetlands and riparian areas, including spring habitats, mesic meadows, river meanders and floodplains. They require open habitats, and populations decline if trees, shrubs, and aggressive herbaceous species invade the habitat. The elevation range in which populations have been found varies from 750 to 7,000 ft, with most populations existing above 4,000 ft. They are not tolerant of permanent standing water and do not compete well with aggressive species, such as reed canarygrass.

Due to the general geographic location of the Proposed Project and the recent records of occurrence near the project area, a Ute ladies'-tresses survey was conducted to evaluate habitat suitability for the species within the project area. A Ute ladies'-tresses survey memo is included in Appendix E. The closest known population identified by USFWS is located near Maeser, Utah and near Vernal, Utah, approximately 1 mile to the northeast of the project area. A rare plant survey was conducted by a qualified biologist on August 27 and 28, 2019 to determine if the Proposed Project would affect the species or any suitable habitat. Surveys of the central portion of the canal were also conducted in 2017 and 2018 during the flowering period (Appendix E). The USFWS *Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants* (2011) and the USFWS *Interim Survey Requirements for Ute ladies'-tresses Orchid* (1992) provided guidance for the survey. Two known Ute ladies'-tresses individuals were located in the reference population survey area. Other species observed in the reference population survey area were white sweet clover and goldenrod.

The riparian edge associated with Ashley Creek and Ashley Central Canal were determined to be the portions of the project area with potential to contain suitable habitat for Ute ladies'-tresses and were subsequently surveyed for the presence of the species and to evaluate habitat suitability. Two clusters of Ute ladies'-tresses plants were observed and documented adjacent to, but outside, the northern segment of the project area (along Ashley Creek on the opposite bank from the adjacent Ashley Central Canal alignment). One cluster with six individuals and one cluster with three individuals were documented and their status and location reported to USFWS on August 29, 2019.

Due to the presence of Ute ladies'-tresses individuals and suitable habitat within 300-ft of the upper portion of the project area, consultation with USFWS was required for the Proposed Project. Consultation with USFWS is complete, and concurrence was received from USFWS on May 20, 2021 (Appendix A. USFWS Concurrence).

2.4.2 Noxious Weeds & Invasive Plants

E.O. 13112 states that a federal agency shall "not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species." Noxious weeds and invasive plants are non-native species whose introduction does or is likely to cause

economic or environmental harm or harm to human health. Utah has designated 54 plant species as noxious weeds under the Utah Noxious Weed Act (Utah Code §4-17-101 et seq.). Of these, 25 are known to occur in Uintah County (Lowry et al. 2016). Within Utah, counties are given the responsibility to oversee noxious weed management programs on state and county property. In addition to the designated state noxious weed species, Uintah County has designated common teasel (*Dipsacus fullonum*) as a noxious weed. Although patches of common teasel were identified along many portions of the project area, no infestations of invasive species were noted in the field survey and none are known to occur in the project area.

2.4.3 Riparian Areas

Riparian areas are located adjacent to water bodies and can be described as a transitional zone between wet conditions and dry upland conditions. Riparian plant communities are distinct from upland plant communities due to the improved soil conditions and increased water availability. Riparian plant communities play an important role in bank stabilization, floodwater dispersion, maintaining groundwater levels, trapping sediment, and maintaining biological diversity.

Riparian habitat of varying quality exists within the project area, specifically along the entire length of Ashley Central Canal as well as the approximately 800 ft of Ashley Creek that is adjacent to the Proposed Project alignment. The hydrophytic vegetation along the canal is supported by the presence of irrigation water during the growing season and some surface flows during spring runoff and rain events. The vegetation along Ashley Creek is supported by natural flows in Ashley Creek and any surface flows from storm events; the Ashley Central Canal is piped along this segment of Ashley Creek, therefore riparian vegetation alongside the creek receives no supplemental water from the Ashley Central Canal.

2.5 Animals

2.5.1 Wildlife & Wildlife Habitat

Given the residential and agricultural land uses within the project area, wildlife species in the vicinity includes a range of native and non-native migratory birds, resident birds, small mammals, deer, and reptiles. The project area is outside suitable habitat for elk (*Cervus elaphus nelsoni*) and the greater sage-grouse (*Centrocercus urophasianus*). The Coal Hill detention basin is situated in crucial winter mule deer habitat.

2.5.2 Special Status Animal Species

A BA was prepared for the Proposed Project that discussed species characteristics, habitat requirements, and potential impacts that may result to special status animal species from implementing the Proposed Project. Six ESA-listed animal species were identified by the IPaC Report as having potential to occur within the project area (Appendix E. Biological Assessment). Utah does not contain any Essential Fish Habitat as defined in the Magnuson-Stevens Act, and no proposed or designated critical habitat is located within the project area. These species are identified in Table 2-5 below.

Table 2-5. ESA-listed Animal Species with Potential to Occur in the Project Area

Common Name	Scientific Name	ESA Status	Critical Habitat in Project Area
Mexican Spotted Owl	*Strix occidentalis*	Threatened	No
Yellow-Billed Cuckoo	*Coccyzus americanus*	Threatened	No

Common Name	Scientific Name	ESA Status	Critical Habitat in Project Area
Bonytail Chub	*Gila elegans*	Endangered	No
Colorado Pikeminnow	*Ptychocheilus lucius*	Endangered	No
Humpback Chub	*Gila cypha*	Endangered	No
Razorback Sucker	*Xyrauchen texanus*	Endangered	No

The UDWR Natural Heritage Program Online Species Search was also consulted to determine ESA-listed and state sensitive species records of occurrence in the Proposed Project's vicinity. According to the Utah Natural Heritage Program Online Species Search, there are historic records of greater sage-grouse (1984) within a 2-mile radius of the project area. The greater sage-grouse is a Utah wildlife species of concern. The majority of the project area is not located within an established sage-grouse management area (SGMA), nor within winter habitat or actively occupied habitat for the species. The detention basin sites are located within the established Uintah SGMA, but the detention basins do not overlap with identified occupied habitat, known lek locations, nesting or brood rearing areas, or winter habitat for the greater sage grouse. Existing conditions within the proposed detention basins would be considered poor sage-grouse habitat due to the sparse sagebrush coverage, low forb density, and the lack of wet meadows or a persistent, accessible water source in the vicinity. Additionally, the level of human disturbance and proximity to residential development would likely deter greater sage-grouse occupation at these locations.

2.5.3 Migratory Birds / Bald and Golden Eagles

Under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712), it is considered "illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nest, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations." The Bald and Golden Eagle Protection Act of 1940 (BGEPA) forbids anyone from taking bald eagles, including their parts, nests, or eggs; take is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, collect, molest or disturb" (USFWS 2016).

According to the USFWS IPaC database, there are 13 migratory birds and avian species protected under the BGEPA that may occur in the project area (see Table 2-6).

Table 2-6. Protected Avian Species that May Occur in the Project Area

Common Name	Scientific Name
Bald Eagle	*Haliaeetus leucocephalus*
Golden Eagle	*Aquila chrysaetos*
Black Rosy-Finch	*Leucosticte atrata*
Brewer's Sparrow	*Spizella breweri*
Burrowing Owl	*Athene cunicularia*
Clark's Grebe	*Aechmophorus clarkii*
Long-Billed Curlew	*Numenius americanus*
Marbled Godwit	*Limosa fedoa*
Pinyon Jay	*Gymnorhinus cyanocephalus*
Rufous Hummingbird	*Selasphorus rufus*
Virginia's Warbler	*Vermivora virginiae*
Willet	*Tringa semipalmata*

Common Name	Scientific Name
Willow Flycatcher	*Empidonax traillii*

Field investigations found no active nests for raptors or migratory species during the site visits in the late summer months. The UDWR Natural Heritage Program Online Species Search did not identify historic records of bald or golden eagles within a ½-mile or 2-mile radius of the project area.

2.6 Human

2.6.1 Socioeconomics

The project area is situated within Maeser, Vernal City and Naples City, and unincorporated portions of Uintah County. Given the project area spans several cities and unincorporated areas, the following sections describe the current socioeconomic conditions in Maeser, Vernal City, Naples City, as well as Uintah County, as compared to the State of Utah; the current demographic, employment, income, and economic conditions are presented for these areas. Uintah County is the eleventh most populous county in the State of Utah.

2.6.1.1 Population and Demographics

Population and demographic estimates for Maeser, Vernal City, Naples City, Uintah County and the State of Utah are described in Table 2-7. Percentages for gender, age, and race in Maeser, Vernal and Naples are relatively similar and consistent with percentages for the County and State. Overall, Caucasian individuals represent the largest portion of the population in each of the areas considered, with Hispanic individuals being the second largest.

Table 2-7. 2019 Demographic Profile Comparison

Socioeconomic Criteria		Vernal City	Percent (%)*	Naples City	Percent (%)*	Maeser Census Designated Place (CDP)	Percent (%)	Uintah County	Percent (%)	Utah	Percent (%)
Total Population		10,574	100	2,714	100	4,123	100	36,084	100	3,096,848	100
Gender	Female	5,051	47.8	1,353	49.9	2,159	52.4	17,782	49.3	1,537,980	49.7
	Male	5,523	52.2	1,361	50.1	1,964	47.6	18,302	50.7	1,558,868	50.3
Age	Under 18	3,197	30.2	1,026	37.8	1,442	35.0	12,043	33.4	923,583	29.8
	18 & Over	7,377	69.8	1,688	62.2	2,681	65.0	24,041	66.6	2,173,265	70.2
Race	White	8,331	78.8	2,380	87.7	3,956	95.9	29,455	81.6	2,425,647	78.3
	Hispanic	1,386	13.1	294	10.8	87	2.1	3,038	8.4	434,832	14.0
	African American	69	0.7	0	0	23	0.6	143	0.4	34,571	1.1
	American Indian or Alaskan Native	324	3.1	28	1.0	24	0.6	2,564	7.1	28,515	0.9
	Asian	18	0.2	0	0	0	0	165	0.5	71,000	2.3
	Native Hawaiian or Other Pacific Islander	26	0.2	0	0	0	0	26	0.1	26,961	0.9
	Two or More Races	420	4.0	12	0.4	33	0.8	693	1.9	70,074	2.3
	Other	0	0	0	0	0	0	0	0	5,248	0.2

Source: U.S. Census Bureau (Census) 2019.
**Percentages may not add up to 100 due to rounding.*

The Census estimates that Uintah County has grown approximately 8.7% since 2010 (using 2018 population estimates). Population growth is anticipated to continue in the years to come. The area downstream of the Coal Mine and Yellow Hills Sub-basins provide space to accommodate further growth and development. Past, current, and future population estimates for Uintah County, the State of Utah, and the United States are summarized in Table 2-8.

Table 2-8. Past, Current, and Future Population

Population Year	Uintah County	Utah	U.S.
Total Population 1990	22,211	1,722,850	248,709,873
Total Population 2000	25,224	2,223,169	281,421,906
Total Population 2010	32,588	2,763,885	308,745,538
Projected Population 2020	39,740	3,309,234	339,540,606
Projected Population 2030	43,981	5,257,239	438,600,626

Source: 1990, 2000, 2010 Census.

2.6.1.2 Employment and Income

The 2019 American Community Survey estimates for employment and income status in Maeser, Vernal City, Naples City, Uintah County and Utah are provided in Table 2-9. Vernal City has the highest unemployment rate and percentage of families below the poverty threshold, while Naples and Maeser have a lower unemployment rate and percentage of families below the poverty level than Uintah County. The poverty threshold for a family (2 or more people) was based on the annual statistical poverty thresholds from the Census' Current Population Reports, Series P-60 on Income and Poverty. A greater percentage of individuals are unemployed in Uintah County, as compared to the State of Utah.

Table 2-9. Employment and Income Status

Characteristic	Vernal City	Naples City	Maeser CDP	Uintah County	Utah
Population 16 years and older	7,633	1,745	2,881	25,417	2,273,074
Civilian labor force	4,972	1,153	1,889	16,231	1,552,893
Employed	4,400	1,117	1,738	14,911	1,497,354
Unemployed	572	36	151	1,320	55,539
Percent unemployed	11.5%	3.1%	8.0%	8.1%	3.6%
Median household income	$64,926	$81,845	$86,125	$73,628	$81,525
Mean household income	$73,958	$84,097	$89,345	$87,268	$101,666
Families below poverty level	9.8%	7.1%	1.3%	6.7%	4.0%

Source: Census 2019.

Approximately 6.7% of households in Uintah County are below the poverty level (see Table 2-9; Census 2019). Compared to Uintah County, the households below the poverty level in Vernal is greater than the County at 9.8% (see Table 2-9; Census 2019). However, the percentage of households below the poverty level in Naples and Maeser and less than the County at 7.1% and 1.3%, respectively (see Table 2-9; Census 2019). Given the lack of storage and the water losses experienced in the current Ashley Central Canal system from seepage and evaporation, the irrigation season in the project area is often truncated. The shortened irrigation season ultimately impacts profitability and overall income status in the project area. Furthermore, personal communication with Wayne Simper, President of the ACIC, indicates that seepage from the canal has impacted adjacent residential structures and precluded farming activities in other areas (Simper, personal communication 2021). Canal seepage has damaged farm structures in the project area, such as rusting metal structures and flooding corrals. Additionally, canal seepage floods natural drainages adjacent to the canal, impacting residents and agricultural facilities in the project area. Simper receives annual complaints from residents about the seepage flooding their homes and farm structures.

2.6.2 Environmental Justice & Civil Rights

E.O. 12898 requires federal agencies to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.” Minority and low-income populations are considered environmental justice (EJ) populations that are afforded EJ protections. EJ has its legislative roots in Title VI of the Civil Rights Act of 1964, which states that “no person in the United States shall on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” Overburdened communities are defined as EJ populations or geographic locations in the United States that potentially experience disproportionate environmental harm and risks (EPA 2020). Disproportionality can result from a greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Overburdened communities experience greater vulnerability when an accumulation of negative or lack of positive environmental, health, economic, or social conditions are present within these populations or places (EPA 2020).

USDA Departmental Regulation (DR) 5600-002 defines minority as a person who is a member of the following population groups: black or African American, Hispanic or Latino, Asian American, American Indian or Alaskan Native, and Native Hawaiian and other Pacific Islander. A minority population is “any readily identifiable group of minority persons who live in geographic proximity to, and, if circumstances warrant, migrant farm workers and other geographically dispersed/transient persons who will be similarly affected by USDA programs or activities” (DR 5600-002). The demographics and socioeconomic analysis demonstrate that approximately 21.7% and 18.4% of the population in Utah and Uintah County, respectively, can be considered a minority. Compared to Uintah County, Naples and Maeser have smaller minority populations at 12.2% and 4.1%, respectively. Whereas minorities in Vernal represent 21.3% of the population, which is 2.9% greater than Uintah County. Overall, Hispanic, and then American Indian or Native Alaskan represent the largest minority demographic throughout the County, the State, and project area. Portions of the Ute Tribe - Uintah and Ouray Reservation are located within Uintah County. The project area is situated approximately 6.5 miles east of the reservation boundaries.

In identifying minority communities, the CEQ *Environmental Justice Guidance Under the National Environmental Policy Act* defines a community as "either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native American), where either type of group experiences common conditions of environmental exposure or effect" (CEQ 1997).The CEQ guidance explains that a minority population is present in the project area if "(a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis" (CEQ 1997). The minority population percentage within the three localities that make up the project area is less than 5% different from Uintah County. Furthermore, the average minority population in the project area (Vernal, Naples, Maeser) is 12.5%, which is less than Uintah County (18.4%). Given that the percentage of minority races in the project area is not significantly greater than that of the surrounding area and represents less than 50% of the area's total population, a minority population per the CEQ's definition does not exist in the project area and would not be considered an overburdened community according to the EPA's definition (CEQ 1997 and EPA 2020).

The EPA describes low-income as a reference to populations characterized by limited economic resources (EPA 2020). A low-income population means "any readily identifiable group of low-income persons who live in geographic proximity to, and, if circumstances warrant, migrant farm workers and other geographically dispersed/transient persons who will be similarly affected by USDA programs or activities" (DR 5600-002). According to the CEQ *Environmental Justice Guidance Under the National Environmental Policy Act*, a low-income population in an affected area should be identified with the annual statistical poverty thresholds from the Census' Current Population Reports, Series P-60 on Income and Poverty (CEQ 1997). Approximately 8.2% of households in Utah and 12.2% of households in Uintah County are below the federal poverty level. As compared to Utah and Uintah County, Vernal has a greater percentage of low-income households (20.6%), while Naples and Maeser have lower percentages of low-income households at 7.9% and 1.3%, respectively. The percentage of families below the poverty threshold in Vernal, Naples, and Maeser is less than 5% greater than Uintah County. The percentage of families below the poverty threshold in Maeser is 5.4% less than those in Uintah County. Furthermore, the average of the three localities (Vernal, Naples, and Maeser) is 6.07%, which is similar to Uintah County (6.7%). Therefore, the difference between the project area and the surrounding area is not significant and would not be considered an overburdened community per the EPA's definition (EPA 2020).

Based on demographic and socioeconomic analysis, minority individuals and low-income populations (i.e., EJ populations) are present within the project area. Given that the EJ populations in the project area and Uintah County are not significantly different, no overburdened communities are present in the project area. Therefore, although there are residents in the project area that qualify for EJ protections, the communities in which the Proposed Project occurs do not qualify as EJ communities (i.e., overburdened communities).

2.6.3 Cultural, Historic, and Paleontological Resources

Several federal statutes and Executive Orders direct the protection and consideration of cultural and historic resources, namely NEPA and the National Historic Preservation Act (NHPA). Under NEPA, federal agencies must consider the effect of federal actions upon historical, archeological, and paleontological resources. In addition, Section 106 of the NHPA requires federal agencies to take into account the effects of their actions on historic properties. NHPA defines a historic property as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) ..." (36 CFR 800.16). Pursuant to Section 106 of the NRHP, the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Office (SHPO), and/or Tribal Historic Preservation Office (THPO), and Tribal Governments, must be consulted to determine whether the Proposed Project could have an adverse effect on NRHP-listed and eligible properties.

A cultural resource survey was completed for the Proposed Project's area of potential effect (APE) in July 2020 by Certus Environmental Solutions, LLC (Certus). The ACHP defines the APE as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)). The APE surveyed by Certus is representative of the entire project area, encompassing all aspects of the Proposed Project including staging areas; henceforth, the APE will be referred to as the project area. The survey identified 10 archaeological sites within the project area, four of which were determined eligible for the NRHP. These four eligible sites are the Highline Canal (42UN2676), the Ashley Upper Canal (42UN2680), the Ashley Central Canal (42UN5195), and Steinaker Service Canal (42UN5471). Ashley Central Canal was key to the settlement of Vernal and the irrigation history of Ashley Valley. As a result, Ashley Central Canal is eligible for the National Register under Criterion A. Furthermore, Ashley Central Canal is eligible for the National Register under Criterion B due to being associated with Sterling Driggs Colton, who was noted for his role in the canal's development, and as the first elected sheriff. Ashley Central Canal was nominated for the National Register in 1983. No historic structures were identified by the cultural survey.

SHPO concurred with the eligibility and determination of effects on September 24, 2021 (Appendix A). NRCS submitted consultation letters on September 13, 2021 to the Shoshone-Bannock Tribes of the Fort Hall Reservation, Ute Indian Tribe of the Uintah & Ouray Reservation, Eastern Shoshone Tribe of the Wind River Reservation, and Northwestern Band of Shoshone Nation for concurrence and compliance with Section 106 requirements. The Tribes have not responded to the request for consultation. Tribal consultation letters are included in Appendix A.

The UGS, a division of the Utah DNR, was contacted regarding the presence of paleontological resources in the project area. According to the UGS, no paleontological localities have been recorded in the project area and the quaternary and recent alluvial deposits in the project area have a "low to moderate potential for yielding significant fossil localities" (Appendix A).

2.6.4 Hazardous Materials

The Resource Conservation and Recovery Act (RCRA) is the primary statute established with the purpose of providing a structure for hazardous waste management. For a substance to be considered a hazardous waste, it must first be classified as a solid waste under RCRA. Any material that is abandoned, inherently waste-like, discarded military munition, or recycled in certain ways is considered a solid waste and is subject to RCRA. Hazardous waste is defined as

any liquid, solid, gas, or sludge that poses a hazard to human health or the environment because of its quantity, concentration, or physical or chemical characteristics. A review of the UDEQ Environmental Interactive Map was conducted to determine the presence of hazardous or solid waste disposal sites in the proximity of the project area.

Using the UDEQ's Environmental Interactive Map, a 5.0-mile radius was applied around the center point of the project area (40.45535°, -109.5571°); this search area encompassed all components of the Proposed Project. Over 200 facilities were identified within the search area (Appendix C. Map 4). The facilities and sites identified by the UDEQ Environmental Interactive Map were associated with one or more of the following categories: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list, environmental incidents, TIER2, underground storage tanks (USTs), Voluntary Cleanup Program, solid waste facilities, dry cleaner facilities, and hazardous waste and used oil. Of those 200 facilities identified, four sites/facilities were near or adjacent to the project area but did not fall within the project area: two environmental incidents and two facilities with USTs. Table 2-10 summarizes those four site/facility listings and their attributes.

Table 2-10. UDEQ Sites/Facilities in or Near the Project Area

DERR / Facility ID	Category	Responsible Party	Title Event Name	Date Discovered	Details
8317	Environmental Incident	Carman Hoyt	Carman Hoyt (Null RP Substituted)	9/22/2011	Chemical: Cobalt 60
11464	Environmental Incident	Uintah Water Conservancy District	Fish Kill	7/15/2013	Chemical: Teton - Salt of endothall
9000372	UST	Maverick #408	-	-	Four, 12,000-gallon UST (3 gasoline and 1 diesel). Currently in use.
9000106	UST	7-Eleven 1852-24443	-	-	Three, 12,000-gallon UST (2 gasoline and 1 diesel). Currently in use.

2.6.5 Public Health & Safety

The Coal Mine and Yellow Hills Sub-basins pose high hazards with the risk of potential loss of human life and property should a large flood event occur because there is currently no flood protection that offers adequate risk abatement for agricultural and developed areas downstream. Previous heavy precipitation events and flash floods have damaged residential property, agricultural lands, and community infrastructure (roads, utilities, etc.) due to debris flows, sediment deposition, and inundation. Based on flood modeling, approximately 233 structures, 88 roads/minor highways, and over 334 acres of agricultural land would experience flooding under a 10-year storm event under existing conditions. Flood modeling shows that approximately 737 structures, 173 roads/minor highways, and over 763 acres of agricultural land would experience flooding under a 500-year event under existing conditions. Additionally, Ashley Central Canal also poses public safety hazards due to the open canal traveling through heavily populated residential

areas. When filled with irrigation water, the canal can exhibit high water velocity and strong undercurrents.

2.6.6 Recreation

There are no designated parks in the project area. The Kids Canal Parkway is a designated recreational walking path within the project area, which the scoping process revealed to be a valued community resource for some local residents. Residents also described the open water in the canal in the project area as providing passive recreational value to the public. A 1992 MOA granted the Kids Canal Parkway, a walking path which follows Ashley Central Canal from 500 North to Main Street, to Uintah County via easement for public recreational use. However, this easement does not allow for public recreation in the canal due to safety hazards; the canal itself is not designated for recreational use, and swimming in the canal is not permitted by any entity. Although swimming is not permitted in the canal, residents described the importance of the canal for recreational swimming and wading, as well as passive enjoyment of the scenic quality. While the Kids Canal Parkway is a designated recreational walking path, the remaining access roads for Ashley Central Canal provide for operations and maintenance ingress and egress, but are not designated for public access and recreation.

The Coal Mine and Yellow Hills Sub-basins contain state-owned land administered by SITLA that offer unofficial, dispersed recreational opportunities for the public. Rangeland within the Coal Mine Sub-basin provides recreational opportunities, like the Jeep Trail, an all-terrain vehicle (ATV) trail for the public. The Jeep Trail was identified on topographic maps but is not mentioned, managed, or owned by any local or state government entity, and therefore may be an unofficial recreation use (Uintah County 2021). Within the watershed, the Steinaker State Park and Steinaker Reservoir provide numerous recreation opportunities, as do other public lands in the vicinity, which are managed by various state or federal agencies.

2.6.7 Land Use

The project area contains a variety of land uses, including residential, agricultural, grazing, transportation, undeveloped, and public uses. The project area is currently zoned: Mining & Grazing (MG1), Agricultural (A1), Residential Agricultural (RA1), Residential Mobile Home (MH), Residential-5 (R1), City Planned Commercial (CP2), Commercial (C1), and City Commercial (C) (Appendix C. Map 5). The proposed location for the detention basin in the Coal Mine Sub-basin is located on state-owned land administered by the SITLA and is currently zoned as MG1. The proposed location of the Yellow Hills Detention Basin is on private property in an area currently zoned as RA1. The Yellow Hills Sub-basin is likely used for livestock grazing, as evidence of previous cattle presence was observed within the Yellow Hills Sub-basin. Overall, the condition of rangeland within the project area is poor. According to the Uintah County Future Land Use Map, the Coal Mine and Yellow Hills Detention Basin sites are planned for Low Density/Agricultural land use.

2.6.8 Visual Resources & Scenic Beauty

The project area contains residential, agricultural, and transportation infrastructure. The surrounding landscape is natural hills with sagebrush, forested mountains, pastures, and farmlands. Ashley Central Canal meanders through many of these land cover types in the project area. During the scoping process for the Proposed Project residents expressed that they value the tranquility and beauty that the canal and its riparian area provide, particularly between 500 North and Main Street where the Kids Canal Parkway is located (Appendix E. Scoping Report).

The U.S. Bureau of Land Management (BLM) manages public lands to ensure that the scenic value of those lands is considered and retained. The BLM's Visual Resource Management (VRM) system provides an inventory of scenic values and sets management objectives for those values. The project area itself is not within a BLM VRM class, however, the surrounding area, and portions of the watershed being evaluated, is composed of Class II, III, and IV lands (BLM 2020).

2.6.9 Transportation & Infrastructure

Existing infrastructure in the project area includes linear transportation facilities, irrigation features, and residential structures. Irrigation infrastructure includes Ashley Central Canal and 38 metered turnouts. The existing irrigation infrastructure is deteriorating and requires continued labor and capital to perform maintenance activities. The canal is estimated to lose approximately 4,812.7 ac-ft of water annually to evaporation and seepage.

Generally, the project area follows the alignment of the canal, which flows alongside numerous roads. Portions of the project area can be accessed from roads in Vernal, Naples, and unincorporated portions of Uintah County, such as: State Highway 121, US-191, 2500 W, N 2000 W, Righteous Lane, 1500 W, US-40, 1500 S, S 500 W, W 2500 S, S Vernal Ave, 1500 E, 2000 E, S 2500 E, and E 2500 S. Ashley Central Canal also passes under U.S.-40/191as it continues southeast toward its terminus.

2.6.10 Noise

Various factors influence the perception of noise, such as volume, frequency, atmospheric conditions, background noise, and the nature of the activity generating the noise. Background noise (ambient noise) is associated with road traffic and the use of agricultural equipment. When discussing noise, special consideration must be given to noise sensitive areas and noise sensitive receptors within and adjacent to the Proposed Project. In these quiet areas, noise impacts are viewed as more substantial. Numerous noise sensitive receptors (i.e., local parks, schools, and residential areas) are scattered throughout the vicinity of the project area, but none fall directly within the project area.

2.7 Energy

The Uinta Basin is the state's main oil and gas development area and it is located within portions of Duchesne and Uintah Counties. According to the 2017 *Uintah County Resource Management Plan*, approximately 96% of oil produced in Utah during 2014 came from Duchesne, Uintah, San Juan, and Sevier Counties; this is further evidenced by the hundreds of oil and gas operators located in Uintah County. The project area is not within an oil and gas development area.

Energy usage and efficiency for Ashley Central Canal irrigation system is an issue that currently impacts agricultural producers within the Ashley Valley and the immediate project area. The unpressurized canal requires irrigators in the project area to use flood irrigation methods to irrigate their crops and pastures. This irrigation method is much less water efficient than other methods, such as sprinkler irrigation, and it relies on the use of energy resources to pump and disperse irrigation waters. The current Ashley Central Canal system does not achieve the County's objectives for water efficiency or energy conservation (Uintah County 2017).

Chapter 3 Alternatives

3.1 Project Scoping

Early in the Proposed Project development, comments were requested and received from the public, as well as local, state and federal government agencies. A scoping letter was mailed to federal, state, tribal and local agencies on May 7, 2019 to inform the agencies of the project and request comments. Twenty-four comments were received during the agency scoping period. A public scoping meeting was held on May 23, 2019 to engage the public in the planning of the Proposed Project and to request feedback on the Proposed Project. Comments were accepted orally at a public meeting and via written submittal.

As part of the NEPA process, NRCS published the Draft Plan-EA for the Proposed Project for public comment on May 31, 2022. The Draft Plan-EA Open House was held on June 14, 2022. Based on the comments received during the June 14, 2022 meeting, a design variation was developed to address public concerns related to the Kids Canal. NRCS held a second Public Meeting on July 27, 2022. The purpose of the Public Meeting was to follow up on the public comments that were received regarding the Kids Canal, to present the Kids Canal design variation, and to provide an opportunity for public comment on the design variation and overall project. Based on comments received during the July 27th public meeting, the Draft Plan-EA was updated and published for third public comment period and a third Public Meeting was held on November 15, 2022 at the Uintah County Western Park Event Center. The third public comment period was held from November 7, 2022 to December 9, 2022. Based on coordination with community stakeholders at the November 15th Public Meeting, improvements to the Kids Canal Parkway were added to the recreation component of the project, and additional cultural resource mitigation components were discussed. An additional public comment period was held from January 18, 2023 to February 17, 2023 to provide stakeholders an opportunity to review the recreation and cultural mitigation updates in the Draft Plan-EA. The FONSI was issued on May 25, 2023. The NOA for the Final Plan-EA and FONSI will be published on June 7, 2023. A Scoping Report was prepared that provided a summary of the scoping process, including stakeholder comments and public meetings (Appendix E).

3.2 Formulation Process

The formulation of the Proposed Project alternatives adhered to NRCS procedures in the NWPM (NRCS 2014b) Parts 500 through 505, and the NWPH (NRCS 2014a), Parts 600 through 606, the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (U.S. Water Resources Council [USWRC] 1983), and additional NRCS watershed planning policy.

The project team, composed of environmental and engineering professionals, sponsor representatives, and agency representatives, developed the Proposed Project alternatives. Three alternatives were formulated that addressed the purpose and need for the project, the project objectives, and the Federal Objective as listed in PR&G 1.2. Additionally, alternatives were formulated with consideration to four criteria: 1) completeness, 2) effectiveness, 3) efficiency, and 4) acceptability. Individual and combinations of project measures were selected with regard to achieving the purpose and need, balancing engineering complexity and feasibility, minimizing economic and environmental impacts, and adhering to budgetary constraints.

3.3 Alternatives and Options Considered but Eliminated from Detailed Study

In accordance with NEPA (40 CFR 1502.14), some initial design alternatives were eliminated from further analysis due to high cost, logistics, environmental reasons, or other critical factors. The alternatives considered were the No Action Alternative, Alternative 1, Alternative 2, and Alternative 3. Of the three alternatives considered, Alternative 2 was eliminated from detailed study because it was not feasible due to high cost and loss of agricultural water management benefits.

3.3.1 Alternative 2—Canal Enclosure, Trail & Upper Reach No Pressurization

Alternative 2 would pipe 9.6 miles of the total Ashley Central Canal length with 10-inch to 63-inch high-density polyethylene (HDPE) pipe and fittings, replace 38 turnouts with new metered turnouts, install two screening structures (one at the Thornburg Diversion and one at the entrance of the Steinaker Service Canal into the Ashley Central Canal), and construct a new inlet control structure at the McNaughten Gulch tie-in to turnout #13. The upper 2.9 miles of the canal would be piped without pressurization and the bottom 6.7 miles of the canal would be piped and pressurized. The second screen structure would allow water from the Steinaker Service Canal to enter midway along the Ashley Central canal pipe, below the non-pressurized piped section. The existing open canal would be regraded to function as a floodwater conveyance facility after piping. The entire canal would remain an open flood conveyance facility with the exception of the final 1,500 ft of the canal through Naples, which would be piped to convey floodwater. Maintained as a floodwater conveyance, the Ashley Central Canal would have the capacity to handle a 100-year storm event.

This alternative would also construct 3 miles of 10-foot-wide asphalt multi-use recreation trail along a portion of the Steinaker Service Canal and the Ashley Central Canal. In addition to the multi-use recreation trail, a picnic table, benches, fencing, and an information kiosk would be installed. The installation of the trail would offer important and safe access to educational, recreational, and business facilities.

Alternative 2 would also construct two below-grade detention basins, Coal Mine and Yellow Hills. Spoils from the excavation of the detention basins would be utilized on site to grade and contour the basins or would be removed by a qualified contractor to a local, authorized materials pit. The Coal Mine and Yellow Hills Detention Basins would be designed to fully detain floodwater from the 10-year, 24-hour storm without exercising the overflow, auxiliary spillway. See Section D.2.3.2 in Appendix D for additional technical details about Alternative 2 and its components. Alternative 2 was estimated to cost $20,098,841.

Alternative 2 was eliminated from detailed study due to the estimated cost of the alternative and associated economic impacts, and the loss of pressurizing benefits to agricultural users of the upper section. Piping the upper section of Ashley Central Canal without pressurizing eliminates the need to bring the pressure back to atmospheric pressure to introduce water from the Steinaker Service Canal; however, this approach requires a larger pipe and thus, is more expensive. Also, the water conservation, irrigation efficiency and economic benefits from providing pressure to those users of the upper section are lost under Alternative 2. Maintaining the desired efficiency and realizing the desired benefits with this alternative was determined unfeasible. Alternative 2 was dismissed from further study as a result.

3.4 Alternatives Evaluated and Revised

Alternative 1 was considered for detailed study in the Draft Plan-EA (dated May 2022) and brought forth as the Preferred Alternative. Through the Draft Plan-EA public involvement process, several comments were provided by the public that required further consideration, such as the permanent impacts to vegetation, wildlife, cultural resources, recreation, scenic beauty, and visual resources along the Kids Canal portion of Ashley Central Canal. As a result of the public involvement process, Alternative 1 was revised to address the substantive comments made by the public during the Draft Plan-EA public comment periods. The revised Alternative 1 is now presented as Alternative 3. A description of the original Alternative 1—Canal Enclosure, Trail & Full Pressurization is provided below.

3.4.1 Alternative 1—Canal Enclosure, Trail & Full Pressurization

Alternative 1 would pipe and pressurize 9.6 miles of the total Ashley Central Canal length with 16-inch to 48-inch HDPE pipe and fittings, reconstruct the Thornburg Diversion, replace 38 turnouts with new metered turnouts, install an energy dissipation structure, install two screening structures (one at the Thornburg Diversion and one at the entrance of the Steinaker Service Canal into the Ashley Central Canal), and construct a new inlet control structure at the McNaughten Gulch tie-in to turnout #13. The second screening structure would allow water from Steinaker Service Canal to enter midway along the piped Ashley Central Canal below the energy dissipation structure. Piping and pressurizing Ashley Central Canal would facilitate irrigators' ability to change from flood irrigation to sprinkler irrigation. Once the irrigation pipeline is installed, the existing open canal would be regraded to function as a floodwater conveyance facility. The entire canal would remain an open floodwater conveyance facility with the exception of the final 1,500 ft of the canal through Naples, which would be piped and buried to convey floodwater and tail water. The Ashley Central Canal would have the capacity to handle a 100-year storm event.

This alternative would also construct 3 miles of 10-foot-wide asphalt recreation trail along a portion of the Steinaker Service Canal and the Ashley Central Canal. In addition to the multi-use recreation trail, a picnic table, benches, fencing, and an information kiosk would be installed. The installation of the trail would offer safe access to educational, recreational, and business facilities for the traveling public.

Alternative 1 would also construct two below-grade detention basins, Coal Mine (68.4 ac-ft) and Yellow Hills (72.3 ac-ft). Spoils from the excavation of the detention basins would be utilized on site to grade and contour the basins or would be removed by a qualified contractor to a local, authorized materials pit. No embankment would be built around the detention basins, but a guide berm (less than one foot in height) would be installed where needed to direct floodwaters flowing into the basins. An auxiliary, overflow spillway would be installed for each basin at the downstream overbank (east side of the basin). These 72.3 ac-ft and 68.4 ac-ft detention basins would allow for critical flood protection in the Ashley Valley. The Coal Mine and Yellow Hills Detention Basins would be designed to fully detain floodwater from the 10-year, 24-hour storm without exercising the overflow spillway. The Coal Mine and Yellow Hills Detention Basins would have 26.76 ac-ft and 7.68 ac-ft, respectively, of additional storage above the 10-year peak storage, providing partial flood control for larger storm events. The Coal Mine and Yellow Hills Detention Basins would have a 30-inch diameter low-level outlet pipe that directs water to the Highline Canal and Ashley Upper Canal, respectively.

As part of separately funded projects involving the Highline and Ashley Upper Canals, the canals will be reconstructed to convey floodwaters from a 10-year, 24-hour storm event. Improvements associated with the Highline and Ashley Upper Canals are currently under construction and will be fully complete in 2022, well before the Proposed Project is implemented. Alternative 1 would reduce flood risk but would not induce flooding along Highline and Ashley Upper Canals, nor at their outlets to the southeast. These canals have intercepted natural drainage flows from the Coal Mine and Yellow Hills basins since their construction in the 1800s. The Highline and Ashley Upper Canals do not connect to Ashley Central Canal nor Ashley Creek, as they have a diffuse outlet in the Ashley Valley, near the base of Asphalt Ridge, approximately 3 miles south of the Ashley Central Canal terminus. For storm events that exceed the capacity of the basins and Highline and Ashley Upper Canals, floodwaters would spread diffusely over the floodplain below Coal Mine and Yellow Hills drainages. In that scenario, floodwaters could reach Ashley Creek. Under normal conditions, tailwater from the Highline and Ashley Upper Canals is conveyed through a web of natural channels at their outlet that drain toward the Green River.

Even though the Highline and Ashley Upper Canals are not hydraulically connected to the Ashley Central Canal, a flood route was evaluated to determine the feasibility of hydraulically connecting them. The capacity of the Ashley Central Canal was evaluated with the 100-year storm event, see additional technical specifications in Section D.2.3.2 in Appendix D, therefore no connection between the canals was considered further.

Alternative 1 is estimated to cost $18,961,498.

3.5 Alternatives Considered for Detailed Study

Two alternatives considered for the Proposed Project were carried forward to study in greater detail as part of this Plan-EA: The No Action Alternative and Alternative 3. A description of these alternatives is presented below.

3.4.1 No Action Alternative

Under this alternative, the sponsor would not pipe or pressurize Ashley Central Canal, and the facility would continue to operate as an open canal delivery system without the benefits of enclosure. Typical operation and maintenance activities associated with the open canal delivery system include but are not limited to: filling the canal, dewatering the canal, stabilizing the canal, controlling trash, vegetation and rodents within the canal, repairing vandalism, addressing seepage of irrigation water along the open canal, cleaning and/or replacing culverts, repairing mechanical equipment, and inspecting system components.

The entire canal, including the Kids Canal section, would remain in their existing condition. The No Action Alternative would not improve recreational infrastructure in the Kids Canal Parkway and the parkway would remain in its existing condition. The No Action Alternative is not anticipated to result in predictable actions by others that would affect the Kids Canal Parkway.

The No Action Alternative would not construct the Coal Mine and Yellow Hills Detention Basins to address flooding concerns in the Ashley Valley Watershed. The current health and safety risks would remain and it is anticipated that local, state, and/or federal agencies would respond to flooding events on a case-by-case scenario as they occur.

3.4.2 Alternative 3—Canal Enclosure, Kids Canal & Full Pressurization

The Proposed Action defines the watershed area as the two 6th field subwatersheds (12-digit HUC) that contain proposed project features:

- Coal Mine-Ashley Creek (140600100902)
- City of Vernal-Ashley Creek (140600100903)

The watershed area is shown on Figure 1-1 and Map 1 in Appendix B. The total watershed area is 45,907 acres.

Alternative 3 represents the revised Alternative 1 and includes specific design measures for the Kids Canal and the revised recreation component focused on the Kids Canal Parkway path, and associated cultural mitigation measures that would address the Kids Canal water feature. Alternative 3 would pipe and pressurize 9.6 miles of the total Ashley Central Canal length with 16-inch to 48-inch HDPE pipe and fittings, reconstruct the Thornburg Diversion, replace 38 turnouts with new metered turnouts, install an energy dissipation structure, install two screening structures (one at the Thornburg Diversion and one at the entrance of the Steinaker Service Canal into the Ashley Central Canal), and construct a new inlet control structure at the McNaughten Gulch tie-in to turnout #13. The second screening structure would allow water from Steinaker Service Canal to enter midway along the piped Ashley Central Canal below the energy dissipation structure. Piping and pressurizing Ashley Central Canal would facilitate irrigators' ability to change from flood irrigation to sprinkler irrigation. Once the irrigation pipeline is installed, the existing open canal would be regraded to function as a floodwater conveyance facility. The entire canal would remain an open floodwater conveyance facility with the exception of the final 1,500 ft of the canal through Naples, which would be piped and buried to convey floodwater and tail water. The Ashley Central Canal would have the capacity to handle a 100-year storm event.

The 0.5-mile section of the Ashley Central Canal between 500 North and Main Street is referred to as the Kids Canal (see Kids Canal map in Appendix B). Currently, this section of Ashley Central Canal is open with significant tree coverage sustained by seepage. The pipeline construction and placement for most of the 9.6 miles of the Ashley Central Canal would be designed for placement in the east bank of the canal. However, most of the trees along Kids Canal are growing on the east bank of the canal. Under Alternative 3, the proposed design has been modified through this section to install the pipeline in the west bank of the canal adjacent to 1500 West. Trees present along the west bank would be protected, whenever feasible. The majority, if not all, of the trees on the east bank would be preserved. Less than a third of the trees on the west bank are anticipated to survive construction, however the majority of those that can be preserved would be on the lower section near Main Street. The design rendering for Kids Canal is included in Appendix B.

Under Alternative 3, Kids Canal would remain open and unlined. The path would be improved with an asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables. As part of the cultural resource mitigation for the Proposed Project, an informational kiosk about the Kids Canal history would be constructed, supplemental water shares would be purchased and diverted into the Kids Canal section in order to sustain the trees that remain along the canal after construction, while also providing open water for aesthetic and passive recreation purposes, and public outreach materials on the Kids Canal history would be produced. On August 9, 2022, Uintah County Special Services District #1 voted to allow water associated with the Uintah County Golf Course to flow through Kids Canal. The golf course water

is currently delivered through the existing turnout near 500 S. This water typically fluctuates between 1 to 2 cfs throughout the irrigation season. In addition to the golf course water, Uintah County has agreed to purchase additional water equivalent to 0.5 cfs for the duration of the irrigation season. Fifteen primary water shares (15 ac-ft) have already been purchased by ACIC and designated for use in the Kids Canal section. The Uintah County Special Services District #1 meeting minutes, and documentation from ACIC for the primary water shares are included in Appendix E. Supplemental water would be introduced back into Kids Canal by modifying an existing user turnout near the upper end of Kids Canal to allow water to be turned into the Kids Canal section. This turnout would include a valve and meter. At the end of the Kids Canal, the supplemental water would flow into the Uintah County pipe inlet. Water would be collected in a box and would flow into a new non-pressurized pipe to an existing Ashley Central Canal user turnout near 500 S where it would be delivered to existing shareholders on the canal. A Flow Measurement Study for the Kids Canal was conducted in August 2022 to determine the amount of water required to sustain the preserved trees and provide enough flow to account for seepage. The Flow Measurement Study demonstrated that 1.75 cfs through Kids Canal would be required to sustain the trees, to carry water to the lowest portion of Kids Canal, and to provide flow for passive recreation purposes. Although studies demonstrate that the proposed supplemental water shares should be enough to support the trees, additional water may be necessary depending on the water year (Appendix E).

Alternative 3 would also construct two below-grade detention basins, Coal Mine (68.4 ac-ft) and Yellow Hills (72.3 ac-ft). Spoils from the excavation of the detention basins would be utilized on site to grade and contour the basins or would be removed by a qualified contractor to a local, authorized materials pit. No embankment would be built around the detention basins, but a guide berm (less than one foot in height) would be installed where needed to direct floodwaters flowing into the basins. An auxiliary, overflow spillway would be installed for each basin at the downstream overbank (east side of the basin). These 68.4 ac-ft and 72.3 ac-ft detention basins would allow for critical flood protection in the Ashley Valley. The Coal Mine and Yellow Hills Detention Basins would be designed to fully detain floodwater from the 10-year, 24-hour storm without exercising the overflow spillway. The Coal Mine and Yellow Hills Detention Basins would have 26.76 ac-ft and 7.68 ac-ft, respectively, of additional storage above the 10-year peak storage, providing partial flood control for larger storm events. The Coal Mine and Yellow Hills Detention Basins would have a 30-inch diameter low-level outlet pipe that directs water to the Highline Canal and Ashley Upper Canal, respectively.

As part of separately funded projects involving the Highline and Ashley Upper Canals, the canals will be reconstructed to convey floodwaters from a 10-year, 24-hour storm event. Improvements associated with the Highline and Ashley Upper Canals are currently under construction and will be fully complete in 2022, well before the Proposed Project is implemented. Alternative 3 would reduce flood risk but would not induce flooding along Highline and Ashley Upper Canals, nor at their outlets to the southeast. These canals have intercepted natural drainage flows from the Coal Mine and Yellow Hills basins since their construction in the 1800s. The Highline and Ashley Upper Canals do not connect to Ashley Central Canal nor Ashley Creek, as they have a diffuse outlet in the Ashley Valley, near the base of Asphalt Ridge, approximately 3 miles south of the Ashley Central Canal terminus. Even though the Highline and Ashley Upper Canals are not hydraulically connected to the Ashley Central Canal, a flood route was evaluated to determine the feasibility of hydraulically connecting them. The capacity of the Ashley Central Canal was evaluated with the 100-year storm event. For additional specifications related to the hydraulics of the detention

basins and storm flows, see Section D.2.3.2 in Appendix D. No connection between the canals was considered further.

Alternative 3 is estimated to cost $19,601,669. Access to the project area can be achieved at numerous locations using public roads (see Map 2 in Appendix B). Map 2 identifies the project area and is included in Appendix B.

Construction of the pressurized irrigation pipe is anticipated to start in fall 2023 and complete in fall 2026, with construction activities taking place outside of the irrigation season. Construction of the improved Kids Canal path would begin in the spring and summer of 2024. Construction for the detention basins would begin in fall 2023 and complete fall of 2024. Prior to construction, any necessary landowner approvals for improvements along the Kids Canal will be obtained, where appropriate. Backhoes, excavators, haul trucks, and other smaller construction vehicles and equipment would be used to complete Alternative 3.

3.5 National Economic Development

The NED Alternative is the alternative or combination of alternatives that reasonably maximizes the net benefit of the project while protecting sensitive environmental resources. The net economic benefit is the benefit minus the cost of the project.

3.6 Summary and Comparison of Alternative Plans

The No Action Alternative and Alternative 3 have been compared against each other to discern the merits and disadvantages of each alternative. A summary of this evaluation is presented in Table 3-1.

Table 3-1. Summary of Alternatives

Resource Area	No Action Alternative	Alternative 3
Soils & Geology		
Upland Erosion & Sedimentation	Continued bank erosion and sedimentation during flood events.	Under Alternative 3, soil would be excavated for the construction of the detention basins. Spoils from the excavation of the detention basins would be utilized on site to grade and contour the basins or would be removed by a qualified contractor to a local, authorized materials pit. Best management practices (BMPs) would be implemented to prevent erosion and sediment delivery during construction. Future erosion would be reduced by detaining sediment and floodwaters in the detention basins.
Water Resources		
Surface & Groundwater Quantity & Quality	Sediment, nutrients, pathogens, pesticides, and other pollutants transported to 303(d) listed surface waters would remain the same due to continued	Alternative 3 may temporarily impact surface water quality during construction. BMPs would be implemented to minimize and avoid surface and groundwater quality impacts. Alternative 3 would maintain or improve water quality and water quantity. The piped and pressurized system is expected to eliminate water lost to seepage and evaporation (approximately

Resource Area	No Action Alternative	Alternative 3
	flood irrigation and tailwater.	4,812.7 ac-ft). Canal seepage and flood irrigation methods likely contribute to groundwater recharge in the project area through deep percolation, though the extent to which seepage influences groundwater recharge is unknown because there is no current, available data evaluating direct groundwater recharge sources and volumes. **Note:** *Given public concern about the potential loss of the Kids Canal section, and the need to sustain trees along Kids Canal, under Alternative 3, supplemental water shares would be purchased and diverted into the Kids Canal from the Uintah County Golf Course and Ashley Central Canal as part of the cultural mitigation for the Proposed Project.* The golf course water is currently delivered through the existing turnout near 500 S. This water typically fluctuates between 1 to 2 cfs throughout the irrigation season. In addition to the golf course water, Uintah County has agreed to purchase additional water equivalent to 0.5 cfs for the duration of the irrigation season. Fifteen primary shares of Ashley Central Canal water have already been purchased and allocated toward the Kids Canal. The Uintah County Special Services District #1 meeting minutes, and documentation from ACIC for the primary water shares are included in Appendix E. Supplemental water would be introduced back into Kids Canal by modifying an existing user turnout near the upper end of Kids Canal to allow water to be turned into the Kids Canal section. This turnout would include a valve and meter. At the end of the Kids Canal, the supplemental water would flow into the Uintah County pipe inlet. Water would be collected in a box and would flow into a new non-pressurized pipe to an existing Ashley Central Canal user turnout near 500 S where it would be delivered to existing shareholders on the canal. A Flow Measurement Study for the Kids Canal was conducted in August 2022 to determine the amount of water required to sustain the preserved trees and provide enough flow to account for seepage. The Flow Measurement Study demonstrated that 1.75 cfs through Kids Canal would be required to sustain the trees, to

Resource Area	No Action Alternative	Alternative 3
		carry water to the lowest portion of Kids Canal, and to provide flow for passive recreation purposes (Appendix E). Alternative 3 is anticipated to reduce degradation of 303(d) listed streams by facilitating the change from flood irrigation to sprinkler irrigation and thereby reducing or eliminating sediment and nutrient laden tailwaters to any natural drainages that might receive it. The transition to more efficient irrigation practices facilitated by Alternative 3 is anticipated to impact irrigation water quantity by reducing tailwater and increasing irrigation efficiency, which would increase irrigation water availability. Canals within the project area (i.e., Highline Canal, Ashley Upper Canal, Ashley Central Canal) have been intercepting surface water runoff since their construction in the 1800s. Therefore, impacts from the detention basins to natural drainages downstream of the Coal Mine and Yellow Hill sub-basins are not anticipated, as the flow patterns of natural drainages would not change from current existing conditions. The Highline and Ashley Upper Canals do not connect to Ashley Central Canal nor Ashley Creek. Highline and Ashley Upper Canals have a diffuse outlet in the Ashley Valley, near the base of Asphalt Ridge, approximately 3 miles south of the Ashley Central Canal terminus. For storm events that exceed the capacity of the basins and Highline and Ashley Upper Canals, floodwaters would spread diffusely over the floodplain below Coal Mine and Yellow Hills drainages. In that scenario, floodwaters could reach Ashley Creek. Under normal conditions, tailwater from the Highline and Ashley Upper Canals is conveyed through a web of natural channels at their outlet that drain toward the Green River.
Clean Water Act / Waters of the U.S., including Wetlands	No effect.	Alternative 3 would maintain or improve water quality and water quantity. Alternative 3 is projected to conserve 4,812.7 ac-ft of water per year in Ashley Valley, which could indirectly benefit Waters of the U.S., such as Ashley Creek, Green River, or Steinaker Reservoir. No discharge or placement of dredged or fill material into Ashley Creek would occur. The canal improvements are anticipated to be

Resource Area	No Action Alternative	Alternative 3
		agriculturally exempt from the 404-permitting process; however, a stream alteration permit would be required from the State of Utah because work would be completed within 30 ft of Ashley Creek. It is anticipated that the detention basins would not require a 404 permit, nor a stream alteration permit.
Regional Water Management Plan	No effect. No investment in water infrastructure or associated water savings.	Alternative 3 aligns with the Uintah Basin Plan's key actions to ensure a productive future for water resources. These key actions include investing in water infrastructure, improving water conservation measures, and addressing environmental, recreational, and other needs.
Floodplain Management	Continued risk for flood hazards and property damage.	Portions of the project area occur in the designated 100-year floodplain. The detention basins would decrease the risk of flooding in the event of a 10-year storm or larger storm event. Alternative 3 would provide flood prevention and flood damage reduction from runoff, erosion, and sediment delivery to areas downstream of Coal Mine and Yellow Hills Sub-basins during large storm events. Maintaining the Ashley Central Canal as a flood control facility would maintain the existing flood attenuation benefit it provides. The proposed detention basins would not divert floodwaters out of their respective historical drainages, but rather reduce peak flood flows from Coal Mine and Yellow Hills drainages. The Highline and Ashley Upper Canals do not connect to Ashley Central Canal nor Ashley Creek. Highline and Ashley Upper Canal have a diffuse outlet in the Ashley Valley, near the base of Asphalt Ridge, approximately 3 miles south of the Ashley Central Canal terminus. For storm events that exceed the capacity of the basins and Highline and Ashley Upper Canals, floodwaters would spread diffusely over the floodplain below Coal Mine and Yellow Hills drainages. In that scenario, floodwaters could reach Ashley Creek. Under normal conditions, tailwater from the Highline and Ashley Upper Canals is conveyed through a web of natural channels at their outlet that drain toward the Green River. As such, Alternative 3 would reduce flood risk, but would not induce flooding in the project area. No increased flood hazard or other adverse effect to the existing natural and beneficial values of

Resource Area	No Action Alternative	Alternative 3
		the floodplain or lands adjacent to or downstream is anticipated.
Air Quality		
Clean Air Act / National Ambient Air Quality Standards	No effect.	Short-term increases in emissions during construction are anticipated to be minor and localized. BMPs would be implemented to minimize air quality impacts. Emission rates are not expected to increase in the long-term.
Climate & Greenhouse Gases	No effect.	Short-term increases in emissions during construction are anticipated to be minor and localized. BMPs would be implemented to minimize air quality impacts. Emission rates are not expected to increase in the long-term.
Plants		
Special Status Plant Species	No effect.	May Affect Not Likely to Adversely Affect determination for Ute Ladies'-tresses. BMPs and conservations measures utilized by the project and provided by the USFWS would be implemented to avoid and minimize impacts to special status plant species.
Noxious Weeds & Invasive Plants	No effect.	Disturbed areas would be reseeded to encourage the establishment of native, drought-tolerant vegetation. Other BMPs, as discussed in Section 4.4.2.2, would be implemented to control and prevent the introduction and spread of any invasive species or noxious weeds.
Riparian Areas	Benchmark conditions may degrade water quality and wildlife benefits due to erosion of the banks during storm events.	Currently, the Kids Canal section of Ashley Central Canal is open with significant tree coverage sustained by canal seepage. The pipeline construction for most of the 9.6 miles of the Ashley Central Canal has been designed for placement in the east bank of the canal. However, most of the trees along Kids Canal are growing on the east bank of the canal. Under Alternative 3, the proposed design has been modified through this section to install the pipeline in the west bank of the canal adjacent to 1500 West. Trees present along the west bank would be protected, whenever feasible. The majority, if not all, of the trees on the east bank would be preserved. Less than a third of the trees on the west bank are anticipated to survive construction, however the majority of those that can be preserved would be on the lower section near Main Street. The design rendering for Kids Canal is included in Appendix B. Given public concern about the potential loss of the Kids Canal section, and the need to

Resource Area	No Action Alternative	Alternative 3
		sustain trees along Kids Canal, supplemental water shares would be purchased and diverted into the Kids Canal from the Uintah County Golf Course and Ashley Central Canal as part of the cultural resource mitigation for the Proposed Project. Fifteen primary shares of Ashley Central Canal water have already been purchased and allocated toward the Kids Canal. A Flow Measurement Study for the Kids Canal was conducted in August 2022 to determine the amount of water required to sustain the preserved trees and provide enough flow to account for seepage. The Flow Measurement Study demonstrated that 1.75 cfs through Kids Canal would be required to sustain the trees, to carry water to the lowest portion of Kids Canal, and to provide flow for passive recreation purposes. Although studies demonstrate that the proposed supplemental water shares should be enough to support the trees, additional water may be necessary depending on the water year (Appendix E). The riparian area associated with Ashley Central Canal would be temporarily disturbed during construction; construction practices would remove vegetation in riparian areas. Disturbed areas would be reseeded and restored to pre-construction conditions. Mature trees and shrubs may be removed during construction to allow for efficient pipe installation. The loss of hydrology from piping Ashley Central Canal would result in the permanent removal of riparian vegetation within the canal and at the immediate canal edge. Under existing conditions, the open, unlined canal has an average of 25 feet of riparian vegetation established across its prism at the canal edges along its entire length. Once piped, approximately 28.3 acres of seepage induced riparian vegetation would be lost. Supplemental water would be provided by the ACIC and the Uintah County Golf Course to maintain existing flows in the Kids Canal and to support the trees along the Kids Canal section. Alternative 3 would protect 1.2 acres of tree cover on the east side of the Kids Canal portion of Ashley Central Canal. The proposed supplemental water shares should be enough to support the trees,

Resource Area	No Action Alternative	Alternative 3
		however additional water may be necessary depending on the water year. No loss of vegetation outside the canal prism, nor loss of vegetation supported by irrigation water is anticipated. Ultimately, Alternative 3 would maintain or improve water quality, water quantity, and fish and wildlife benefits provided by natural riparian areas in the Watershed by reducing flood impacts and sediment load through the construction of the detention basins. Alternative 3, along with other projects in the project area, would result in cumulative negative impacts to riparian vegetation associated with the open canal prisms in the project area, such as alterations in the light regime, loss of seepage induced riparian habitat and changes in vegetative assemblages in the areas where the canal was once open. Cumulative impacts to riparian areas would be minimized to the greatest extent practicable by implementing BMPs, as stated previously, and cumulative impacts beyond the project area would not be anticipated.
Animals		
Wildlife & Wildlife Habitat	No effect.	Piping the Ashley Central Canal is anticipated to permanently remove a source of drinking water for wildlife, except along the Kids Canal, and may directly and indirectly remove vegetation that wildlife use for forage, shelter, and travel routes. However, vegetation along the east side and portions of the west side of the Kids Canal would be protected. Construction practices would both temporarily and permanently disturb wildlife and wildlife habitat in the canal prism. Areas disturbed during construction would be reseeded to encourage the establishment of native, drought-tolerant vegetation. It is anticipated that drought-tolerant species would persist; however, the success rate of establishment may be low. An incidental nest survey would be completed prior to vegetation removal. Wildlife may be temporarily impacted during construction due to noise. Based on comments received from the Public Lands Policy Coordinating Office (PLPCO) in collaboration with UDWR, and that the Coal Hill detention basin is in crucial winter mule deer habitat, no construction activities at the Coal Hill

Resource Area	No Action Alternative	Alternative 3
		detention basin may occur from December 1 – April 15.
Special Status Animal Species	No effect.	No Effect. BMPs, as discussed in the BA (Appendix E), would be implemented to avoid and minimize potential impacts to special status animal species. No impacts to special status animal species are anticipated.
Migratory Birds / Bald and Golden Eagles	No effect.	Except for the Kids Canal portion of Ashley Central Canal, Alternative 3 would permanently remove a source of water for avian species and a source of seepage water for vegetation along the canal corridor, which would likely result in the loss of hydrophytic vegetation in the canal prism, including mature trees and shrubs, that may be used by migratory birds. Construction of Alternative 3 may permanently remove trees and shrubs from the riparian edge along Ashley Central Canal. An incidental nest survey would be completed prior to vegetation removal to help minimize or avoid potential impacts to nesting or breeding birds, if present. If any active migratory bird nests are observed, the NRCS Biologist would be contacted, and construction would pause to determine the appropriate course of action.
Human Environment		
Socioeconomics	Capital and labor requirements would increase due to flooding and continued deterioration of the Ashley Central Canal.	Alternative 3 is anticipated to have a beneficial impact on socioeconomics by conserving an estimated 4,812.7 ac-ft of water per year, preventing flood damage and resulting in approximately $2,482,400 in flood reduction savings, improving agricultural profitability, decreasing operation and maintenance costs, and temporarily creating jobs within the project area during construction.
Environmental Justice & Civil Rights	No effect.	Minority individuals and low-income populations are present in the project area. These population percentages are not significantly different than the populations in Uintah County. Although there are residents in the project area that qualify for EJ protections (i.e., EJ populations), the communities in which the Proposed Project occurs do not qualify as EJ communities (i.e., overburdened communities). No disproportionately high and adverse environmental or human health effects on low-income or minority populations would occur because no adverse environmental effects are

Resource Area	No Action Alternative	Alternative 3
		anticipated from implementation of the Proposed Project.
Cultural, Historic, & Paleontological Resources	No effect.	Based on the Cultural Resources Report prepared for the project area, the NRCS determined that four NRHP-eligible sites are present in the project area. Alternative 3 would have no adverse effect on three of the four NRHP-eligible sites (i.e., 42UN2676/Highline Canal, 42UN2680/Ashley Upper Canal, and 42UN5471/Steinaker Service Canal). Alternative 3 would have an adverse effect on Ashley Central Canal, the NRHP-eligible site (42UN5195). Ashley Central Canal was key to the settlement of Vernal and the irrigation history of Ashley Valley. As a result, Ashley Central Canal is eligible for the National Register under Criterion A. Furthermore, Ashley Central Canal is eligible for the National Register under Criterion B due to being associated with Sterling Driggs Colton, who was noted for his role in the canal's development, and as the first elected sheriff. Ashley Central Canal was nominated for the National Register in 1983. Section 106 consultation has been completed for the Proposed Project. SHPO concurred with the eligibility and effect determinations described in the Cultural Resource Report (Appendix A). NRCS submitted letters to the Tribes for concurrence and compliance with Section 106 requirements. The Tribes have not responded to the request for consultation. Tribal consultation letters are included in Appendix A. Given that the majority of the Ashley Central Canal will remain an open floodwater conveyance facility, thus reducing the level of adverse effects, the focus of mitigation efforts will be for the Kids Canal. In accordance with 36 CFR Part 800.6, NRCS mitigated the adverse effects to Ashley Central Canal and Kids Canal (42UN5195) through the development of a MOA between the Utah SHPO, the NRCS, Uintah County, ACIC, and Special Services District #1, along with the Friends of the Kids Canal and Ahrnsbrak Family as concurring parties. Mitigation stipulations include the supplemental water shares that have been and will be

Resource Area	No Action Alternative	Alternative 3
		purchased and diverted to Kids Canal to sustain the vegetation, passive recreation opportunities, and scenic quality. In addition, an information kiosk will be installed at the Kids Canal, and additional public outreach materials will be developed. The MOA was executed pursuant to compliance with Section 106 of the National Historic Preservation Act prior to the approval of the Final EA and has been included as an Appendix. Given the Utah DNR paleontological file search and recommendations, Alternative 3 is not anticipated to uncover significant fossils and is therefore anticipated to have no impact on paleontological resources.
Hazardous Materials	No effect.	Alternative 3 is anticipated to have no impact on hazardous materials in the project area. BMPs, such as a Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention, Control, and Countermeasure (SPCC) Plan, would be implemented during construction to prevent the introduction of hazardous materials into the environment.
Public Health & Safety	Without the protection of detention basins, the risk and safety concerns associated with continued flooding would remain. The safety risk associated with the open canal would remain.	The risk and safety concerns associated with flooding would reduce with the installation of two, properly sized detention basins. The Highline and Ashley Upper Canals are existing piped canals in the project area and the detention basins would be intended to reduce the potential for flooding using the Highline and Ashley Upper Canals to slowly convey floodwaters; therefore, Alternative 3 would reduce flood risk, but would not induce any additional flooding. Alternative 3 would eliminate a source of open water in residential areas that could pose safety risks.
Recreation	No effect.	Alternative 3 may impact dispersed public recreation opportunities in the Coal Mine and Yellow Hills Sub-basin. Under Alternative 3, the pipe alignment along the Kids Canal portion of Ashley Central Canal would be shifted to the west to maintain the existing unlined canal. As part of the cultural mitigation for the Proposed Project, supplemental water shares would be purchased and provided by the ACIC and the Uintah County Golf Course to sustain flows in the Kids Canal and protect the open water feature that provides passive recreational

Resource Area	No Action Alternative	Alternative 3
		opportunities to the public. The Kids Canal Parkway path would be improved with an asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables. Although residents use Ashley Central Canal for swimming and wading; the Ashley Central Canal itself not designated for recreational use, and swimming in the canal is not permitted by any entity. Under Alternative 3, an easement would be placed on SITLA lands and the area would be used for flood protection, however, the area would likely still be open to the public. Alternative 3 would impact unofficial public recreation sites with the installation of flood control structures on state land. Alternative 3 would provide an annual benefit of $59,700 from recreation improvements.
Land Use	No effect.	Property acquisition and an easement would be acquired prior to construction of the detention basins. Alternative 3 would alter land use designations in Coal Mine and Yellow Hills Sub-basins from undeveloped rangeland and private land to flood protection.
Visual Resources & Scenic Beauty	No effect.	Alternative 3 would result in temporary impacts to visual resources associated with construction disturbance. Alternative 3 would permanently remove the manmade open water feature of Ashley Central Canal by piping and contouring the canal to function as a floodwater conveyance. During the scoping process for the Proposed Project, residents expressed that they value the tranquility and beauty that the canal and its riparian area provide, particularly between 500 North and Main Street where the Kids Canal Parkway is located. In response to public input, permanent impacts to visual resources and scenic beauty would be minimized in the Kids Canal section by modifying the pipe alignment and avoiding trees on the east bank and protecting as many trees as possible on the west bank. Under Alternative 3, Uintah County Special Services District #1 and ACIC would provide supplemental water to the Kids Canal section to maintain the existing open water conditions, to sustain the protected trees, and to retain the existing recreation opportunities. The Alternative 3 would result in long-term impacts on the scenic quality of the

Resource Area	No Action Alternative	Alternative 3
		Ashley Canal prism, but there would no long-term impacts to scenic quality in the general area. There would be visual impacts to some residences located directly along the canal alignment from the removal of the open water feature, construction-related vegetation disturbance, and permanent loss of vegetation from the loss of hydrology.
Transportation & Infrastructure	Under existing conditions, the roads and State Highway could be damaged and/or closed during a large storm event.	Alternative 3 would improve irrigation infrastructure. Construction of Alternative 3 would require several road crossings. Permits from Vernal City, Naples City, Uintah County, and the Utah Department of Transportation (UDOT) would be necessary.
Noise	No effect.	Temporary increases in noise associated with construction equipment would occur in the project area.
Energy		
Energy	No effect.	Post-construction, Alternative 3 likely would improve energy efficiency by reducing energy demands to move and distribute irrigation water.
National Economic Development 1/		
Construction Cost	$0	$16,762,861
Project Environmental, Engineering, and Administrative Costs	$0	$2,838,808
Total Project Cost (Installation Cost)	**$0**	**$19,601,669**
Cost Sharing (NRCS)	$0	$15,958,041
Cost Sharing (Sponsors)	$0	$3,643,628
Annual Installation Cost	$0	$547,000
O&M Cost	$165,000	$120,000
Annual Sum Cost	$0	$674,900
Annual Benefit Cost	$0	$3,141,300
Annual Net Economic Benefit	$0	$2,466,400
Cost Benefit Ratio	0	4.7

1/ Calculated using FY 2020 Water Resources Discount Rate (2.75%), 100-year evaluation period and 103-year period of analysis. Prepared December 2021.

Chapter 4 Environmental Consequences

Under NEPA, the NRCS is required to identify and address environmental and human health effects that may occur from implementing the No Action Alternative and Alternative 3. The purpose of this chapter is to describe the potential impacts of each alternative on the environmental and human health resource categories defined in Chapter 2. Three types of effects may occur and are used in this chapter:

- Direct Effect: Effects from a proposed action that occur at the same time and same place.
- Indirect Effect: Effects from a proposed action that occur later in time, at some distance from the project, and are changes due to cause and effect relationships.
- Cumulative Effect: Past, present, and reasonably foreseeable/probable effects from the proposed action, or other activities regardless of agency.

The evaluation of cumulative effects will consider five federally-funded projects that are proposed or will be completed within the project area. Uintah County received funding from NRCS RCPP to complete the Highline and Ashley Upper Canals Flood Channel Reshaping and Modeling Project. The project will improve approximately 63,400 ft of the Ashley Upper Canal and 66,000 ft of the Highline Canal as flood control facilities. Reclamation will use federal funds to pipe 25.58 miles of Ashley Upper Canal and Highline Canal for flood control and stormwater collection as part of the Upper Ashley and Highline Canal Salinity Control Project. The two Ashley Upper and Highline Canal projects occur within the vicinity of the project area for this Proposed Project. Specifically, the Highline Canal flows through the Coal Mine and Yellow Hills Sub-basins, and the detention basins proposed under this Plan-EA would connect to Highline and Ashley Upper Canals. The two Highline and Ashley Upper Canal projects are separate from the Proposed Project covered under this Plan-EA and are currently being constructed and will be complete prior to the construction of the Proposed Project (see Section 1.6). Three UDOT projects are also proposed within the project area: UDOT Pin 10241 (SR-121; 2500 West to US-40 in Vernal), UDOT Pin 13633 (US-40; 1500 S in Vernal to Naples), and UDOT Pin 15661 (2500 West; 1500 N to 2500 N Vernal). These proposed projects would intersect with Ashley Central Canal, where it crosses under the roadways via culverts.

4.1 Soils & Geology

4.1.1 Upland Erosion & Sedimentation

4.1.1.1 No Action Alternative

The current erosion and sedimentation caused by flood events would continue if the No Action Alternative were implemented. Analysis of the estimated current sediment load exiting the Coal Mine and Yellow Hills Sub-basins is 5,810 tons/year and 5,360 tons/year, respectively. This level of erosion and sedimentation would continue to impact infrastructure, water quality, and public safety during storm events. Cumulative impacts are not anticipated.

4.1.1.2 Alternative 3

Under Alternative 3, direct impacts to soil include temporary and permanent ground disturbance for the construction of the Proposed Project. Specifically, earthwork would be completed to install the irrigation pipe and excavation would be required for the construction of the detention basins.

Spoils from the excavation of the detention basins would be utilized on site to grade and contour the basins or would be removed by a qualified contractor to a local, authorized materials pit.

While the Proposed Project would result in temporary and permanent soil disturbance, Alternative 3 would also reduce erosion by detaining sediment and floodwaters in the two, newly constructed detention basins. The Coal Mine and Yellow Hills Detention Basins would be designed to hold 21.2 ac-ft and 19 ac-ft of sediment, respectively, before the storage capacity of the basins would be affected, and sediment would need to be removed. It is anticipated that the basins would need to have sediment removed every 5-10 years. Erosion and sedimentation would be controlled at the outlets for each structure. During final design of the detention basins, an Operations and Maintenance Plan (O&M Plan) would be developed for the basins according to NRCS Practice Codes, in which strategies to address loss of capacity due to sedimentation would be developed, and a schedule of regular inspection, maintenance, and periodic sediment removal would be outlined. The O&M Plan would include guidelines for emergency inspections and sediment or debris removal in the event of a major storm.

Given that histosols are not present in the project area, and that Alternative 3 would not cause indirect soil compaction issues or salinity/sodicity problems, impacts to soil quality or degradation of agricultural lands, specifically subsidence, compaction, and concentration of salts, is not anticipated. Additionally, no indirect impacts to risk factors for landslides, and no impacts to risks related to seismology are expected under Alternative 3.

BMPs, such as the installation of Temporary Erosion Controls (TECs) and reseeding disturbed areas to encourage the establishment of native, drought-tolerant vegetation, would avoid and minimize construction related erosion and sediment delivery. At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to result in impacts to soils and geology in the project area. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.2 Water Resources

4.2.1 Surface & Groundwater Quantity & Quality

4.2.1.1 No Action Alternative

Sediment, nutrients, pathogens, pesticides, and other pollutants transported to 303(d) listed surface waters would remain the same due to continued flood irrigation and tailwater entering natural waterways. Cumulative impacts are not anticipated.

4.2.1.2 Alternative 3

Alternative 3 would indirectly maintain or improve water quality and directly improve water quantity in the project area. The piped and pressurized system is expected to eliminate water lost to seepage and evaporation and is anticipated to conserve 4,812.7 ac-ft of water in the Ashley Valley per year. Ashley Central Canal's water right is for 24.86% of Ashley Creek per water rights 45-167, 45-118, and 45-5135. ACIC owns 5,850 "S" Stock shares of water from the Uintah Water Conservancy District (UWCD) and 6,318.55 shares of the Ashley Valley Reservoir. The "S" Stock shares and Ashley Reservoir are delivered to the Ashley Central Canal from the Steinaker Service Canal. In 2017, ACIC used 5,585 ac-ft of water from Ashley Creek, and diverted 7,676.5 ac-ft of water from the Steinaker Service Canal for a total annual water delivery of 13,261.5 ac-ft of water for Ashley Central Canal. The 4,812.7 ac-ft of water lost to seepage represents 36.3% of the 2017 annual diversion (13,261.5 ac-ft) for Ashley Central Canal. Water conserved by Alternative 3

would remain in Ashley Creek and Steinaker Reservoir during the early irrigation season, until water is needed. Efficiency gains by the new system would maintain early season flows in Ashley Creek, and allow water storage in Steinaker Reservoir to last longer.

Note: *Given public concern about the potential loss of the Kids Canal section, and the need to sustain trees along Kids Canal, supplemental water would be diverted into the Kids Canal from the Uintah County Golf Course and Ashley Central Canal as part of the cultural mitigation for the Proposed Project.* The golf course water is currently delivered through the existing turnout near 500 S. This water typically fluctuates between 1 to 2 cfs throughout the irrigation season. In addition to the golf course water, Uintah County has agreed to purchase additional water equivalent to 0.5 cfs for the duration of the irrigation season. Fifteen primary shares of Ashley Central Canal water have already been purchased and allocated toward the Kids Canal. The Uintah County Special Services District #1 meeting minutes, and documentation from ACIC for the primary water shares are included in Appendix E. Supplemental water would be introduced back into Kids Canal by modifying an existing user turnout near the upper end of Kids Canal to allow water to be turned into the Kids Canal section. This turnout would include a valve and meter. At the end of the Kids Canal, the supplemental water would flow into the Uintah County pipe inlet. Water would be collected in a box and would flow into a new non-pressurized pipe to an existing Ashley Central Canal user turnout near 500 S where it would be delivered to existing shareholders on the canal. A Flow Measurement Study for the Kids Canal was conducted in August 2022 to determine the amount of water required to sustain the preserved trees and provide enough flow to account for seepage. The Flow Measurement Study demonstrated that 1.75 cfs through Kids Canal would be required to sustain the trees, to carry water to the lowest portion of Kids Canal, and to provide flow for passive recreation purposes. Although studies demonstrate that the proposed supplemental water shares should be enough to support the trees, additional water may be necessary depending on the water year (Appendix E).

Canals within the project area (i.e., Highline Canal, Ashley Upper Canal, Ashley Central Canal) have been intercepting floodwater since their construction in the 1800s. The detention basins would connect to Highline and Ashley Upper Canal, and ultimately outlet to their historic drainages to the southeast, approximately 3 miles south of the Ashley Central Canal terminus. For storm events that exceed the capacity of the basins and Highline and Ashley Upper Canals, floodwaters would spread diffusely over the floodplain below Coal Mine and Yellow Hills drainages. In that scenario, floodwaters could reach Ashley Creek. Under normal conditions, tailwater from Highline and Ashley Upper Canals at their outlet is conveyed through a web of natural channels that drain toward the Green River. Impacts from the detention basins to natural drainages downstream of the Coal Mine and Yellow Hill sub-basins are not anticipated to result from Alternative 3, as the flow patterns of natural drainages would not change from current existing conditions that have been in place since the 1800s.

No construction activities would occur within the active channel of Ashley Creek, as such, short-term or long-term impacts to Category 1 waters are not anticipated. Therefore, it is anticipated that the Proposed Project would not be subject to Utah's antidegradation policy. Alternative 3 is also anticipated to reduce sedimentation and degradation of 303(d) listed streams by facilitating the change from flood irrigation to sprinkler irrigation and thereby reducing or eliminating sediment and nutrient laden tailwaters to any natural drainages that might receive it. The transition to more efficient irrigation practices facilitated by Alternative 3 is anticipated to impact irrigation water quantity by reducing tailwater and increasing irrigation efficiency, which would increase irrigation water availability.

Canal seepage and flood irrigation methods likely contribute to groundwater recharge in the project area through deep percolation, though the extent to which seepage influences groundwater recharge is unknown. Piping the canal and eliminating seepage may indirectly impact groundwater recharge in the project area; however, the extent to which seepage in the project area influences groundwater recharge is unknown because there is no current, available data evaluating direct groundwater recharge sources and volumes.

Alternative 3 may temporarily impact surface water quality during construction. BMPs would be implemented during construction to protect water quality and to prevent water pollution from runoff, spills, leaks, and leaching. A Construction General Permit (CGP), administered by the Utah Pollutant Discharge Elimination System (UPDES) under the National Pollutant Discharge Elimination System (NPDES), would be required prior to construction for Alternative 3. A CGP, and associated SWPPP and SPCC Plan are required for construction activities that disturb more than 1 acre.

Together, water conserved by Alternative 3 and the piping of Ashley Upper Canal and Highline Canal are anticipated to increase water quantity and quality, improve water efficiency, and enhance agricultural water management in the project area. Flow patterns would not be altered from current existing conditions by the construction of the detention basins, as such downstream drainages would not be impacted as a result of Alternative 3. The piping of canals in the project area, such as Ashley Central Canal, Highline Canal, and Ashley Upper Canal, would likely have cumulative impacts on groundwater recharge in the project area due to the loss of seepage. However, the extent to which seepage and deep percolation from flood irrigation influences groundwater recharge is unknown and the increased conservation of water and improved efficiency of irrigation delivery would have a net positive benefit on water quantity. Overall, Alternative 3 and the Ashley Upper Canal and Highline Canal projects are expected to result in net positive cumulative impacts to surface water quantity and quality in the project area by conserving water and improving or maintaining water quality in the project area.

4.2.2 Clean Water Act / Waters of the U.S., including Wetlands

4.2.2.1 No Action Alternative

The No Action Alternative would have no direct impacts on resources protected under the CWA, i.e., Waters of the U.S., including wetlands. If the No Action Alternative were implemented, Ashley Central Canal would continue to lose water due to seepage and evaporation, which could indirectly impact Waters of the U.S., such as Ashley Creek, Green River, or Steinaker Reservoir, by reducing available water flow. Cumulative impacts are not anticipated.

4.2.2.2 Alternative 3

Field investigations did not identify wetlands within the project area. Alternative 3 is projected to conserve 4,812.7 ac-ft of water in Ashley Valley, this could indirectly benefit Waters of the U.S., such as Ashley Creek or Steinaker Reservoir, by maintaining early season flows in Ashley Creek and allowing water storage in Steinaker Reservoir to last longer. The implementation of Alternative 3 is not anticipated to significantly impact Waters of the U.S., including wetlands because construction activities would be situated within the canal easement and outside of sensitive areas to avoid impacts to wetlands and Ashley Creek. Potential indirect effects to wetlands in the vicinity of the project area may occur as a result of piping Ashley Central Canal if there are wetlands that are outside the project area that depend on canal seepage or flood irrigation practices; however, given the canal is below the grade of the surrounding agricultural

fields and that field survey could not determine any extent to which seepage might be influencing groundwater levels in those locations, it is most likely that the wetlands are more influenced by irrigation practices rather than canal seepage. Implementation of Alternative 3 would not preclude irrigation activities; therefore, hydrophytic vegetation associated with potential wetlands outside the project area in irrigated fields is expected to persist. While Ashley Central Canal is likely not considered jurisdictional waters given the lack of connectivity with Ashley Creek and the Green River, Alternative 3 would only pipe Ashley Central Canal when irrigation waters are not present and would not completely fill the canal after dewatering and piping is complete. The action of piping the Ashley Central Canal is expected to be agricultural exempt under the CWA subsection 404(f)(1)(c). Construction would also occur outside of the irrigation season when the canal does not contain irrigation water.

Given the lack of OHWM indicators in the ephemeral channels located within the proposed detention basin sites, the USACE determined that those channels are not Waters of the U.S and issued an Approved Jurisdictional Determination. As such, construction activities associated with Alternative 3 are not anticipated to impact Waters of the U.S., including wetlands, in the detention basins.

The USACE determined that the piping of Ashley Central Canal would qualify for an agricultural exemption under CWA subsection 404(f)(1)(c) (Appendix A). Therefore, it is not anticipated that Alternative 3 would require a permit under the CWA for the piping of Ashley Central Canal. However, a stream alteration permit from the Utah Division of Water Rights is anticipated to be required for the canal improvements that would occur within 30 ft of the Ashley Creek channel.

Together, water conserved by Alternative 3 and the piping of Ashley Upper Canal and Highline Canal are anticipated to indirectly maintain early season flows in Ashley Creek and allow water storage in Steinaker Reservoir to last longer. Overall, Alternative 3 and the Ashley Upper and Highline Canal projects are expected to result in net positive cumulative impacts to Waters of the U.S., including wetlands, in the project area by avoiding direct wetland impacts, and conserving water in the project area.

4.2.3 Regional Water Management Plan

4.2.3.1 No Action Alternative

The No Action Alternative would have no direct impact on regional water management plans. Under this alternative, however, water infrastructure improvements and water conservation measures would not be implemented. Cumulative negative impacts to water availability and therefore regional water planning efforts could result if continued demands on diminishing water supplies persist.

4.2.3.2 Alternative 3

Alternative 3 would conserve water, provide for efficient delivery of water, improve water quality, provide flood damage reduction and prevention, and create new recreational opportunities, all of which align with the Uintah Basin Plan’s keys to water management and ensuring a productive future for the basin.

Together, water conserved by Alternative 3 and the piping of Ashley Upper Canal and Highline Canal are anticipated to increase water quantity and quality, improve water efficiency, and enhance agricultural water management in the project area. The beneficial impacts of Alternative

3 and the Highline and Upper Ashley Canals projects are expected to result in net positive cumulative impacts to regional water management plans in the project area.

4.2.4 Floodplain Management

4.2.4.1 No Action Alternative

The No Action Alternative would have no direct impacts on floodplain management. If the No Action Alternative were implemented, the project area would continue to be at risk for flooding in the event of a major storm (Appendix C. Map 6). Under the No Action Alternative, approximately 233 structures, 88 roads/minor highways, and over 334 acres of agricultural land would experience flooding under a 10-year storm event. Flood modeling shows that approximately 737 structures, 173 roads/minor highways, and over 763 acres of agricultural land would experience flooding under a 500-year event under existing conditions. Cumulative impacts are not anticipated.

4.2.4.2 Alternative 3

Under Alternative 3, two detention basins would be constructed to provide flood protection in the project area; the greatest extent of flood protection would be provided under the 10-year storm event. The proposed detention basins would not divert floodwaters out of their respective historical drainages, but rather reduce peak flood flows from Coal Mine and Yellow Hills drainages. As such, Alternative 3 would reduce flood risk, but would not induce additional or new flooding in the project area.

Construction activities would occur within areas of minimal flood hazard, except for those areas within the Ashley Central Canal, which are situated within the 100-year floodplain. The 100-year floodplain immediately associated with Ashley Central Canal would be permanently disturbed by piping Ashley Central Canal; however, after installing the pipeline, the canal would be partially backfilled, re-shaped and contoured to convey floodwaters from the surrounding areas.

The purpose of Alternative 3 is to provide flood prevention (flood damage reduction) from runoff, erosion, and sediment damage to areas downstream of the Coal Mine and Yellow Hills Sub-basins during large storm events. Given the lack of flood protection measures currently in place within the Coal Mine and Yellow Hills Sub-basins and the history of damaging flash floods, Alternative 3 would benefit floodplain management in the project area (Appendix C. Map 6). Under Alternative 3, flood modeling shows that many structures, roads, and agricultural lands in downstream inundation areas would be protected from a 10-year storm event. Under a 10-year storm event, Alternative 3 would protect 228 structures (mobile homes, homes, commercial buildings, schools, or businesses), 80 public roadways/minor highways, and 303 acres of agricultural land located within the downstream areas. In the event of a 500-year storm event, approximately 630 structures would experience flooding, which is 107 fewer structures than under the No Action Alternative, and no flooding of new structures would occur.

No increased flood hazard or other adverse effect to the existing natural and beneficial values of the floodplain or lands adjacent or downstream is anticipated. Installation of the detention basins would affect the FEMA floodplain mapping because the basins would be used for flood protection. Therefore, prior to the construction of these structures, it would be necessary to obtain a Letter of Map Revision (LOMR). Floodplain Development Permit Applications would be required by local jurisdictions for any construction within the floodplain.

The Highline and Ashley Upper Canal improvement projects are separate and complete efforts that would improve floodwater conveyance in the respective canals and would be fully implemented prior to the Proposed Project evaluated in this EA. The detention basins would ultimately divert floodwaters to natural drainages to the southeast via Highline and Ashley Upper Canals and would reduce flood risk but would not induce any additional or new flooding in the project area. Therefore, Alternative 3 and the Ashley Upper and Highline Canal projects are expected to result in a net positive cumulative impact to floodplain management in the project area.

4.3 Air Quality

4.3.1 Clean Air Act / National Ambient Air Quality Standards, Climate & Greenhouse Gases

4.3.1.1 No Action Alternative

The No Action Alternative would have no impact on CAA or NAAQS in the project area. Cumulative impacts are not anticipated.

4.3.1.2 Alternative 3

Portions of Uintah Basin, including the entire Ashley Valley, were designated by the EPA as a 'Marginal' Nonattainment area for the 8-hour ozone. Uintah County annually complies with all other NAAQS requirements. Construction activities are anticipated to cause short-term increases in emissions during construction from construction equipment. These emissions are anticipated to be minor and localized and would not interfere with the area achieving NAAQS. BMPs would be implemented to minimize air quality impacts, including:

- Water trucks would be used during construction to minimize fugitive dust.
- Materials would be hauled in properly tarped or sealed containers.
- Vehicle speeds would be restricted within the project area.
- The size and number of excavations would be minimized to the extent practicable.
- Construction equipment would be required to meet all air quality standards, including properly functioning mufflers.

Emission rates are not expected to increase in the project area over the long-term. Projects in the project area, including Alternative 3, are anticipated to cause short-term increases in emissions during construction from construction equipment. However, these emissions are anticipated to be minor and localized and would not interfere with the area achieving NAAQS requirements. Given that there are no known projects in the recent past, present, or foreseeable future that are anticipated to result in impacts to air quality in the project area, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.4 Plants

4.4.1 Special Status Plant Species

4.4.1.1 No Action Alternative

The current practices and conditions in the project area do not have an impact on special status plant species, therefore, the No Action Alternative would have no impact on special status plant species in the project area. Cumulative impacts are not anticipated.

4.4.1.2 Alternative 3

During the 2019 survey, two clusters of Ute ladies'-tresses, totaling nine individuals, were observed adjacent to the project area. All locations containing Ute ladies'-tresses plants would be protected to avoid any accidental disturbance to the area by restricting construction activities to the canal easement. Alternative 3 is not anticipated to result in any direct effects to Ute ladies'-tresses because no construction activities would occur in Ashley Creek, or on the opposing bank of Ashley Creek, where individual plants were identified. All construction activities that would occur near observed occurrences of the species would be completed within the existing footprint of the piped portion of Ashley Central Canal; construction would not disturb the Ashley Creek channel along any portion of the alignment.

Coordination with USFWS determined that three years of Ute ladies'-tresses survey would be completed for the project area where suitable habitat was identified, and the third year of survey would be completed as a pre-construction survey. Conservation measures would be implemented to avoid disturbance to the identified plants and to the bank of the Ashley Creek where they occur (i.e., protection with silt fencing of the area during construction and clear measures for the Contractor to avoid the Ashley Creek channel). Alternative 3 would also remove large overstory trees along portions of the canal alignment, however the removal of trees would occur in areas that do not currently have suitable habitat for Ute ladies'-tresses, given the presence of dense vegetation dominated by reed canarygrass, horsetail, willow and other grasses and shrubs. Furthermore, no suitable habitat for Ute ladies'-tresses was identified along the Ashley Central Canal, and therefore suitable habitat would not be lost due to the loss of canal seepage. Areas that have wet meadow conditions near the canal alignment are all estimated to be irrigation induced based on site conditions and would persist beyond implementation of Alternative 3. Therefore, indirect effects to the species also are not anticipated. No critical habitat for the species exists within the project area.

According to coordination with the USFWS, any action within 300 ft of identified Ute ladies'-tresses individuals constitutes a May Affect Not Likely to Adversely Affect determination. While Alternative 3 is not anticipated to directly or indirectly impact Ute ladies'-tresses or suitable habitat for the species, construction activities would occur within 300 ft of the identified individuals at the northern portion of the project alignment. Based on the scope and footprint of Alternative 3, and the conservation measures proposed to protect Ashley Creek and all known Ute ladies'-tresses locations, Alternative 3 is not likely to adversely affect individual plants, nor would it affect the persistence of the species or suitable habitat for the species. Concurrence with this determination from USFWS was received on May 20, 2021 (Appendix A).

Through coordination with USFWS, the Ashley Upper and Highline Canal Salinity Control Project was found to result in adverse effects to Ute ladies'-tresses suitable habitat along Highline Canal. To compensate for the impacts of the Upper Ashley and Highline Canal Salinity Control Project, a Ute ladies'-tresses mitigation program was developed (Reclamation 2020). Given the compensatory mitigation for the Upper Ashley and Highline Canal Salinity Control Project and the lack of adverse impacts to Ute ladies'-tresses or suitable habitat for the species under Alternative 3, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.4.2 Noxious Weeds & Invasive Plants

4.4.2.1 No Action Alternative

The sponsor and ACIC actively implement invasive species controls to adequately manage and prevent their introduction and establishment. The No Action Alternative would not alter current invasive species and noxious weed control practices; therefore, the No Action Alternative would have no effect on noxious weeds and invasive plants. Cumulative impacts are not anticipated.

4.4.2.2 Alternative 3

Current practices to control and prevent the introduction and establishment of noxious weeds and invasive species would occur. In addition to these general practices, BMPs would be implemented to control and prevent the introduction and spread of any invasive species or noxious weeds. BMPs to avoid invasive species transport would be incorporated into contractor specifications and would include:

- Minimizing the amount of exposed soil without cover.
- Identifying and protecting areas where existing vegetation would not be disturbed by construction activities.
- Reseeding areas disturbed by construction activities to encourage the establishment of native, drought-tolerant vegetation.
- Pressure washing construction equipment to remove plant parts, soil, and other materials that may carry invasive and noxious weed seeds prior to arriving to the project area.

At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to result in the introduction of noxious weeds or invasive plants in the project area. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.4.3 Riparian Areas

4.4.3.1 No Action Alternative

Basin and stream conditions would continue to degrade water quality and wildlife benefits over time due to erosion, debris damage and sedimentation from flood events. Cumulative impacts are not anticipated.

4.4.3.2 Alternative 3

The section of the Ashley Central Canal between 500 North and Main Street is referred to as the Kids Canal. Currently, this section of Ashley Central Canal is open with significant tree coverage sustained by canal seepage. The pipeline construction and placement for most of the 9.6 miles of the Ashley Central Canal would be designed for placement in the east bank of the canal. However, most of the trees along Kids Canal are growing on the east bank of the canal. Under Alternative 3, the proposed design has been modified through this section to install the pipeline in the west bank of the canal adjacent to 1500 West. Trees present along the west bank would be protected, whenever feasible. The majority, if not all, of the trees on the east bank would be preserved. Less than a third of the trees on the west bank are anticipated to survive construction, however the majority of those that can be preserved would be on the lower section near Main Street. The design rendering for Kids Canal is included in Appendix B. Given public concern about the potential loss of the Kids Canal section, and the need to sustain trees along Kids Canal, supplemental water would be diverted into the Kids Canal from the Uintah County Golf Course. Fifteen primary shares of Ashley Central Canal water have already been purchased and allocated

toward the Kids Canal. A Flow Measurement Study for the Kids Canal was conducted in August 2022 to determine the amount of water required to sustain the preserved trees and provide enough flow to account for seepage. The Flow Measurement Study demonstrated that 1.75 cfs through Kids Canal would be required to sustain the trees, to carry water to the lowest portion of Kids Canal, and to provide flow for passive recreation purposes. Although studies demonstrate that the proposed supplemental water shares should be enough to support the trees, additional water may be necessary depending on the water year.

Construction activities would remove large overstory trees and shrubs along portions of the canal alignment and would temporarily disturb the herb layer in riparian areas directly within the canal prism. Removal of large overstory trees and shrubs in the project area may alter the light regime in the riparian area by reducing shade and protective canopy coverage. The change in light regime may indirectly influence the vegetative assemblage in the project area. Temporary disturbance to the understory in riparian areas may also temporarily decrease vegetative diversity in the project area. An indirect effect of the canal piping, excluding the Kids Canal portion, involves the eventual loss of trees and vegetation within the canal prism that may have received supplemental hydrology from canal seepage, if that vegetation was not removed during construction. Piping the Ashley Central Canal, excluding the Kids Canal portion, would permanently remove a source of water for vegetation that has established within the canal prism, likely resulting in the loss of riparian vegetation. Riparian vegetation would be lost along all the sections of the canal, including trees and shrubs that rely on seepage water from the canal. Direct impacts to riparian areas would be minimized to the extent practicable by implementing BMPs, that include but are not limited to:

- All work would be completed within the identified project area.
- Revegetation of disturbed areas with native vegetation.
- To prevent the transportation of invasive species, all equipment would be pressure washed to remove plant parts, soil, and other materials that may carry invasive and noxious weed seeds prior to arriving at the site.

Under existing conditions, the open, unlined canal has an average of 25 feet of riparian vegetation established across its prism at the canal edges along its entire length. Once piped, approximately 28.3 acres of seepage induced riparian vegetation would be lost. Supplemental water would be provided by the ACIC and the Uintah County Golf Course to maintain existing flows in the Kids Canal and to support the trees along the Kids Canal section. Alternative 3 would protect 1.2 acres of tree cover on the east side of the Kids Canal portion of Ashley Central Canal. The proposed supplemental water shares should be enough to support the trees, however additional water may be necessary depending on the water year. Although piping Ashley Central Canal would directly and indirectly remove riparian vegetation associated with the canal, Alternative 3 would also maintain or improve water quality and water quantity in Ashley Valley. Construction of the detention basins would also maintain fish and wildlife benefits provided by natural riparian areas in the Watershed by reducing flood impacts from erosion and sediment loading to downstream areas. The construction and completion of Alternative 3 and other canal piping projects preceding implementation of Alternative 3 are anticipated to result in the direct and indirect loss of approximately 28.3 acres of riparian vegetation associated with canals in the project area. Therefore, Alternative 3 would result in cumulative negative impacts to riparian vegetation associated with the open canal prisms in the project area, such as alterations in the light regime, loss of seepage induced riparian habitat and changes in vegetative assemblages in the areas where the canal was once open. Cumulative impacts to riparian areas would be minimized to the

greatest extent practicable by implementing BMPs, as stated previously, and cumulative impacts beyond the project area would not be anticipated

4.5 Animals

4.5.1 Wildlife & Wildlife Habitat

4.5.1.1 No Action Alternative

The No Action Alternative would have no effect on wildlife and adjacent wildlife habitat in the project area. Cumulative impacts are not anticipated.

4.5.1.2 Alternative 3

Potential disturbance to wildlife and adjacent wildlife habitat is anticipated during construction. Piping the Ashley Central Canal is anticipated to permanently remove a source of water for wildlife that utilize the area, except along the Kids Canal, as well as riparian vegetation that wildlife, such as small mammals, waterfowl, and avian species, may use for forage, shelter, and travel routes. The canal piping would likely result in the permanent loss of riparian vegetation associated with the canal, including mature trees and shrubs that may have received supplemental hydrology. However, vegetation along the east side of Kids Canal would be protected and maintained with supplemental water from the ACIC and Uintah County Golf Course. Construction of the detention basins may alter suitable habitat for small mammals, reptiles, and birds. Wildlife may be temporarily impacted during construction due to noise and would likely choose to move to alternative locations while construction activities are present. Construction would be limited to daylight hours, which would reduce impacts to nocturnal wildlife species. Based on comments received from the PLPCO in collaboration with UDWR, and that the Coal Hill detention basin is in crucial winter mule deer habitat, no construction activities at the Coal Hill detention basin may occur from December 1 – April 15.

BMPs would be implemented along the entire alignment to minimize impacts to wildlife species and habitat surrounding the canal prism. Areas disturbed during construction would be reseeded to encourage the establishment of native, drought-tolerant vegetation. It is anticipated that drought-tolerant species would persist; however, the success rate of establishment may be low. In project locations that occur next to Ashley Creek, BMPs would be implemented to reduce impacts to riparian species. BMPs may include the following:

- All work would be completed within the designated project area.
- When feasible, construction equipment and vehicles would be fueled offsite. Adequate spill response equipment would be maintained and present at all times.
- Water trucks would be used during construction to control fugitive dust impacts.
- TECs, such as silt fences, fiber wattles, or other erosion control mechanisms, would be placed adjacent to or below disturbance areas to prevent and minimize sediment transport into any waterway.
- Construction equipment would be prevented from entering Ashley Creek.
- To prevent the transportation of invasive species, all equipment would be pressure washed to remove plant parts, soil, and other materials that may carry invasive and noxious weed seeds prior to arriving at the site.
- Following construction, areas disturbed by construction activities would be reseeded to encourage the establishment of native, drought-tolerant vegetation.
- Sensitive areas would be protected from any disturbance or construction activity by clearly marking these areas as ones to avoid.

- An incidental nest survey would be completed prior to vegetation removal.

The construction and implementation of Alternative 3 and other canal piping projects is anticipated to result in the loss of wildlife habitat associated with canals in the project area. However, the proposed projects may also improve the duration and volume of water in natural streams within the project area, ultimately improving wildlife habitat in those areas. Therefore, it is expected that Alternative 3 would result in both negative and positive cumulative impacts to wildlife habitat associated with canals in the project area. Cumulative impacts to wildlife habitat would be minimized by implementing BMPs and indirectly improving habitat within natural streams in the project area.

4.5.2 Special Status Animal Species

4.5.2.1 No Action Alternative

The No Action Alternative would have no effect on special status animal species in the project area. Cumulative impacts are not anticipated.

4.5.2.2 Alternative 3

Based on a lack of suitable habitat conditions within the project area for the identified special status species, as well as the timing of Alternative 3, and the anticipated net positive benefits to water quality and quantity, the BA (see Appendix E) determined that Alternative 3 would have No Effect on the bonytail chub (*Gila elegans)*, Colorado pikeminnow (*Ptychocheilus lucius)*, humpback chub (*Gila cypha)*, razorback sucker (*Xyrauchen texanus)*, Mexican spotted owl (*Strix occidentalis)*, and the yellow-billed cuckoo (*Coccyzus americanus)*. Also, given the lack of suitable habitat within the project area for greater sage-grouse, it is anticipated that Alternative 3 would have No Effect on species protected under the ESA or State protected species managed under conservation agreements. No proposed or final designated critical habitat for any of the identified species is contained within the project area, therefore Alternative 3 is expected to have No Effect on ESA-listed animal species or any associated critical habitat. At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to impact special status animal species in the project area. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.5.3 Migratory Birds / Bald and Golden Eagles

4.5.3.1 No Action Alternative

The No Action Alternative would have no effect on migratory birds, or bald and golden eagles. Cumulative impacts are not anticipated.

4.5.3.2 Alternative 3

Field investigations found no active nests belonging to raptors or migratory bird species. The project area and the surrounding area could provide suitable perching or foraging habitat for migratory birds and raptors, therefore, protected avian species have the potential to be present within the project area, or in the vicinity of the project area. Construction would occur outside of the irrigation season. Therefore, most construction activities would occur outside of bird migration, breeding, and nesting seasons. Except for the Kids Canal portion of Ashley Central Canal, piping the canal would permanently remove an open water source for avian species and a source of seepage water for vegetation along the canal alignment, which would likely result in the loss of riparian vegetation associated with the canal, including mature trees and shrubs, which are likely

used by resident or migratory birds. Alternative 3 would remove vegetation that could provide suitable habitat for protected avian species. The project area should be cleared for any migratory bird or eagle nests prior to vegetation removal and construction. For bald and golden eagles, the seasonal buffer for nesting surveys is January 1 to August 31. The raptor survey should adhere to the USFWS 2002 *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* for appropriate nesting windows and protocols (Romin and Much 2002). If any active migratory bird nests were identified within the project area, construction and vegetation clearing would pause and the NRCS Biologist and USFWS would be notified immediately to discuss the appropriate course of action. The above language regarding migratory bird clearance shall be incorporated into contractor specifications.

Given the direct and indirect removal of vegetation, including mature trees, from the project area, Alternative 3 would have permanent impacts to perching and foraging habitat in the canal prism. However, most construction would occur outside of bird migration, breeding, and nesting seasons and a migratory bird and raptor survey would occur prior to vegetation removal; therefore, Alternative 3 is anticipated to have no direct impact on migratory birds, or bald and golden eagles. The construction and implementation of Alternative 3 and other canal piping projects is anticipated to result in the direct and indirect loss of riparian habitat associated with canals in the project area. Therefore, it is expected that Alternative 3 would result in cumulative impacts to avian habitat associated with canals in the project area. Cumulative impacts to avian habitat would be minimized by implementing BMPs and indirectly improving habitat within natural streams in the project area.

4.6 Human Environment

4.6.1 Socioeconomics

This section details the consequences of each alternative on the social and economic resources within the vicinity surrounding the project area. The impact analysis area for each resource is the project area and those properties immediately adjacent to that footprint.

4.6.1.1 No Action Alternative

Under the No Action Alternative, the project area would continue to experience recurrent flooding with the associated damages and would incur additional economic impacts due to irrigation water delivery inefficiency issues. The No Action Alternative would result in an estimated $2,906,500 in annual floodwater damages to crops and pasture, residential property, and commercial property. Cumulative impacts are not anticipated.

If the No Action Alternative were implemented, capital and labor requirements would continue to increase due to flooding damages and further deterioration of the Ashley Central Canal. The impacts from canal seepage and soil saturation on adjacent residential structures, farming, and development would also remain an issue. Cumulative impacts are not anticipated.

4.6.1.2 Alternative 3

A number of direct and indirect effects to socioeconomics in the project area would result from the implementation of Alternative 3. Direct impacts of Alternative 3 include the use of $3,643,628 in local match funds to construct the Proposed Project. In addition, Alternative 3 would temporarily create approximately 10 jobs (i.e., 2 full crews of 4, plus a job superintendent and office support) within the project area during construction.

As determined by the economic analysis described in Appendix D, Alternative 3 is anticipated to result in an overall $2,466,400 net annual economic benefit; the majority of economic benefits are derived from the proposed flood control measures. Piping the canal would reduce the financial impacts to residents associated with flood damage to residential properties, community infrastructure, and agricultural facilities in the project area. Specifically, Alternative 3 would result in $424,100 in annual floodwater damages, compared to the $2,906,500 under the No Action Alternative. Alternative 3 would result in flood reduction savings of approximately $2,482,400 annually. A comparison of anticipated flood reduction benefits is illustrated in Chapter 6 (Table 6-5).

Alternative 3 is also expected to result in a slight increase in agricultural profitability due to the longer irrigation season and ability to transition to more efficient irrigation practices. The economic analysis in Appendix D estimates that hay yields in the project area would increase due to a more consistent flow of water, as well as the opportunity to irrigate more acreage. This resulted in an annual benefit of almost $650,000 (Appendix D). In addition, implementation of Alternative 3 would lower annual operation and maintenance costs by $45,000 a year.

The Proposed Project, along with the past, present, and future projects in the project area would require financial expenditures; approximately $3,643,628 in local match funds would be used for Alternative 3. Alternative 3 and other proposed projects in the project area would also temporarily create approximately 10 jobs, lower annual operation and maintenance costs by $45,000, and reduce floodwater damages in the project area by $2,482,400 annually. Together, water conserved by Alternative 3 and the projects completed for Ashley Upper Canal and Highline Canal are anticipated to improve water efficiency and agricultural profitability in the project area; Alternative 3 would improve hay yields in the project area, resulting in an annual benefit of approximately $650,000. Therefore, Alternative 3 and the Ashley Upper Canal and Highline Canal projects are expected to result in net positive cumulative impacts to socioeconomics in the project area.

4.6.2 Environmental Justice & Civil Rights

4.6.2.1 No Action Alternative

The No Action Alternative would have no effect on environmental justice or civil rights. There would be no impacts to low-income or minority populations. Cumulative impacts are not anticipated.

4.6.2.2 Alternative 3

Three fundamental principles inform all environmental justice determinations. To avoid impacts to environmental justice populations, proposed projects must: 1) Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects on environmental justice populations; 2) Ensure the full and fair participation by all potentially affected communities in decision-making processes; and, 3) Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

The demographic analysis demonstrated that both minority individuals and low-income populations live and/or work within the project area. These population percentages are not significantly greater in proportion to other populations or the overall population in Uintah County; therefore, no overburdened communities are present in the project area. Although there are residents in the project area that qualify for EJ protections (i.e., EJ populations), the communities

in which the Proposed Project occurs do not qualify as EJ communities (i.e., overburdened communities).

Construction activities may directly and temporarily impact those individuals living in the project area. No closure of businesses or community facilities or loss of access to businesses, community facilities or residences, and no residential relocations are necessary to implement Alternative 3. Indirectly, Alternative 3 would benefit all individuals within and surrounding the project area by reducing flood risk, preventing seepage issues, facilitating the transition to sprinkler irrigation, conserving water, and providing new recreation opportunities.

No long-term adverse effects on EJ communities are anticipated because no long-term adverse environmental or human health effects are anticipated to occur as a result of implementing Alternative 3. Alternative 3 meets the provisions of E.O. 12898, as it is supported by Title VI of the Civil Rights Act.

The Proposed Project, along with past, present, and future projects in the project area occur in areas with EJ populations. Although there are EJ populations present in the project area, no overburdened communities were identified. Given the lack of overburdened communities in the project area and lack of long-term adverse effects on EJ communities, there are no known projects in the recent past, present, or foreseeable future that are anticipated to impact environmental justice and civil rights. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.6.3 Cultural, Historic, & Paleontological Resources

4.6.3.1 No Action Alternative

The No Action Alternative is anticipated to result in No Historic Properties Affected in the project area. Cumulative impacts are not anticipated.

4.6.3.2 Alternative 3

A cultural resources survey was completed for the project area in July 2020 by Certus Environmental Solutions, LLC. The survey identified four NRHP-eligible historic canals in the project area. Based on the Cultural Resource Report, the NRCS determined that Alternative 3 would have no adverse effect on three of the four NRHP-eligible sites (i.e., 42UN2676/Highline Canal, 42UN2680/Ashley Upper Canal, and 42UN5471/Steinaker Service Canal). However, the NRCS determined that Alternative 3 would have an adverse effect on Ashley Central Canal (42UN5195). The Ashley Central Canal was key to the settlement of Vernal and the irrigation history of Ashley Valley. As a result, Ashley Central Canal is eligible for the National Register under Criterion A. Furthermore, Ashley Central Canal is eligible for the National Register under Criterion B due to being associated with Sterling Driggs Colton, who was noted for his role in the canal's development, and as the first elected sheriff. Ashley Central Canal was nominated for the National Register in 1983. SHPO concurred with the eligibility and determination of effects on September 24, 2021 (Appendix A).

NRCS submitted consultation letters on September 13, 2021 to the Shoshone-Bannock Tribes of the Fort Hall Reservation, Ute Indian Tribe of the Uintah & Ouray Reservation, Eastern Shoshone Tribe of the Wind River Reservation, and Northwestern Band of Shoshone Nation for concurrence and compliance with Section 106 requirements. The Tribes have not responded to the consultation request. Tribal consultation letters are included in Appendix A.

Given that the majority of the Ashley Central Canal will remain an open floodwater conveyance facility, thus reducing the level of adverse effects, the focus of mitigation efforts will be for the Kids Canal. In accordance with 36 CFR Part 800.6, NRCS mitigated the adverse effects to Ashley Central Canal and Kids Canal (42UN5195) through the development of a MOA between the Utah SHPO, the NRCS, Uintah County, ACIC, and Special Services District #1, along with the Friends of the Kids Canal and Ahrnsbrak Family as concurring parties. Mitigation stipulations include the supplemental water shares that have and will be purchased and diverted to Kids Canal to sustain the vegetation, passive recreation opportunities, and scenic quality. In addition, an informational kiosk will be installed at the Kids Canal, and additional public outreach materials will be developed. The MOA was executed pursuant to compliance with Section 106 of the National Historic Preservation Act prior to the approval of the Final EA and is included in Appendix E.

With regard to cumulative impacts, the Highline Canal and Upper Ashley Canal projects were federally funded through the Bureau of Reclamation and the NRCS RCPP Program and implemented in the vicinity of the proposed Alternative 3. These projects altered the Highline Canal and Ashley Upper Canal, which were determined eligible for inclusion in the NRHP. Alterations to these historic resources were considered an adverse effect. These adverse effects were mitigated through a programmatic agreement between the BOR and the Utah SHPO, and separately between the NRCS and SHPO. Given mitigation was completed for the Highline and Upper Ashley Canal projects, and mitigation will be completed for the proposed Alternative 3, cumulative impacts to cultural and historic resources in the project area would not be anticipated.

Given the Utah DNR paleontological file search and recommendations, Alternative 3 is not anticipated to uncover significant fossils. Unless fossils are discovered as a result of construction activities, Alternative 3 is anticipated to have no impact on paleontological resources. At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to impact paleontological resources in the project area. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

An inadvertent discovery plan will be prepared for the construction phase of the project. If construction activities uncover any materials of cultural or historic significance (i.e., bone fragments, pottery, stone tools, burial features, etc.), construction would halt and coordination with the NRCS Archaeologist, SHPO, THPO and Uintah County Sheriff would occur, following the post-review discovery procedures outlined in the Prototype Programmatic Agreement between the NRCS and SHPO.

4.6.4 Hazardous Materials

4.6.4.1 No Action Alternative

The No Action Alternative would have no impacts on hazardous materials in the project area. Cumulative impacts are not anticipated.

4.6.4.2 Alternative 3

One environmental incident is recorded near the Coal Mine Detention Basin location; however, this site is not within the project area for Alternative 3. No environmental incidents or facilities are located within or near the Yellow Hills Detention Basin location. One environmental incident and two facilities with USTs are recorded within or adjacent to the project area associated with the Ashley Central Canal piping and pressurization work. Alternative 3 would be contained to the alignment of the canal; therefore, Alternative 3 is not anticipated to impact hazardous materials

located in the project vicinity. Furthermore, no hazardous materials would be generated as a result of Alternative 3.

The contractor would be required to apply for a NPDES CGP, administrated by UPDES, prior to construction commencement. As part of this permit, the contractor would also be required to follow an approved SWPPP and SPCC Plan. At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to impact hazardous materials in the project area. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.6.5 Public Health & Safety

4.6.5.1 No Action Alternative

Without the protection of detention basins, the risk and safety concerns associated with continued flooding would remain the same under the No Action Alternative. Therefore, the No Action Alternative would have no impact to public health and safety. Cumulative impacts are not anticipated.

4.6.5.2 Alternative 3

The purpose of Alternative 3 is to provide flood prevention and flood damage reduction from runoff, erosion, and sediment deposition to areas downstream of the Coal Mine and Yellow Hills Sub-basins, and to improve agricultural water management and public safety by piping and pressurizing the Ashley Central Canal. Given the lack of flood protection measures currently in place within the Coal Mine and Yellow Hills Sub-basins and the history of damaging flash floods, Alternative 3 would improve public health and safety in the project area. Alternative 3 is expected to protect approximately 228 structures (mobile homes, homes, commercial buildings, schools, or businesses), 80 public roadways/minor highways, and 303 acres of agricultural land located within the downstream areas from flood damages associated with a 10-year storm event.

Flood modeling also shows that under Alternative 3 in the event of a 500-year storm, approximately 630 structures would experience flooding, which is 107 fewer structures than under the No Action Alternative. The Highline and Ashley Upper Canals are existing piped canals in the project area and the detention basins would be intended to reduce the potential for flooding using the Highline and Ashley Upper Canals to slowly convey floodwaters; therefore, Alternative 3 would reduce flood risk, but would not induce any additional flooding. Alternative 3 would also eliminate a source of open water in residential areas that could pose safety risks.

The Highline and Ashley Upper Canal projects would improve the capacity of the canals to convey floodwaters; the construction of the Highline and Ashley Upper Canal projects would be complete prior to the construction of the Proposed Project. Alternative 3 and the Ashley Upper and Highline Canal projects would reduce flooding risks, eliminate a public safety risk, and improve public health and safety in the project area. Therefore, Alternative 3 and other canal piping projects are expected to result in net positive cumulative impacts to public health and safety in the project area.

4.6.6 Recreation

4.6.6.1 No Action Alternative

The No Action Alternative would have no effect on recreation in the project area. Cumulative impacts are not anticipated.

4.6.6.2 Alternative 3

No designated parks exist within the project area. The Kids Canal Parkway is a designated recreational walking path within the project area, which the scoping process demonstrated to be a valued community resource. Residents described the open water of the canal in the project area as providing passive recreational value to the public. The Kids Canal Parkway path would be improved with an asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables under Alternative 3. The Kids Canal portion of Ashley Central Canal that is adjacent to the walkway would be piped; however, the pipe alignment would be shifted to the west to retain the existing unlined canal through this area. As part of the cultural mitigation for the Proposed Project, an information kiosk about the Kids Canal history would be constructed along the path and supplemental water would be provided by the ACIC and the Uintah County Golf Course to sustain flows in the Kids Canal and protect the open water feature that provides passive recreational value and opportunities to the public, and public outreach materials on the Kids Canal history would be produced. A Flow Measurement Study was conducted for the Kids Canal to determine the volume of adequate flows in Kids Canal to sustain vegetation and provide a water feature.

The public has utilized the canal maintenance access roads as an informal walking path; however, the areas outside of those areas included in the Kids Canal Parkway are not designated for recreational use or public access, and swimming in the canal is not permitted by any entity. While the Kids Canal Parkway is a designated recreational walking path, the remaining access roads for Ashley Central Canal are not. Prescriptive easements for the Ashley Central Canal provide for operations and maintenance ingress and egress, but not for public access and do not allow for public recreation in the canal due to safety hazards. The canal maintenance access road would be retained by the Proposed Project.

The SITLA administered land within the Coal Mine Sub-basin contains unofficial, dispersed ATV trails (i.e., Jeep Trail) that are used by the public. Under Alternative 3, an easement would be placed on SITLA lands and the area would be used for flood protection, however, the area would likely still be open to the public. Alternative 3 would impact unofficial public recreation sites with the installation of flood control structures on state land. Alternative 3 would also benefit the community within and surrounding the project area by preserving the Kids Canal Parkway and maintaining water flow and vegetation associated with this recreation resource (Appendix B. Map 3). Recreation trails and amenities are found to improve physical and mental health, enhance social capital, and improve safety for people living near recreation resources (Trust for Public Land 2021). Based on available research, it was assumed that Alternative 3 would provide the greatest recreation benefit to residents within 0.25 to 1-mile of the recreation trail; therefore, an approximate 1-mile buffer was applied around the proposed recreation trail as shown on the recreation benefit area (Appendix B. Map 3). Recreational resources improve community connectivity, health, wellness, and enhance social bonds. Furthermore, recreational resources like those proposed in Alternative 3, also offer economic benefits. The Investigation and Analyses Report in Appendix D estimated the economic benefit of Kids Canal and Kids Canal Parkway by placing a value on the estimated usage per year and estimating the consumer surplus from jogging, running, and walking on trails. It was estimated that the Proposed Project would provide an annual benefit of $59,700 from recreation improvements. At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to impact recreation in the project area. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.6.7 Land Use

4.6.7.1 No Action Alternative

The project area is zoned for mining and grazing, agricultural, residential, and commercial land uses. The No Action Alternative would have no impact on land use designations in the project area. Land would not be acquired and the ROW along the canal would remain with the ACIC. Cumulative impacts are not anticipated.

4.6.7.2 Alternative 3

The project area is zoned for mining and grazing, agricultural, residential, and commercial land uses. Under Alternative 3, private undeveloped lands and SITLA lands would be converted to flood protection land uses for the proposed detention basin sites. Property acquisition or an easement of approximately 47.9 total acres would be required prior to construction for the detention basins. Approximately 27.9 acres would be entered into an easement with SITLA for the Coal Mine Basin and approximately 20 acres of private land would be acquired for the Yellow Hills Detention Basin. Given the use of the canal for floodwater conveyance, the canal ROW would be transferred from ACIC to Uintah County.

Although the land use of the Coal Mine and Yellow Hills detention basin sites would change from undeveloped rangeland and private land to flood protection, the proposed detention basins would be consistent with future land use designations in the project area (i.e., Low Density/Agriculture). Under the Uintah County Land Use Plan, development in areas designated for Low Density/Agriculture must provide open space to maintain the rural feel of the area. Therefore, Alternative 3 is anticipated to have no significant impact on land use in the project area. At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to have cumulative impacts to land use in the project area. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.6.8 Visual Resources & Scenic Beauty

4.6.8.1 No Action Alternative

The No Action Alternative would have no impact on visual resources and scenic beauty in the project area. Cumulative impacts are not anticipated.

4.6.8.2 Alternative 3

Alternative 3 would have a direct, permanent effect on visual resources in the project area by eliminating open water in the canal, removing mature trees and shrubs, and disturbing grasses along the canal. During the scoping process for the Proposed Project, residents expressed that they value the tranquility and beauty that the canal and its riparian area provide, particularly between 500 North and Main Street where the Kids Canal Parkway is located (Appendix E. Scoping Report). In response to public input, permanent impacts to visual resources and scenic beauty would be minimized in the Kids Canal section by modifying the pipe alignment and avoiding trees on the east bank and protecting as many trees as possible on the west bank. Under Alternative 3, Uintah County Special Services District #1 and ACIC would provide supplemental water to the Kids Canal section to maintain the existing open water conditions, to sustain the protected trees, and to retain the existing recreation opportunities. Alternative 3 would have short-term, minor impacts to visual resources during construction from the presence of construction equipment and construction crews. Native vegetation would be reestablished in areas disturbed by construction activities to mitigate for construction-related visual resource impacts. Alternative

3 would result in long-term impacts on the scenic quality of the Ashley Canal prism, but there would no long-term impacts to scenic quality in the general area. There would be visual impacts to some residences located directly along the canal alignment from the removal of the open water feature, construction-related vegetation disturbance, and permanent loss of vegetation from the loss of hydrology. Under Alternative 3, permanent impacts to scenic beauty and visual resources along Kids Canal would be minimized by realigning the pipeline, protecting trees during construction, and providing supplemental water to sustain flows, protected trees, and recreation opportunities.

Canal piping projects, such as the Proposed Project covered in this Plan-EA and the Highline and Ashley Upper Canal projects would ultimately impact the visual resources in the project area. These canal piping projects would eliminate open water features, and directly and indirectly alter the riparian vegetation along the canals. Cumulative impacts to visual resources and scenic beauty are expected to result from the implementation of Alternative 3 and other canal piping projects in the project area. Cumulative impacts would be minimized by implementing BMPs to encourage the establishment of native, drought-tolerant vegetation and preserving existing vegetation when possible.

4.6.9 Transportation & Infrastructure

4.6.9.1 No Action Alternative

Existing infrastructure in the project area includes linear transportation facilities, irrigation features, and residential structures. Irrigation infrastructure includes Ashley Central Canal and 38 existing turnout meters. The existing irrigation infrastructure is deteriorating and requires continued labor and capital to perform maintenance activities. The canal is projected to lose approximately 4,812.7 ac-ft of water annually to evaporation and seepage.

If the No Action Alternative were implemented, the Ashley Central Canal infrastructure would not be improved and the existing seepage, efficiency losses, and water losses would remain the same. The potential flood zone downstream from the Coal Mine and Yellow Hills Sub-basins includes multiple improved roads and State Highway 121. If the existing conditions were maintained under the No Action Alternative, road infrastructure and residential development roads could be damaged and/or closed during a large storm event. Cumulative impacts are not anticipated.

4.6.9.2 Alternative 3

Alternative 3 would improve the existing Ashley Central Canal infrastructure by piping and pressurizing the canal, reconstructing the Thornburg Diversion, replacing 38 turnout meters, installing two screening structures (one at the Thornburg Diversion and one at the entrance of the Steinaker Service Canal into the Ashley Central Canal), and constructing a new inlet control structure at the McNaughten Gulch tie-in to turnout #13. Alternative 3 would also provide a floodwater conveyance structure by partially backfilling the canal to cover the irrigation pipe, leaving the canal to function as a floodwater conveyance. Flood control facilities proposed as part of Alternative 3 would also protect existing transportation facilities and infrastructure within flood inundation areas.

Piping and pressurizing Ashley Central Canal would require several road crossings (i.e., excavation within the roadway prism). Uintah County would work with Vernal City, Naples City, and UDOT to obtain all necessary permits to establish easements, work within the designated

State and local rights-of-way, and implement appropriate traffic control measures during construction to minimize disturbance and reduce impacts to local traffic.

Alternative 3 may have temporary negative impacts on transportation in the project area during construction. However, Alternative 3, along with proposed UDOT projects and canal piping projects, are anticipated to have a net positive cumulative impact on transportation and infrastructure in the project area by improving pedestrian transportation facilities and protecting existing transportation facilities and infrastructure from flooding.

4.6.10 Noise

4.6.10.1 No Action Alternative

The project area contains agricultural, residential, and commercial land uses. Numerous noise sensitive receptors are present within and surrounding the project area, including local parks, schools, and residential areas. Several frequently travelled roadways intersect the project area. Background noise levels are associated with existing traffic and agricultural noise. The No Action Alternative would have no impact on noise levels in the project area. Cumulative impacts are not anticipated.

4.6.10.2 Alternative 3

Temporary increases in noise related to the use of construction equipment and vehicles would result from implementation of Alternative 3. Backhoes, excavators, haul trucks, and other smaller construction vehicles and equipment would be used to complete Alternative 3. Noise mitigation measures, such as established daytime working hours and the use of properly functioning equipment mufflers, would be implemented during construction to minimize temporary noise impacts. After completion of Alternative 3, it is anticipated that noise levels would return to background levels. No permanent noise impacts are expected from Alternative 3.

The Proposed Project, proposed UDOT projects, and the Highline and Ashley Upper Canal piping projects would cause temporary increases in noise during construction. The use of noise mitigation measures during the construction of past, present, or foreseeable future projects would minimize temporary noise impacts. At this time, there are no known projects in the recent past, present, or foreseeable future that are anticipated to impact noise in the project area. Therefore, cumulative impacts are not anticipated to result from implementation of Alternative 3.

4.7 Energy

4.7.1.1 No Action Alternative

The No Action Alternative would have no impact on energy resources or energy use in the project area, however the use of fuel and oil for equipment to maintain the canal would increase as the canal would continue to have problems with seepage and debris. Cumulative impacts are not anticipated.

4.7.1.2 Alternative 3

Pressurizing the canal is anticipated to decrease maintenance needs and improve energy efficiency by reducing energy demands to move and distribute irrigation water.

The Proposed Project along with other canal piping projects in the project area would have a beneficial impact on energy resources by reducing maintenance requirements and energy demands to move and distribute irrigation water. Therefore, past, present, and foreseeable future

projects are anticipated to have a net positive cumulative impact on energy resources in the project area.

4.8 Risk & Uncertainty

The cost-benefit analysis required by NEPA involves both risk and uncertainty. Conducting an environmental evaluation requires the use of best available science, technology and information to make well-informed assumptions, or predictions. However, existing conditions may change, the public's opinion of a project could evolve, or unanticipated circumstances with construction, funding, or design may arise. Each of these differences could alter predictions of environmental consequences.

4.9 Irreversible & Irretrievable Resource Commitments

Pursuant to the requirements of NEPA, environmental analysis must identify "…any irreversible and irretrievable commitments of resources, which could be involved in the Proposed Action should it be implemented." Irreversible can be described as a loss of future options; irreversible resource commitments involve the use of natural and human-made resources like metals, building materials, water, fossil fuels, electricity etc. that cannot be recovered, or take a long time to regenerate. Irretrievable resource commitments generally refer to the alteration or destruction of resources that cannot be restored, such as the extinction of a protected species. Irreversible and irretrievable resource commitments are not mutually exclusive.

4.9.1 No Action Alternative

Under the No Action Alternative, Ashley Central Canal would continue to deteriorate and require continued maintenance. In time, the canal infrastructure would likely need to be entirely replaced. This consistent maintenance and ultimate replacement would require a range of natural, physical, capital and labor resource commitments. Similarly, the Coal Mine and Yellow Hills Sub-basins and downstream areas would continue to be at risk for flooding in the event of a major storm. With no action, flood damage would persist, capital and labor requirements would increase, and public health and safety would suffer.

4.9.2 Alternative 3

Implementing Alternative 3 would require the immediate and irreversible commitment of natural, physical, capital, and labor resources. Fossil fuels, financial and human resources, and construction materials would be consumed to complete the Alternative 3. Generally, such resources are not considered "reversible." Proceeding with Alternative 3 would benefit the greater Ashley Valley by increasing water conservation and water quality, enhancing deteriorating infrastructure, improving recreational infrastructure, and improving public health and safety. When analyzing the value of saving these irreversible resources compared to the benefit of utilizing these resources to construct the Alternative 3, the benefits generally outweigh what would be consumed.

Chapter 5 Consultation, Coordination & Public Participation

This chapter describes the public and agency coordination efforts for the Proposed Project. The intent of the Proposed Project is to implement a solution that would provide agricultural water management, improve recreational infrastructure, and provide flood control for the project area.

5.1 Consultation

5.1.1 Utah State Historic Preservation Office

A cultural resources survey was completed by Certus Environmental Solutions, LLC and submitted to the Utah SHPO to comply with Section 106 of the NHPA. SHPO concurred with the eligibility and effect determinations described in the Cultural Resource Report on September 24, 2021. SHPO correspondence is included in Appendix A.

5.1.2 U.S. Army Corps of Engineers

The USACE has jurisdiction over work in waters of the U.S. under Section 404 of the CWA. Coordination with the USACE determined that the irrigation piping portion of Alternative 3 would be eligible for an agricultural exemption under Section 404(f) of the CWA (Appendix A). Therefore, it is not anticipated that Alternative 3 would require a permit under the CWA for the piping of Ashley Central Canal. The USACE also completed an Approved Jurisdictional Determination for the detention basin sites, which determined that the detention basins are not subject to permitting under the CWA (Appendix A). Therefore, coordination with USACE determined that there would be no impacts to jurisdictional water resources from the implementation of Alternative 3 described in this Plan-EA.

5.1.3 Tribal

In accordance with E.O. 13175, NRCS is responsible for assessing the impacts of activities, considering tribal interests, and assuring that tribal interests are considered in conjunction with federal activities and undertakings. NRCS recognizes that tribal governments are sovereign nations located within the United States. NRCS has responsibility to help fulfill the U.S. government's responsibilities toward tribes when considering actions that may affect tribal rights, resources, and assets.

Initial scoping letters detailing information about the Preferred Alternative were sent to the Northwestern Band of Shoshone, Skull Valley Goshutes, Ute Indian Tribe of the Uintah and Ouray Reservation, and the Paiute Indian Tribe of Utah on May 7, 2019. The scoping letters gave a description of the project, location, and overview, and requested participation and input. The scoping notice also provided details of the scoping meeting, contact information to submit written comments, and the scoping period open and closure date.

The NRCS Archaeologist conducted the tribal consultation and NRCS submitted letters on September 13, 2021 to the Shoshone-Bannock Tribes of the Fort Hall Reservation, Ute Indian Tribe of the Uintah & Ouray Reservation, Eastern Shoshone Tribe of the Wind River Reservation, and the Northwestern Band of Shoshone Nation for concurrence and compliance with Section 106 requirements. The Tribes have not responded to the request for consultation. Tribal consultation letters are included in Appendix A.

5.2 Coordination

5.2.1 U.S. Fish and Wildlife Service

The USFWS was invited to comment on the project during the scoping period. A BA was prepared for the Proposed Project and determined that the Proposed Project would have No Effect on listed animal species and arrived at a May Affect Not Likely to Adversely Affect determination for the listed Ute Ladies'-tresses. NRCS submitted the BA to USFWS on January 22, 2021. Concurrence from the USFWS on the BA was received on May 20, 2021.

5.2.2 Utah Division of Wildlife Resources

The UDWR was invited to comment on the project during the scoping period. A state sensitive species list was obtained as part of the biological resource analysis and the BA determined that there would be no impact to state sensitive species from the implementation of the Proposed Project.

5.3 Public Participation

During the scoping period, 24 comments were received regarding the Proposed Project. The 30-day scoping period for this project began on May 9, 2019 and closed on June 7, 2019. The public scoping meeting was held on May 23, 2019 in Vernal, Utah.

As part of the NEPA process, NRCS published the Draft Plan-EA for the Proposed Project for public comment on May 31, 2022, and later on July 13, 2022. A public open house was held for the Draft Plan-EA on June 14, 2022. Based on the comments received during the June 14, 2022 meeting, a design variation was developed to address public concerns related to the Kids Canal. NRCS held a second Public Meeting on July 27, 2022.

Following revisions to the Draft Plan-EA pertaining to substantive public comments, the Draft Plan-EA was published for public comment and a third Public Meeting was held on November 15, 2022. Based on coordination with community stakeholders at the November 15th Public Meeting, improvements to the Kids Canal Parkway were added to the recreation component of the project, and additional cultural resource mitigation components were discussed. An additional public comment period was held from January 18, 2023 to February 17, 2023 to provide stakeholders an opportunity to review the recreation and cultural mitigation updates in the Draft Plan-EA. The FONSI was issued on May 25, 2023. The NOA for the Final Plan-EA and FONSI will be published on June 7, 2023. All public comment documentation is included in Appendix A of the Final Plan-EA.

5.3.1 Public Participation

The main goal of public participation is to involve diverse groups of the public, and government agency representatives to solicit input and provide relevant and timely information throughout the NEPA review process. It is meant to engage all demographics of the public in the NEPA review process, who may be potentially affected by the proposed action. Outreach methods are described in the following section. Table 5-1 lists the project's public outreach activities (some of which are still pending).

Table 5-1. Public Outreach Activities

Date	Activity	Type
April 4, 2019	Preliminary Kick-off Meeting	
May 3, 2019	Scoping Notice Published to NRCS Project Website	Online Publication
May 7, 2019	Public Notice Published in the Vernal Express and Uintah Basin Standard	Newspaper Publication
May 7, 2019	Scoping Letters sent to Public and Agencies	---
May 14, 2019	Public Notice Published in the Vernal Express and Uintah Basin Standard	Newspaper Publication
May 23, 2019	Public Scoping Open House	Open House held at Uintah County Western Park; 301 East 200 South, Vernal, UT 84078
June 7, 2019	Scoping Public Comment Period Closed	---
May 31, 2022	Notice of Draft Plan-EA Public Comment Period	Newspaper and Online Notification
June 1, 2022	Draft Plan-EA Public Comment Period Open	---
June 14, 2022	Draft Plan-EA Public Open House	Open House held at Uintah County Western Park; 301 East 200 South, Vernal, UT 84078
July 1, 2022	Draft Plan-EA Public Comment Period Closed	---
June 30, 2022	Notice of Draft Plan-EA Public Comment Period	Newspaper and Online Notification
July 13, 2022	Draft Plan-EA Public Comment Period Open	---
July 27, 2022	Draft Plan-EA Public Meeting	Meeting held at Uintah County Western Park; 301 East 200 South, Vernal, UT 84078
August 10, 2022	Vernal City Council Meeting	Vernal City & Uintah County Joint Meeting on Ashley Central Canal Plans (see Appendix E)
August 12, 2022	Draft Plan-EA Public Comment Period Closed	---
November 2, 2022	Notice of Draft Plan-EA Public Comment Period	Publication
November 7, 2022	Draft Plan-EA Public Comment Period Open	---
November 15, 2022	Draft Plan-EA Public Meeting	Meeting held at Uintah County Western Park; 301 East 200 South, Vernal, UT 84078
December 9, 2022	Draft Plan-EA Public Comment Period Closed	---
January 4, 2023	Notice of Draft Plan-EA Public Comment Period	Publication

Date	Activity	Type
January 18, 2023	Draft Plan-EA Public Comment Period Open	---
February 17, 2023	Draft Plan-EA Public Comment Period Closed	---
June 7, 2023	NOA Final Plan-EA and FONSI	Publication

5.3.2 Project Scoping

The scoping procedure for the formulation of this Plan-EA followed the general procedures outlined in the NRCS NWPH (NRCS 2014a) and the NRCS NWPM (NRCS 2014b). NRCS procedures and NEPA regulations (40 CFR 1500-1508) require that the NRCS use a scoping process early in the planning phase to identify issues, concerns, and potential impacts that require analysis.

Directed by NRCS, J-U-B coordinated with local, state, and federal agencies regarding subjects pertinent to their jurisdiction, authority, and expertise. Agency coordination occurred via telephone, email, and written letter. Prior to initial scoping, the NRCS approved a scoping letter and project map developed by J-U-B. The purpose of the scoping letter was to inform agencies of the Plan-EA and to request preliminary comments on the proposal. Formal coordination and consultation with tribes and SHPO was completed by NRCS.

A Public Scoping Open House was held on May 23, 2019 with the purpose of involving the public and gathering feedback regarding community natural resource concerns related to the Proposed Project. The public was encouraged to submit comments during the public scoping period that started May 9, 2019 and ended June 7, 2019. A total of 38 public attendees, four project team members from J-U-B, two NRCS representatives, one Bureau of Reclamation representative, and several project sponsor representatives attended the meeting, and 24 comments were received during the scoping period for the Proposed Project.

A number of comments were received from individual stakeholders after the scoping period closed (six emailed comments and a document with 247 signatures and comments), which prompted post-scoping stakeholder meetings. Individual stakeholder meetings were held with the Friends of Kids Canal on August 17, 2019 and October 20, 2019, and the McNaughten Gulch Water Users on January 8, 2020. A Scoping Report was prepared that provided a summary of the scoping process, including stakeholder meetings (Appendix E). A summary of the natural resource and recreation concerns identified during the public open house, agency scoping, and stakeholder meetings are described in the Scoping Report (Appendix E).

5.3.3 Agency Involvement

Federal, state, tribal, and local agencies were involved in project formulation and given the opportunity to comment on the Proposed Project. A project scoping letter was mailed to various agencies on May 7, 2019. The following agencies received a project scoping letter:

Federal

- USFWS
- U.S. EPA, Region 8
- USACE, Bountiful Regulatory Office
- BLM, Green River District, Vernal Field Office

- U.S. Forest Service (USFS), Ashley National Forest, Vernal Ranger District

State & Local

- UDWR
- UDEQ DWQ
- Utah Division of State History
- UDOT, Region 3
- Uintah County
- Utah State Clearinghouse
- Utah Department of Public Safety, Division of Emergency Management
- Board of Water Resources
- Utah Department of Agriculture and Food
- Utah Division of Water Rights, Eastern Regional Office
- Utah Public Lands Policy Coordination Office
- Utah Division of Forestry, Fire and State Lands
- Vernal City
- Naples City
- Green River City

Tribes

- Northwestern Band of Shoshone
- Skull Valley Goshutes
- Ute Indian Tribe of the Uintah and Ouray Reservation
- Paiute Indian Tribe of Utah

Other

- Utah Rivers Council

5.3.4 Agency Plan-EA Reviews

NRCS reviewed and commented on the Draft Plan-EA prior to issuing the Draft Plan-EA for public review. Agency comments on the Draft Plan-EA were addressed before the Draft Plan-EA was issued for public comment. Similarly, NRCS reviewed and commented on the Final Plan-EA prior to issuing the NOA for the Final Plan-EA and FONSI. Agency comments on the Final Plan-EA were addressed before the FONSI was issued.

5.4 Draft Plan-EA Public Comment Period

As part of the NEPA process, NRCS published the Draft Plan-EA for the Proposed Project for public comment on May 31, 2022 and later on July 13, 2022. The public comment period began on June 1, 2022 and closed on July 1, 2022. The Draft Plan-EA Open House was held on June 14, 2022. Based on the comments received during the June 14, 2022 meeting, a design variation was developed to address public concerns related to the Kids Canal. NRCS held a second Public Meeting on July 27, 2022. The purpose of the Public Meeting was to follow up on the comments that were received regarding the Kids Canal, present the Kids Canal design variation, and provide an opportunity for public comment on the design variation and overall project. Participants were invited to submit an open mic submission during the Public Meeting, and/or submit comments in

writing either at the meeting or by mail or email during the public comment period. The public comment period for the Draft Plan-EA officially opened on July 13, 2022 and ended on August 12, 2022.

Based on comments received during the July 27th public meeting, the Draft Plan-EA was updated and published for third public comment period and a third Public Meeting was held on November 15, 2022 at the Uintah County Western Park Event Center. The third public comment period was held from November 7, 2022 to December 9, 2022. Based on coordination with community stakeholders at the November 15th Public Meeting, improvements to the Kids Canal Parkway were added to the recreation component of the project, and additional cultural resource mitigation components were discussed. An additional public comment period was held from January 18, 2023 to February 17, 2023 to provide stakeholders an opportunity to review the recreation and cultural mitigation updates in the Draft Plan-EA. A Scoping Report was prepared that provided a summary of the scoping process, including stakeholder comments and public meetings (Appendix E). The Final Plan-EA documents the public comment process, including all comments and responses. All public comment documentation is included in Appendix A of the Final Plan-EA.

5.5 Final Plan-EA

A NOA was published in the paper of local record to notify the public when the Final Plan-EA and FONSI were issued by the NRCS.

Chapter 6 Preferred Alternative

6.1 Purpose & Summary

Alternative 3 was determined to be the Preferred Alternative because of its ability to meet the purpose and need for the project, to have the least impacts to environmental and social resources, and to have the greatest net economic benefits of the available alternatives.

The watershed area associated with the Preferred Alternative is 45,907 acres and is mostly defined by the outer boundaries of the two 6th field subwatersheds that contain the Preferred Alternative project features, which are identified as the Coal Mine Basin-Ashley Creek Subwatershed (140600100902) and the City of Vernal-Ashley Creek Subwatershed (140600100903). The watershed area containing the Preferred Alternative is wholly within the Lower Green-Diamond 5th field HUC watershed (14060010). The watershed area contains the municipalities of Naples and Vernal, and Maeser, a census-designated place. The Preferred Alternative watershed area is shown on Figure 1-1 and Map 1 in Appendix B.

6.2 Rationale for Preferred Alternative Selection

Alternative 1 was considered for detailed study in the Draft Plan-EA (dated May 2022) and brought forth as the Preferred Alternative. Through the Draft Plan-EA public involvement process, several comments were provided by the public that required further consideration, such as the permanent impacts to vegetation, wildlife, cultural resources, recreation, scenic beauty, and visual resources along the Kids Canal portion of Ashley Central Canal. As a result of the public involvement process, Alternative 1 was revised to address the substantive comments made by the public during the Draft Plan-EA public comment period. Alternative 3 represents the revised Alternative 1.

Alternative 3 is considered the Preferred Alternative and described in detail in Section 6.3 (Appendix B. Map 2). Alternative 3 was selected as the Preferred Alternative because it addressed water quality, agriculture water management, improved recreational infrastructure and provided flood protection. Furthermore, Alternative 3 addressed substantive public comments regarding resource impacts along Kids Canal. Alternative 3 is projected to conserve approximately 4,812.7 ac-ft of vital irrigation water that services farmland within Uintah County; and, as irrigators have the opportunity to move from flood irrigation to sprinkler irrigation, it would improve the likelihood that users receive their allocated share of water, reduce water conflicts, and improve water quality and quantity in Ashley Creek. Although Alternative 3 would lose some supplemental water to seepage in Kids Canal, supplemental water and associated seepage would be necessary for cultural, historical, and recreation significance. The Preferred Alternative would have 827 direct beneficiaries (including 489 irrigation shareholders). Construction of the two detention basins would add needed flood protection for the residents of Uintah County. The detention basins would fully detain storm water according to the 10-year, 24-hour storm without exercising the overflow spillway. Existing flood protection provided by the Ashley Central Canal would continue through maintaining the channel as a flood control facility after irrigation water is piped and no longer flowing in the open canal. Flood protection, water security and water delivery efficiency for agricultural users is of vital importance. Climate change, intense storms, and devastating droughts continue to impact the project area, especially agricultural producers. Additionally, in 2018 Uintah County experienced wildfires as a result of extreme drought conditions. With the loss of mature vegetation due to fire, the project area could be harshly

impacted with mud, debris and sediment in the event of a heavy runoff event. Alternative 3 would allow the sponsor to build the necessary detention basins to offer protection to the public and property at risk. Implementing Alternative 3 would result in a substantial impact on safety and water security for numerous residents and irrigators in the project area.

The No Action Alternative would not meet the purpose and need of the project as identified above. Alternative 3 would meet the purpose and need of the project and would provide the greatest net benefit. Alternative 3 was selected as the Preferred Alternative and was also determined to be the NED Alternative. Refer to the Investigation and Analyses Report in Appendix D for additional information.

6.3 Measures to be Installed

Piping and Pressurization

The Preferred Alternative would pipe and pressurize 9.6 miles of the total Ashley Central Canal length with 16-inch to 48-inch HDPE pipe and fittings, reconstruct the Thornburg Diversion, replace 38 turnouts with new metered turnouts, install an energy dissipation structure, install two screening structures (one at the Thornburg Diversion and one at the entrance of the Steinaker Service Canal into the Ashley Central Canal), and construct a new inlet control structure at the McNaughten Gulch tie-in to turnout #13. The second screening structure would allow water from Steinaker Service Canal to enter midway along the piped Ashley Central Canal below the energy dissipation structure. Piping and pressurizing Ashley Central Canal would facilitate irrigators' ability to change from flood irrigation to sprinkler irrigation. Once the irrigation pipeline is installed, the existing open canal would be regraded and would then function as a floodwater conveyance facility. The entire canal would remain an open floodwater conveyance facility with the exception of the final 1,500 ft of the canal through Naples, which would be piped and buried to convey floodwater and tail water. The Ashley Central Canal would have the capacity to handle a 100-year storm event. See Section D.2.3.2 in Appendix D for further technical information about the hydraulics of the system.

Kids Canal

The 0.5-mile section of the Ashley Central Canal between 500 North and Main Street is referred to as the Kids Canal. Currently, this section of Ashley Central Canal is open with significant tree coverage sustained by canal seepage. The pipeline construction and placement for most of the 9.6 miles of the Ashley Central Canal would be designed for placement in the east bank of the canal. However, most of the trees along Kids Canal are growing on the east bank of the canal. Under the Preferred Alternative, the proposed design has been modified through this section to install the pipeline in the west bank of the canal adjacent to 1500 West. Trees present along the west bank would be protected, whenever feasible. The majority, if not all, of the trees on the east bank would be preserved. Less than a third of the trees on the west bank are anticipated to survive construction, however the majority of those that can be preserved would be on the lower section near Main Street. The design rendering for Kids Canal is included in Appendix B.

Under the Preferred Alternative, Kids Canal would remain open and unlined. The Kids Canal Parkway path would be improved with an asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables. As part of the cultural mitigation, an informational kiosk on the Kids Canal history would be constructed along the path, supplemental water shares would be purchased and diverted into Kids Canal to sustain the trees that remain along the canal after construction and to provide open water for aesthetic and passive

recreation purposes, and public outreach materials with the Kids Canal history would be produced. On August 9, 2022, Uintah County Special Services District #1 voted to allow water associated with the Uintah County Golf Course to flow through Kids Canal. The golf course water is currently delivered through the existing turnout near 500 S. This water typically fluctuates between 1 to 2 cfs throughout the irrigation season. In addition to the golf course water, Uintah County has agreed to purchase additional water equivalent to 0.5 cfs for the duration of the irrigation season. Fifteen primary shares of Ashley Central Canal water have already been purchased and allocated toward the Kids Canal. The Uintah County Special Services District #1 meeting minutes, and documentation from ACIC for the primary water shares are included in Appendix E. Supplemental water would be introduced back into Kids Canal by modifying an existing user turnout near the upper end of Kids Canal to allow water to be conveyed into Kids Canal. This turnout would include a valve and meter. At the end of the Kids Canal, the supplemental water would flow into the Uintah County pipe inlet. Water would be collected in a box and would flow into a new non-pressurized pipe to an existing Ashley Central Canal user turnout near 500 S where it would be delivered to existing shareholders on the canal. A Flow Measurement Study for the Kids Canal was conducted in August 2022 to determine the amount of water required to sustain the preserved trees and provide enough flow to account for seepage. The Flow Measurement Study demonstrated that 1.75 cfs through Kids Canal would be required to sustain the trees, to carry water to the lowest portion of Kids Canal, and to provide for flow for passive recreation purposes. Although studies demonstrate that the proposed supplemental water shares should be enough to support the trees, additional water may be necessary depending on the water year (Appendix E).

Detention Basins

The Preferred Alternative would also construct two below-grade detention basins, Coal Mine (68.4 ac-ft) and Yellow Hills (72.3 ac-ft). Spoils from the excavation of the detention basins would be utilized on site to grade and contour the basins or would be removed by a qualified contractor to a local, authorized materials pit. No embankment would be built around the detention basins, but a guide berm (less than one foot in height) would be installed where needed to direct floodwaters flowing into the basins. An auxiliary, overflow spillway would be installed for each basin at the downstream overbank (east side of the basin). These 68.4 ac-ft and 72.3 ac-ft detention basins would allow for critical flood protection in the Ashley Valley. The Coal Mine and Yellow Hills Detention Basins would be designed to fully detain floodwater from the 10-year, 24-hour storm without exercising the overflow spillway. The Coal Mine and Yellow Hills Detention Basins would have 26.76 ac-ft and 7.68 ac-ft, respectively, of additional storage above the 10-year peak storage, providing partial flood control for larger storm events. The Coal Mine and Yellow Hills Detention Basins would have a 30-inch diameter low-level outlet pipe that directs water to the Highline Canal and Ashley Upper Canal, respectively.

The Preferred Alternative is estimated to cost $19,601,669. Access to the project area can be achieved at numerous locations using public roads. Map 2 (Appendix B) illustrates the project area, including staging areas.

Construction of the pressurized irrigation pipe is anticipated to start in fall 2023 and complete in fall 2026, with construction activities taking place outside of the irrigation season. Construction of the improved Kids Canal path would begin in the spring and summer of 2024. Prior to construction, any necessary landowner approvals for improvements along the Kids Canal will be obtained, where appropriate. Construction for the detention basins would begin in fall 2023 and complete

fall of 2024. Backhoes, excavators, haul trucks, and other smaller construction vehicles and equipment would be used to complete Preferred Alternative.

The measures proposed for the Preferred Alternative would be designed to NRCS conservation practice and safety standards. The design items listed below, as well as construction practices, would be submitted to NRCS for review prior to the start of construction.

- Piping & Water Delivery
    - Reconstruct the Thornburg Diversion
    - Turnout meters
    - Two screening structures, one at the main Thornburg Diversion and one at the entrance of the Steinaker Service Canal into the Ashley Central Canal
    - McNaughten Gulch inlet control structure
    - Ashley Central Canal Floodwater Conveyance
        - Canal reshaping and regrading
- Recreational amenities
    - Retain existing open, unlined Kids Canal
    - Provide water shares to Kids Canal (under cultural resource mitigation)
    - Modify existing user turnout (under cultural resource mitigation)
    - Historical information kiosk (under cultural resource mitigation)
    - Public outreach materials of Kids Canal history (under cultural resource mitigation)
    - Improved asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade structures and picnic tables
- Below-grade detention basins
    - Outlet structures
    - Appurtenances
    - No dam or levee would be constructed

6.4 Mitigation

6.4.1 Avoidance & Minimization

BMPs would be implemented during and post-construction to avoid and minimize impacts to environmental resources in the project area that could occur as a result of the Preferred Alternative.

Soils & Geology: All necessary BMPs would be in place to control sediment and erosion, and to protect water quality during construction activities. Disturbed areas would be reseeded to encourage the establishment of native, drought-tolerant vegetation, and to prevent construction related erosion and sediment delivery.

Water Resources: Construction would be timed to occur outside of the irrigation season, beginning in the fall of 2023 for the pressurized irrigation piping. All necessary BMPs would be in place to control sediment and erosion, and to protect water quality during construction activities. Disturbed areas would be reseeded to encourage the establishment of native, drought-tolerant vegetation, and to prevent construction related erosion and sediment delivery. Other BMPs would be implemented during construction to protect water quality and to prevent water pollution from runoff, spills, leaks, and leaching. A NPDES, administered by the UPDES, CGP would be required to construct the Preferred Alternative. A CGP, and associated SWPPP and SPCC Plan are required for construction activities disturbing over 1 acre.

Air Quality: BMPs for fugitive dust suppression would be implemented to minimize air quality impacts. Construction equipment would also be required to meet all air quality standards, including properly functioning mufflers.

Plants: Trees present along the west bank of Kids Canal would be protected, whenever feasible. The majority, if not all, of the trees on the east bank of Kids Canal would be preserved (see Design Rendering in Appendix B). BMPs for preservation of existing vegetation and site stabilization would be implemented to minimize impacts to vegetation in the project area. Equipment would be pressure washed to avoid noxious weed dispersal within the project area. Native seed mixes appropriate to the surrounding habitat would be utilized to re-establish vegetation in all areas with ground disturbance. All construction activities and staging areas shall be confined within the project footprint. The contractor would be prohibited from entering in the Ashley Creek channel and would be prohibited from entering areas where documented Ute ladies'-tresses are known to occur. This would avoid disturbance to the opposite bank of Ashley Creek, where suitable habitat for the species exists and where individual plants have been identified. The Preferred Alternative would not disturb documented Ute ladies'-tresses plants.

Animals: BMPs pertaining to preservation of existing vegetation, construction phasing, TECs, site stabilization, equipment fueling, and containment, waste management, and fugitive dust suppression would be implemented along the entire alignment to minimize impacts to wildlife species and habitat surrounding the canal prism. In project locations that occur next to Ashley Creek, BMPs would be implemented to reduce impacts to riparian species; specifically, no construction equipment shall enter Ashley Creek.

Based on comments received from the PLPCO in collaboration with UDWR, and that the Coal Hill detention basin is in crucial winter mule deer habitat, no construction activities at the Coal Hill detention basin may occur from December 1 – April 15. Construction activities would be limited to the smallest extent practicable within the project area and would occur outside of migratory bird breeding or nesting periods unless surveyed by a qualified biologist for active nests no more than 5 days prior to the commencement of work. The site shall be cleared for any migratory bird and bird nests prior to removing any large trees and shrubs. Overall, no impacts to these species are anticipated.

If any active migratory bird nests are found during surveys, coordination would take place with NRCS and USFWS to determine the appropriate course of action. It is anticipated that spatial buffers would be established in coordination with the USFWS and NRCS. Construction activities within the buffer areas would be prohibited until a qualified biologist confirms that all nests are no longer active.

Cultural, Historic, & Paleontological Resources: Based on the results from the Cultural Resource Report, the NRCS determined that the Preferred Alternative would have an adverse effect on the Ashley Central Canal, the NRHP-eligible site (42UN5195).

Section 106 consultation has been completed for the Preferred Alternative. SHPO concurred with the eligibility and effect determinations described in the Cultural Resource Report (Appendix A) on September 24, 2021. NRCS submitted letters to the Shoshone-Bannock Tribes of the Fort Hall Reservation, Ute Indian Tribe of the Uintah & Ouray Reservation, Eastern Shoshone Tribe of the Wind River Reservation, and Northwestern Band of Shoshone Nation for concurrence and compliance with Section 106 requirements on September 13, 2021. The Tribes have not responded to the request for consultation. Tribal consultation letters are included in Appendix A.

Given that the majority of the Ashley Central Canal will remain an open floodwater conveyance facility, thus reducing the level of adverse effects, the focus of mitigation efforts will be for the Kids Canal. In accordance with 36 CFR Part 800.6, NRCS mitigated the adverse effects to Ashley Central Canal and Kids Canal (42UN5195) through the development of a MOA between the Utah SHPO, the NRCS, Uintah County, ACIC, and Special Services District #1, along with the Friends of the Kids Canal and Ahrnsbrak Family as concurring parties. Mitigation stipulations include the supplemental water shares that have been and will be purchased and diverted into the Kids Canal to sustain the vegetation, passive recreation opportunities and scenic quality. In addition, an informational kiosk will be installed at the Kids Canal, and additional public outreach materials will be developed. The MOA was executed pursuant to compliance with Section 106 of the National Historic Preservation Act prior to the approval of the Final EA and is included in Appendix E.

If construction activities uncover any materials of cultural or historic significance (i.e., bone fragments, pottery, stone tools, burial features, etc.), construction would halt and coordination with the NRCS Archaeologist, SHPO, THPO and Uintah County Sheriff would occur, following the post-review discovery procedures outlined in the Prototype Programmatic Agreement between the NRCS and SHPO.

***Hazardous Materials**:* A SPCC would be in place prior to any construction activities. Construction equipment would be fueled offsite at a commercial facility. A SWPPP would be in place prior to any construction.

Noise: Noise mitigation measures such as established daytime working hours and the use of properly functioning equipment mufflers would be implemented during construction to minimize temporary noise impacts.

Human Environment / Transportation / Infrastructure: Flaggers would be utilized, where necessary, to control construction traffic along roadways. The general public would experience minor delays while construction traffic is traveling to and from the project area.

6.4.2 Compensatory Mitigation

Compensatory mitigation would not be required for the Preferred Alternative.

6.5 Permits & Compliance

6.5.1 Federal

U.S. Army Corps of Engineers

A WRA was completed for the project area and determined that the Preferred Alternative is not anticipated to significantly impact Waters of the U.S (Appendix E). It is expected that the USACE would determine that the piping of Ashley Central Canal would qualify for an agricultural exemption, and an Approved Jurisdictional Determination was issued for the detention basins (Appendix A).

U.S. Fish and Wildlife Service

A BA was completed for the Proposed Project and determined that the Preferred Alternative May Affect but is Not Likely to Adversely Affect the Ute ladies'-tresses and would have No Effect on federally-listed species or critical habitat (Appendix E). The BA was prepared and submitted to USFWS for compliance with Section 7 of the ESA. USFWS concurrence was received on May 20, 2021 (Appendix A).

6.5.2 State

Utah Department of Transportation

Encroachment Permits allow for temporary construction work within the UDOT ROW. An Encroachment Permit likely would be required where work on the Ashley Central Canal intersects state or federal roadways.

Utah Division of Water Quality

Under Section 402 of the CWA, a UPDES CGP is required for construction activities that disturb more than 1 acre with potential to discharge pollutants into surface waters. A SWPPP would be developed as part of the CGP.

Utah Division of Water Rights

Stream Alteration Permit – Canal Improvements adjacent to Ashley Creek, where work would fall within 30 ft of the stream channel would require a Stream Alteration Permit.

Utah State Historic Preservation Office

A cultural resources survey was completed and the NRCS determined that there are four properties eligible for listing on the NRHP within the project area. The cultural resources survey was submitted to the Utah SHPO for concurrence. SHPO concurred with the eligibility and effect determinations described in the Cultural Resource Report (Appendix A). An inadvertent discovery plan will be prepared for the construction phase of the project. If construction activities were to inadvertently discover any materials of cultural or historical significance (i.e., bone fragments, pottery, stone tools, burial features, etc.), construction would halt and coordination with the NRCS Archaeologist, SHPO, THPO and the Uintah County Sheriff would occur, following the post-review discovery procedures outlined in the Prototype Programmatic Agreement between the NRCS and SHPO.

Tribal Historic Preservation Office, Tribal Governments

A cultural resources survey was completed and the NRCS determined that there are four properties eligible for listing on the NRHP within the project area. NRCS submitted letters to the Shoshone-Bannock Tribes of the Fort Hall Reservation (THPO), Ute Indian Tribe of the Uintah and Ouray Reservation (THPO), Eastern Shoshone Tribe of the Wind River Reservation, and the Northwestern Band of Shoshone Nation for concurrence and compliance with Section 106 requirements on September 13, 2021. The Tribes have not responded to the request for consultation. Tribal consultation letters are included in Appendix A. An inadvertent discovery plan will be prepared for the construction phase of the project. If construction activities were to inadvertently discover any materials of cultural or historical significance (i.e., bone fragments, pottery, stone tools, burial features, etc.), construction would halt and coordination with the NRCS Archaeologist, SHPO, THPO and the Uintah County Sheriff would occur, following the post-review discovery procedures outlined in the Prototype Programmatic Agreement between the NRCS and SHPO.

6.5.3 Local

Uintah County

Floodplain Development Permit Application

Naples City

ROW Encroachment Permit

Vernal City

ROW Encroachment Permit

Floodplain Development Permit Application

Uintah County

ROW Encroachment Permit

6.6 Installation & Financing

6.6.1 Planned Sequence of Installation

The sponsor anticipates that the construction would occur from fall 2023 through fall 2026. Construction of the pressurized irrigation pipe is anticipated to start in fall 2023 and complete in fall 2025, with construction activities taking place outside of the irrigation season. Improvements to the Kids Canal Parkway path would be completed in the spring and summer of 2024. Construction for the detention basins would begin in fall 2023 and complete fall of 2024. Prior to construction, any necessary landowner approvals for improvements along the Kids Canal will be obtained, where appropriate.

6.6.2 Responsibilities

Uintah County is the sponsor and responsible party for the coordination of the Plan-EA. Partners would coordinate with the County and NRCS as the County designs and constructs the Preferred Alternative. The sponsor and its partners would work in cooperation with other interested agencies to meet environmental, permitting, and public process requirements.

6.6.3 Contracting

All work associated with the Preferred Alternative would be properly procured using awarded contracts. The sponsor in coordination with NRCS would oversee and administer the construction of the Proposed Project.

6.6.4 Financing

As the principal benefactors of the Proposed Project, partnering resources are expected from UWCD, ACIC, and Uintah County Special Services District #1. Flood prevention projects are fully paid by NRCS and require no cost share. Agricultural water management projects require a 75/25 cost share. Therefore, NRCS would provide 75 percent of funds for the agricultural water management improvements and ACIC would bring a 25 percent cash match, using a loan from the Utah Board of Water Resources and cash reserves. UWCD would pay for 25 percent of the cost of the improvements to the Thornburg Diversion for Ashley Central Canal. The UWCD would provide funds to increase the pipe size ($400,000) to accommodate the increase in pipe pressure rating related to water delivery from Steinaker Service Canal.

On August 10, 2022, Uintah County Special Services District #1 voted to allow water associated with the Uintah County Golf Course to flow through Kids Canal. In addition to the golf course water, Uintah County has agreed to purchase additional water equivalent to 0.5 cfs for the duration of the irrigation season. Fifteen primary shares of Ashley Central Canal water have already been purchased and allocated toward the Kids Canal. The Kids Canal Parkway path would be improved with an asphalt surface, two pedestrian bridges, benches, garbage cans, ADA ramps, shade

structures and picnic tables. Public recreation development has a 50/50 cost share requirement; Uintah County Special Services District #1 would provide a 50 percent cash match for the purchase of supplemental water for Kids Canal.

6.7 Operation & Maintenance

Operation and maintenance of the irrigation infrastructure would be shared by Uintah Conservancy District and the ACIC. Operation of these facilities would include administration, management, and performance of non-maintenance actions needed to keep the facilities operational and safe. Maintenance includes performance of work, recording instrumentation data, preventing deterioration of structures, and repairing damage or replacement of the structure -as needed to prevent failure. Damages to completed structures caused by normal deterioration, droughts, flooding, or vandalism are considered maintenance. Operation and maintenance costs for the Preferred Alternative are estimated to be $120,000 annually.

6.8 Costs

Tables 6-1, 6-2, and 6-3 describe the estimated project and installation cost of the Preferred Alternative, and how those costs would be shared. Tables with an itemized materials list for flood prevention, agricultural water management, and public recreation works of improvement are included in Appendix D. Economic tables have been included to present information relevant to the costs and benefits of the Preferred Alternative (Tables 6-4, 6-5, and 6-6). Structural tables are included as Table 6-7 and Table 6-8.

Table 6-1. Estimated Installation Costs

(Dollars) 1/

Works of Improvement	Applicant Participation 2/	Public Law 83-566 Funding 2/	Total
Flood Prevention	$273,000	$4,595,137	$4,868,137
Agricultural Water Management	$3,034,688	$10,979,820	$14,014,508
Public Recreation	$335,940	$383,084	$719,024
Total	**$3,643,628**	**$15,958,041**	**$19,601,669**

1/ Price base: 2021. Prepared December 2022.

2/ All works of improvement would be on non-federal land.

Table 6-2. Estimated Cost Distribution – Water Resource Project Measures
(Dollars) 1/

Works of Improvement	Installation Cost – Public Law 83-566						Total Installation Costs						
	Construction	Engineering	Construction Engineering	Project Admin	Real Property Rights	Total Public Law 83-566	Construction	Real Property Rights	Water Rights	Permits	Project Admin	Total Other	Project Total
Flood Control and Detention 2/	$4,066,228	$104,607	$282,868	$141,434	$0	$4,595,137	$0	$254,000	$0	$15,000	$4,000	$273,000	**$4,868,137**
Agricultural Water Management	$9,047,065	$674,033	$839,148	$419,574	$0	$10,979,820	$3,015,688	$0	$0	$15,000	$4,000	$3,034,688	**$14,014,508**
Recreation	$316,940	$0	$44,096	$22,048	$0	$383,084	$316,940	$0	$0	$15,000	$4,000	$335,940	**$719,024**
Total	**$13,430,233**	**$778,640**	**$1,166,112**	**$583,056**	**$0**	**$15,958,041**	**$3,332,628**	**$254,000**	**$0**	**$45,000**	**$12,000**	**$3,643,628**	**$19,601,669**

1/ Price base: 2021. Prepared December 2022.

Table 6-2a. Cost Allocation and Cost Sharing Summary Water Resource Project Measures

(Dollars) 1/

Site	Item	Cost Allocation					Cost Sharing									
		Purpose					Public Law 83-566					Other				
		Flood Prevention	Watershed Protection	Public Recreation	Agricultural Water Mgmt.	Total	Flood Prevention	Watershed Protection	Public Recreation	Agricultural Water Mgmt.	Total	Flood Prevention	Watershed Protection	Public Recreation	Agricultural Water Mgmt.	Total
Ashley Valley Wtshd – Flood & Irrgtn. Water Project	Const.	$4,066,228	$0	$633,880	$12,062,753	$16,762,861	$4,066,228	$0	$316,940	$9,047,065	$13,430,233	$0	$0	$316,940	$3,015,688	$3,332,628
	Eng.	$104,607	$0	$0	$674,033	$778,640	$104,607	$0	$0	$674,033	$778,640	$0	$0	$0	$0	$0
	Const. Eng.	$282,868	$0	$44,096	$839,148	$1,166,112	$282,868	$0	$0	$839,148	$1,166,112	$0	$0	$0	$0	$0
	Real Prop. Rights	$254,000	$0	$0	$0	$254,000	$0	$0	$0	$0	$0	$254,000	$0	$0	$0	$254,000
	Permit	$15,000	$0	$15,000	$15,000	$45,000	$0	$0	$0	$0	$0	$15,000	$0	$15,000	$15,000	$45,000
	Admin	$145,434	$0	$26,048	$423,574	$595,056	$141,434	$0	$22,048	$419,574	$583,056	$4,000	$0	$4,000	$4,000	$12,000
	Total	**$4,868,137**	**$0**	**$719,024**	**$14,014,508**	**$19,601,669**	**$4,595,137**	**$0**	**$383,084**	**$10,979,820**	**$15,958,041**	**$273,000**	**$0**	**$335,940**	**$3,034,688**	**$3,643,628**

1/ Price base: 2021. Prepared December 2022.

Table 6-2b. Recreational Facilities – Estimated Construction Costs

(Dollars) 1/

Item	Description	Quantity	Unit	Unit Price	Total Amount
1	Mobilization	Lump Sum	1	$26,000	**$26,000**
2	Preconstruction Video	Lump Sum	1	$200	**$200**
3	4" Bituminous Surfacing on 8" UBC – 10' wide	LF	1,990	$95.00	**189,100**
4	Clearing & Grubbing, Earthwork & Grading	LF	1,990	$10.00	**19,900**
5	6" Concrete Sidewalk/Trail on 3" UBC – 4' wide	LF	730	$120.00	**87,600**
6	35' x 10' Pedestrian Bridge	2	Each	$70,000	**140,000**
7	Picnic Tables	3	Each	$1,500	**$4,500**
8	Benches	4	Each	$1,000	**$4,000**
9	Garbage Cans	3	Each	$450	**$1,400**
10	Bollards	4	Each	$500	**$2,000**
11	ADA Ramps	4	Each	$10,000	**$40,000**
12	Shade Structures	2	Each	$15,000	**$30,000**
13	Construction Staking	Lump Sum	1	$6,500	**$6,500**
	Construction Subtotal				**$551,200**
	Construction Contingency (15%)				**$82,680**
	Construction Engineering (8%)				**$44,096**
	Project Admin (NRCS) (4%)				**$22,048**
	Project Admin (Sponsor)	Lump Sum			**$4,000**
	Permits	Lump Sum			**$15,000**
Total					**$719,024**

Table 6-3. Structural Data—Dams with Planned Storage Capacity

(Coal Mine Basin-Ashley Creek and City of Vernal-Ashley Creek) (Utah)

Item	Unit	Total (Coal Mine)	Total (Yellow Hills)
Class of structure	-	N/A	N/A
Seismic zone	-		
Uncontrolled drainage area	mi^2	9.2	8.6
Controlled drainage area	mi^2	0	0
Total Drainage Area	mi^2	9.2	8.6
Runoff curve No. (1 day) (AMC II)		71.0	76.4

Item	Unit	Total (Coal Mine)	Total (Yellow Hills)
Time of concentration (Te)	Hrs	5.20	4.61
Elevation top dam	Ft	5730	5732
Elevation crest auxiliary spillway	Ft	5727.1	5727.4
Elevation crest high stage inlet	Ft	N/A	-N/A
Elevation crest low stage inlet	Ft	5722.5	5721.5
Auxiliary spillway type	-	Rock	Rock
Auxiliary spillway bottom width	Ft	100	100
Auxiliary spillway exit slope	Percent	1	3
Maximum height of dam	Ft	0	0
Volume of fill	Yd3	0	0
Total capacity 1/	Acre ft	68.4	72.3
Sediment submerged	Acre ft	0	0
Sediment aerated	Acre ft	0	0
Beneficial use (identify use)	Acre ft	0	0
Floodwater retarding	Acre ft	68.4	72.3
Between high and low stage	Acre ft	41.8	52.3
Surface Area			
Sediment pool 2/	Acres	15.1	13
Beneficial use pool (identify use)	Acres	0	0
Floodwater retarding pool 1/	Acres	15.1	13
Principal spillway design			
Rainfall volume (1-day)	In	2.46	2.47
Rainfall volume (10-day)	In	6.63	6.65
Runoff volume (10-day)	In	1.4	1.5
Capacity of low stage (max.	Ft3/s		
Capacity of high stage (max)	Ft3/s		
Dimensions of conduit	in	30	30
Type of conduit	-	HDPE	HDPE
Frequency operation-auxiliary spillway	Percent chance	10%	10%
Auxiliary spillway hydrograph			
Rainfall volume	In	N/A	N/A

Item	Unit	Total (Coal Mine)	Total (Yellow Hills)
Runoff volume	In	N/A	N/A
Storm duration	Hrs	N/A	N/A
Velocity of flow (Ve)	Ft/s	N/A	N/A
Max. reservoir water surface elevation	Ft	N/A	N/A
Freeboard hydrograph			
Rainfall volume	In	2.46	2.47
Runoff volume	In	0.7	0.8
Storm duration	Hrs	24	24
Max. reservoir water surface elevation	Ft	5725.1	5729.5
Capacity equivalents			
Sediment volume 3/	In	7	20.9
Floodwater retarding volume	In	0.15	0.17
Beneficial volume (identify use)	In	0	0

1/ Crest of auxiliary spillway. Prepared: November 2021.

2/ If reservoir contains beneficial storage or if sediment capacity would not store water, show area in parenthesis and footnote accordingly.

3/ The sediment volume represents the volume of sediment that would accumulate over nine years.

Table 6-3a. Structural Data – Channel Work (Exiting the Basin)

(Coal Mine Basin-Ashley Creek and City of Vernal-Ashley Creek) (Utah)

Channel Characteristics						**Channel Dimensions 1/**				***n* Value**		**Velocities (ft/s)**		**Channel Work**			
Channel name (reach)	Station	Drain area (mi^2)	(10-year storm) Year freq design dischg. (cfs)	Water surf. elev feet (msl) 6/	Hydraulic Gradient (ft/ft)	Gradient (ft/ft)	Bottom width (ft)	Elev. (ft/msl)	Side slope	aged	as built	Aged 5/	as built 5/	Excavation volume (yd^3)	Type of work 2/	Existing channel type 3/	Present flow cond. 4/
Coal Mine Wash	Whole Reach	9.291	37	5708.43	0.022	0.022	1'-75'	n/a	Varies	0.045	n/a	2.46	n/a	n/a	n/a	M (unknown)	E

1/ Where excavation is not planned, show cross-sectional area and wetted perimeter below hydraulic grade lines. Prepared: November 2021.
2/ I Establishment of new channel including necessary stabilization measures.
II Enlargement or realignment of existing channel or stream.
III Cleaning out natural or manmade channel (including bar removal and major clearing and snagging operations.
IV Clearing and removal of loose debris within channel section.
V Stabilization as primary purpose (by continuous treatment or localized problem areas – present capacity adequate).
3/ N An unmodified, well-defined natural channel or stream.
M Manmade ditch or previously modified channel or stream (show approximate date of original construction in parenthesis).
O None or practically no defined channel.
4/ Pr Perennial – Flows at all times except during extreme drought.
I Intermittent – Continuous flow through some seasons of the year
E Ephemeral – Flows only during periods of surface runoff, otherwise dry.
S Ponded water with no noticeable flow – caused by lack of outlet or high groundwater table.
5/ Explain discharge upon which velocities are based, that is design, bankfull, 10-year.
Note: A subscript "L" should be added to the Roman numeral classification to indicate an impervious lining.
6/ WSE is the water surface elevation of the flow in the existing natural drainage near the discharge of the Coal Mine Basins low level outlet pipe. The Datum for the WSE is NAVD88.

Table 6-4. Estimated Average Annual NED Costs

(Dollars) 1/

Measures	Project Outlays Amortization of Installation Cost	Project Outlays O&M and Replacement Cost	Total
Agricultural Water Management	$391,100	$110,600	$501,700
Recreation	$20,100	$12,200	$32,300
Flood Control	$135,800	$5,100	$140,900
Total	**$547,000**	**$127,900**	**$674,900**

1/ Price base: 2019. Calculated using FY 2020 Water Resources Discount Rate (2.75%), 100-year evaluation period and 103-year period of analysis. Prepared December 2022.

Table 6-5. Floodwater Damage Reduction Benefits

(Dollars) 1/

Item	Estimated Average Annual Damage 2/		
	Without Project (No Action Alternative)	With Project (Preferred Alternative)	Damage Reduction Benefit
Residential	$1,454,300	$216,500	$1,237,800
Commercial	$1,448,700	$207,600	$1,241,100
Other	$3,500	-	$3,500
Total	**$2,906,500**	**$424,100**	**$2,482,400**

1/ Price base: 2019. Calculated using FY 2020 Water Resources Discount Rate (2.75%), 100-year evaluation period and 103-year period of analysis. Prepared November 2021.
2/ All flood damage is agriculture-related. Agriculture-related damages include damages to rural communities

Table 6-6. Comparison of Annual NED Benefits and Costs

(Dollars) 1/

Project Measure	Average Annual Costs 2/	Floodwater Damage Reduction Benefit 3/	Rec. Benefit	Ag. Water Mgt. Benefit	Total Annual Benefits	Benefit Cost Ratio	Net Annual Economic Benefit
Ag. Water Mgt.	$501,700	-	-	$599,200	$599,200	1.2	$97,500
Rec.	$32,300	-	$59,700	-	$59,700	1.8	$27,400
Flood Control	$140,900	$2,482,400	-	-	$2,482,400	17.6	$2,341,500
Total	**$674,900**	**$2,482,400**	**$59,700**	**$599,200**	**$3,141,300**	**4.7**	**$2,466,400**

1/Price base: 2019. Calculated using FY 2020 Water Resources Discount Rate (2.75%), 100-year evaluation period and 103-year period of analysis. Prepared December 2022.
2/From Table 6-4.
3/From Table 6-5.

Chapter 7 References

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Chapter 8 List of Preparers

8.1 Draft Plan-EA Preparers

Table 8-1 lists the individuals who assisted in preparing this Final Plan-EA.

Table 8-1. List of Preparers

Name	Title (Years)	Agency/Firm	Education	Licenses/ Certifications
Norm Evenstad	Asst. State Conservationist – Water Resources (25)	USDA-NRCS	B.S. Geology	P.G.
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Name	Title (Years)	Agency/Firm	Education	Licenses/ Certifications
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Sheri Ellis	Archaeologist & Architectural Historian (30)	Certus Environmental Solutions, LLC	M.S. American Studies B.S. Psychology and Anthropology	Utah PLPCO Permit No. 47 BLM Permit No. 20UT85088

Chapter 9 Distribution List

A NOA for the Final Plan-EA was distributed to the following government agencies/staff and organizations.

9.1 Federal Government

- USACE
- U.S. BLM
- U.S. EPA
- USFWS
- USFS

9.2 Tribal Government

- Northwestern Band of Shoshone
- Shoshone-Bannock Tribes of the Fort Hall Reservation
- Eastern Shoshone Tribe of the Wind River Reservation
- Skull Valley Goshutes
- Ute Indian Tribe of the Uintah and Ouray Reservation
- Paiute Indian Tribe of Utah

9.3 State Government

- UDWR
- Utah DWQ
- Utah Division of State History
- UDOT, Region 3
- Uintah County
- Utah State Clearinghouse
- Utah Department of Public Safety, Division of Emergency Management
- Board of Water Resources
- Utah Department of Agriculture and Food
- Utah Division of Water Rights, Eastern Regional Office
- Utah Public Lands Policy Coordination Office
- Utah Division of Forestry, Fire and State Lands
- Utah Department of Cultural and Community Engagement
- Utah STEM Action Center
- Utah Division of State History

9.4 Local Government

- Uintah County
- Vernal City
- Naples City
- Green River City
- Center for Community Heritage
- Uintah County Library

9.5 Businesses and Organizations

- Utah Rivers Council

9.6 Private Parties

The names and addresses of private parties who received notice of the Final Plan-EA are not listed in this chapter for privacy purposes.

Chapter 10 Acronyms, Abbreviations, and Short Forms

Acronym/Abbreviation	Term
ac-ft	acre-feet
ACHP	Advisory Council on Historic Preservation
ACIC	Ashley Central Irrigation Company
AMSL	Above Mean Sea Level
APE	area of potential effect
ATV	all-terrain vehicle
BA	Biological Assessment
BGEPA	Bald and Golden Eagle Protection Act of 1940
BLM	U.S. Bureau of Land Management
BMPs	Best management practices
CAA	Clean Air Act
Census	U.S. Census Bureau
Certus	Certus Environmental Solutions, LLC
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
cfs	cubic feet per second
CGP	Construction General Permit
CWA	Clean Water Act
DAQ	Division of Air Quality
DNR	Department of Natural Resources
DR	Departmental Regulation
DWQ	Division of Water Quality
DWR	Division of Water Resources
EIS	Environmental Impact Statement
EJ	Environmental Justice
E.O.	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
ft	feet
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
HDPE	high-density polyethylene
HFC	Hydrofluorocarbon
HUC	Hydrologic Unit Code
IPaC	Information for Planning and Consultation
J-U-B	J-U-B ENGINEERS, Inc.
LOMR	Letter of Map Revision

Acronym/Abbreviation	Term
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NED	National Economic Development
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWPH	National Watershed Program Handbook
NWPM	National Watershed Program Manual
NO_2	Nitrogen Dioxide
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
O_3	Ozone
O&M Plan	Operations and Maintenance Plan
OHWM	ordinary high water mark
Pb	Lead
PFC	Perfluorocarbon
PL	Public Law
Plan-EA	Watershed Plan and Environmental Assessment
PLPCO	Public Lands Policy Coordinating Office
PM	Particulate Matter
ppb	parts per billion
Proposed Project	proposed Ashley Valley Watershed Flood & Irrigation Project
RCPP	Regional Conservation Partnership Program
RCRA	Resource Conservation and Recovery Act
Reclamation	U.S. Bureau of Reclamation
ROD	Record of Decision
ROW	right-of-way
Se	Selenium
SF_6	Sulfur Hexafluoride
SFHA	Special Flood Hazard Area
SGMA	Sage Grouse Management Area
SHPO	State Historic Preservation Office
SITLA	Utah School and Institutional Trust Lands Administration
SO_2	Sulfur Dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
TDS	Total Dissolved Solids

Acronym/Abbreviation	Term
TECs	Temporary Erosion Controls
THPO	Tribal Historic Preservation Office
TLG	The Langdon Group
UAC	Utah Administrative Code
UDEQ	Utah Department of Environmental Quality
UDOT	Utah Department of Transportation
UDWR	Utah Division of Wildlife Resources
UGS	Utah Geological Survey
UPDES	Utah Pollutant Discharge Elimination System
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
USWRC	U.S. Water Resources Council
UWCD	Uintah Water Conservancy District
VOC	Volatile Organic Compound
VRM	Visual Resource Management
WBD	Watershed Boundary Dataset
WFPO	Watershed and Flood Prevention Operations
WPFPA	Watershed Protection and Flood Prevention Act
WRA	Water Resources Assessment